

Phase 1 Alternative Analysis Final Report Volume I

Dallas-Fort Worth High-Speed
Transportation Connections Study

May 2023



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Appendix B

Previous Studies Technical Memorandum

Review of Plans and Previous Studies Technical Memorandum

Dallas-Fort Worth High-Speed
Transportation Connections Study

December 2020



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The North Central Texas Council of Governments (NCTCOG), in cooperation with the Federal Railroad Administration (FRA) and Federal Transit Administration (FTA), is conducting engineering and environmental studies for the high-speed passenger service between downtown Dallas and downtown Fort Worth; a distance of approximately 31 miles. Locally, the project is known as the Dallas-Fort Worth High-Speed Transportation Connections Study.

The intent of this technical memorandum is to review previous studies and plans related to high-speed passenger rail service between Dallas and Fort Worth. The documents reviewed can help provide an understanding of previously considered alignments/corridors, technologies, screening criteria, and recommendations.

The proposed study area is approximately bounded by Interstate Highway (IH) 35E, IH 35W, State Highway (SH) 183, and US 287/Spur 303/Loop 12. It traverses Dallas and Tarrant counties and the cities of Dallas, Irving, Cockrell Hill, Grand Prairie, Arlington, Pantego, Dalworthington Gardens, Hurst, Euless, Bedford, Richland Hills, North Richland Hills, Haltom City, and Fort Worth, a distance of approximately 31 miles. Figure 1 shows the study area that covers over 230 square miles.

The map displays the proposed high-speed rail corridor through the Dallas-Fort Worth metropolitan area. The route is indicated by a blue line, starting in Fort Worth, passing through Arlington and Irving, and ending in Dallas. Key transportation features include:

- Highways:** Major interstate highways (I-30, I-20, I-75, I-45, I-67) and state routes (US-281, US-75, US-80, US-179, US-67, US-287) are clearly marked.
- Airports:** The locations of Fort Worth International Airport, Dallas/Fort Worth International Airport, and Dallas Love Field are identified.
- Geography:** The map shows the surrounding landscape, including green spaces and urban areas.
- Scale:** A scale bar at the bottom right indicates distances from 0 to 8 miles.
- Logos:** The logo for the North Central Texas Council of Governments is located in the bottom left corner, along with the text "HIGH-SPEED TRANSPORTATION DALLAS-FORT WORTH".

3.0 PLANS

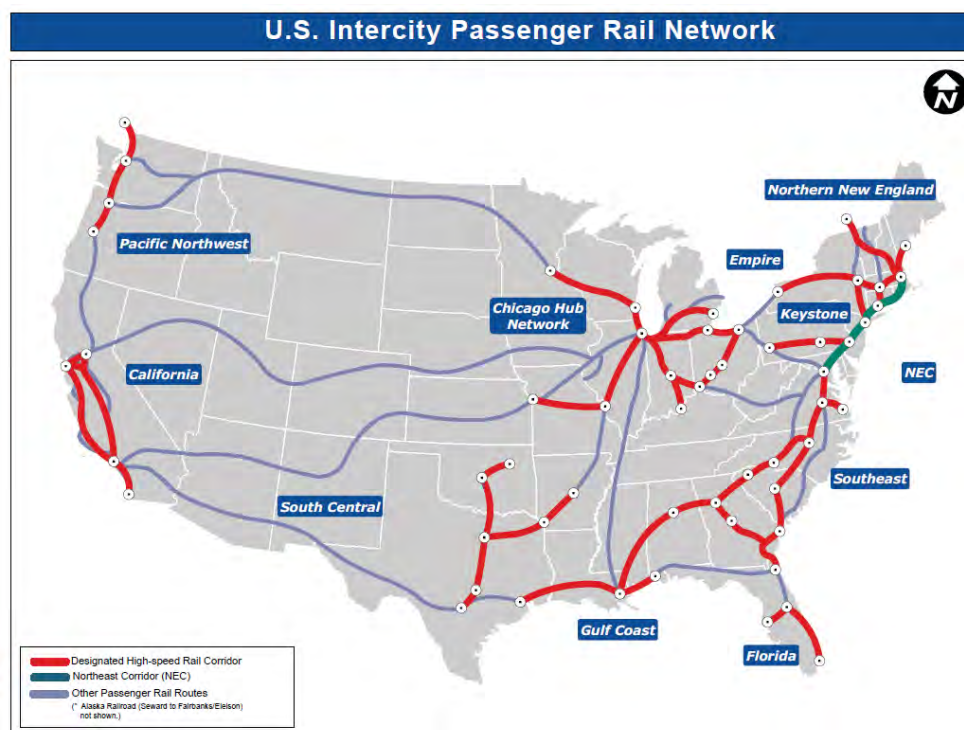
The North Central Texas region has been identified as a potential hub for passenger rail routes serving distant regions. Federal, state, and regional plans have indicated a vision or need for high-speed passenger rail service to, through, and within the Dallas-Fort Worth region.

3.1 VISION FOR HIGH-SPEED RAIL IN AMERICA

In April 2009, the FRA released a strategic planning document outlining a vision for high-speed rail in the US. The report, *Vision for High-Speed Rail in America* (<https://railroads.dot.gov/elibrary/vision-high-speed-rail-america>), proposed a long-term strategy to build an efficient, high-speed passenger rail network of 100- to 600-mile intercity corridors, as one element of a modernized transportation system. The report included an introduction and strategic transportation goals, benefits of passenger rail, a brief history of passenger train travel, funding, ownership, designated high-speed rail corridors, international examples, current challenges, and legislative foundation. The plan also included a proposed strategy to provide \$8 billion in federal funding through the American Recovery and Reinvestment Act of 2009 to help provide a major “boost” for the widespread development of improved intercity passenger rail service.

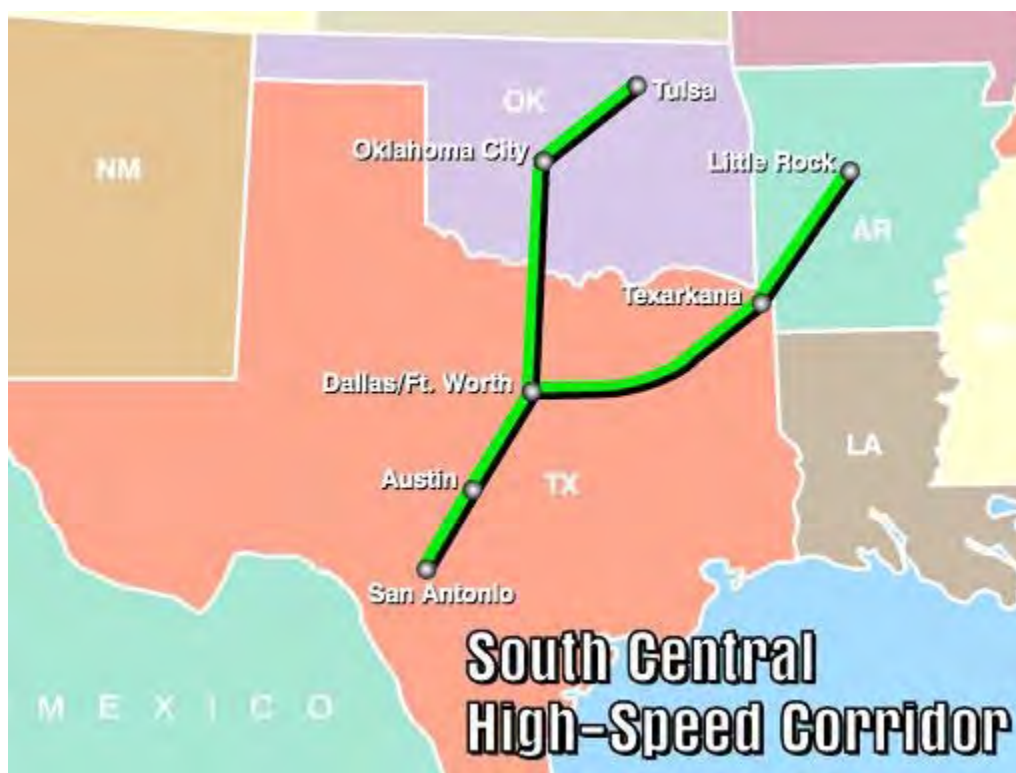
Ten corridors were identified as high-speed corridors (see Figure 2); all previously designated as high-speed rail corridors by several successive US Secretaries of Transportation. The South Central Corridor (see Figure 3) included two segments - Tulsa, Oklahoma, to Fort Worth, Texas (322 miles) and Little Rock, Arkansas, via Dallas/Fort Worth to San Antonio, Texas (672 miles).

Figure 2. Designated High-Speed Rail Corridors



Source: FRA, Figure 6 from *Vision for High-Speed Rail in America*, April 2009

Figure 3. FRA South Central High-Speed Rail Corridor



Source: FRA, <https://web.archive.org/web/20090320181435/http://www.fra.dot.gov/us/content/647>, Accessed 8/5/2020.

Texas did receive \$5.6 million dollars through the American Recovery and Reinvestment Act of 2009 to study passenger service from Oklahoma City, Oklahoma to South Texas. This funding was used to help fund the Texas to Oklahoma Passenger Rail Study (see Section 4.2).

3.2 TEXAS RAIL PLANS

State rail plans are federally mandated [49 Code of Federal Regulations (CFR) Section 266.15] documents to describe the state of the rail system and identify current projects and opportunities for improvements. These plans include long range visions for both freight and passenger service. There have been three rail plans for Texas by the Texas Department of Transportation (TxDOT). The following summarizes the passenger rail element that could be relevant the Dallas-Fort Worth High-Speed Transportation connections study.

3.2.1 2010

Chapter 4 of the 2010 *Texas State Rail Plan* focused on passenger rail systems. The plan noted that Texas does not have a high-speed passenger rail plan but that there was motivation and need to pursue this type of service. The chapter reviewed previous efforts conducted by state and federal governments and private entities in the 1980s and 1990s which included the establishment of a separate state agency (Texas High Speed Rail Authority) to determine whether high-speed rail in Texas was feasible. Though demand appeared to justify high-speed rail passenger services in the state, funding issues and other pressures prevented the project from moving forward; the Texas High Speed Rail Authority was abolished in 1995.

The plan also documented other proposals for high-speed passenger service have been submitted to the FRA or the State of Texas (see Table 1). All proposed routes served cities in the Texas Triangle (Dallas-Fort Worth, Houston, Austin, and San Antonio) and indicated operating revenues would exceed operating expenses.

Table 1. Ridership Estimates for Proposed High-Speed Intercity Passenger Rail Projects

Entity	Ridership Estimates
SNCF 2009	Between Dallas and San Antonio: • 3.3 million passengers/year by 2018 • 12.1 million passengers/year by 2025
Triangle Railroad Holding Company 2009	Within the Texas Triangle system, a total of 89,000 passengers per day by 2023 and over 100,000 after 2023: • Between Dallas and San Antonio, 13,000-55,000 passengers per day • Between Austin and Houston, 11,300-51,000 passengers per day • Between Dallas and Houston, 17,900-81,000 passengers/day (Based on projected population growth)
Federal Railroad Administration 1997	Between San Antonio and Dallas: 3.2-8.1 million passenger trips/year, depending on rail technology with higher levels of ridership corresponding to faster speeds (by 2020)
Texas TGV 1991	For the Texas Triangle between Houston, Austin/San Antonio, and Dallas-Fort Worth, 11.9 million passengers
Fastrak 1991	• For the entire Texas Triangle rail system, 8.46 million trips by 2015 • Between Houston and Dallas-Fort Worth, 4.89 million trips in the year 2015

Source: Table 4-2 from the 2010 Texas State Rail Plan, November 2011

3.2.2 2016

The 2016 State Rail Plan (<https://www.txdot.gov/inside-txdot/forms-publications/publications/final.html>) included two passenger rail related goals:

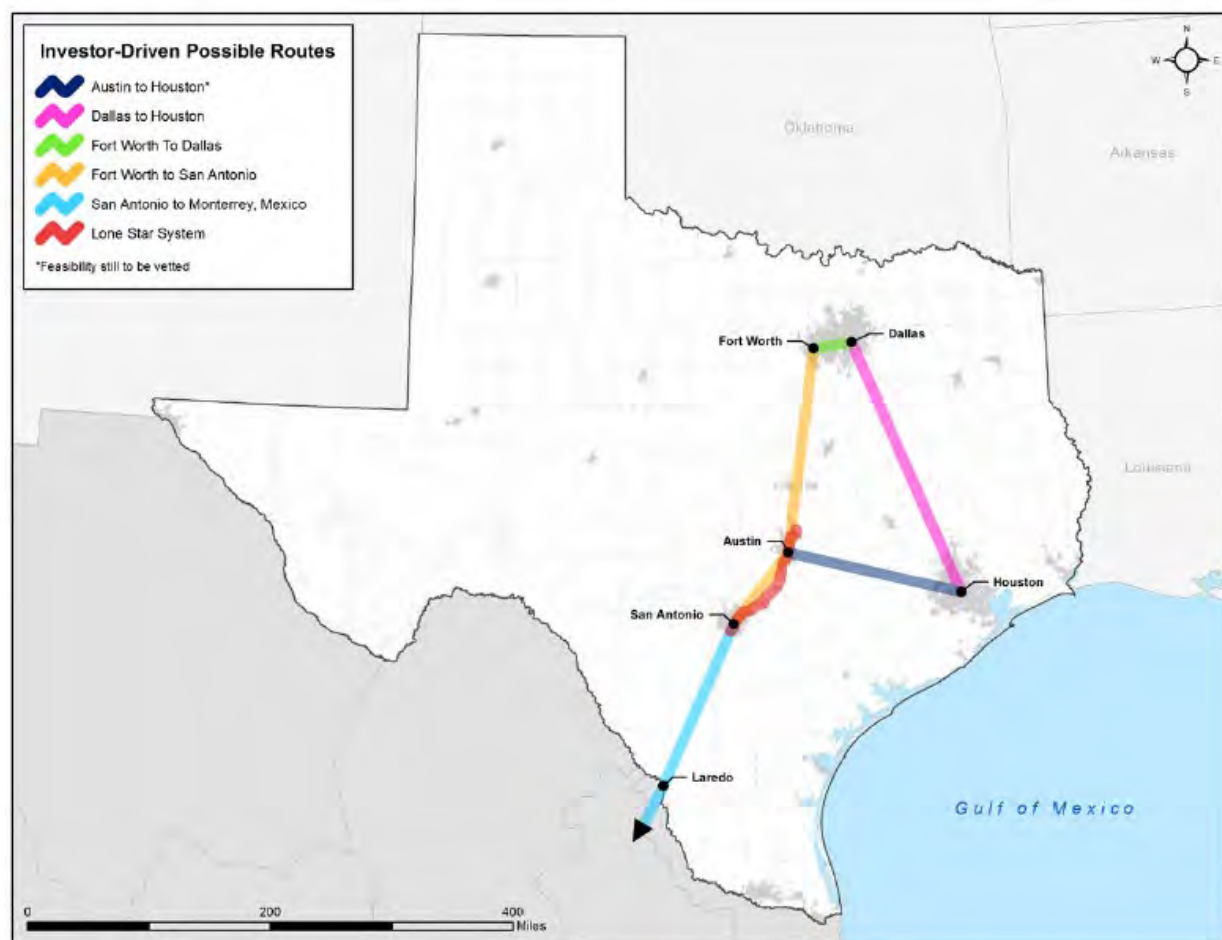
- Mobility and Reliability - Reduce congestion and improving rail system efficiency, capacity, and performance, including rail freight and passenger travel time reliability.
- Multimodal Connectivity - Provide freight and passenger choices by improving the rail system and providing intermodal and multimodal connectivity.

The 2016 plan summarized current and potential intercity passenger rail (both higher and high-speed) services and potential improvements and investments. Current intercity passenger rail was provided by Amtrak and limited both in number of routes, frequencies, and travel time compared to auto and air travel. These deficiencies resulted in reduced ridership, limited revenue growth, higher public subsidies, and lower public benefits. The plan cited improvements/restructuring of services were needed to improve the revenue/cost ratio of the

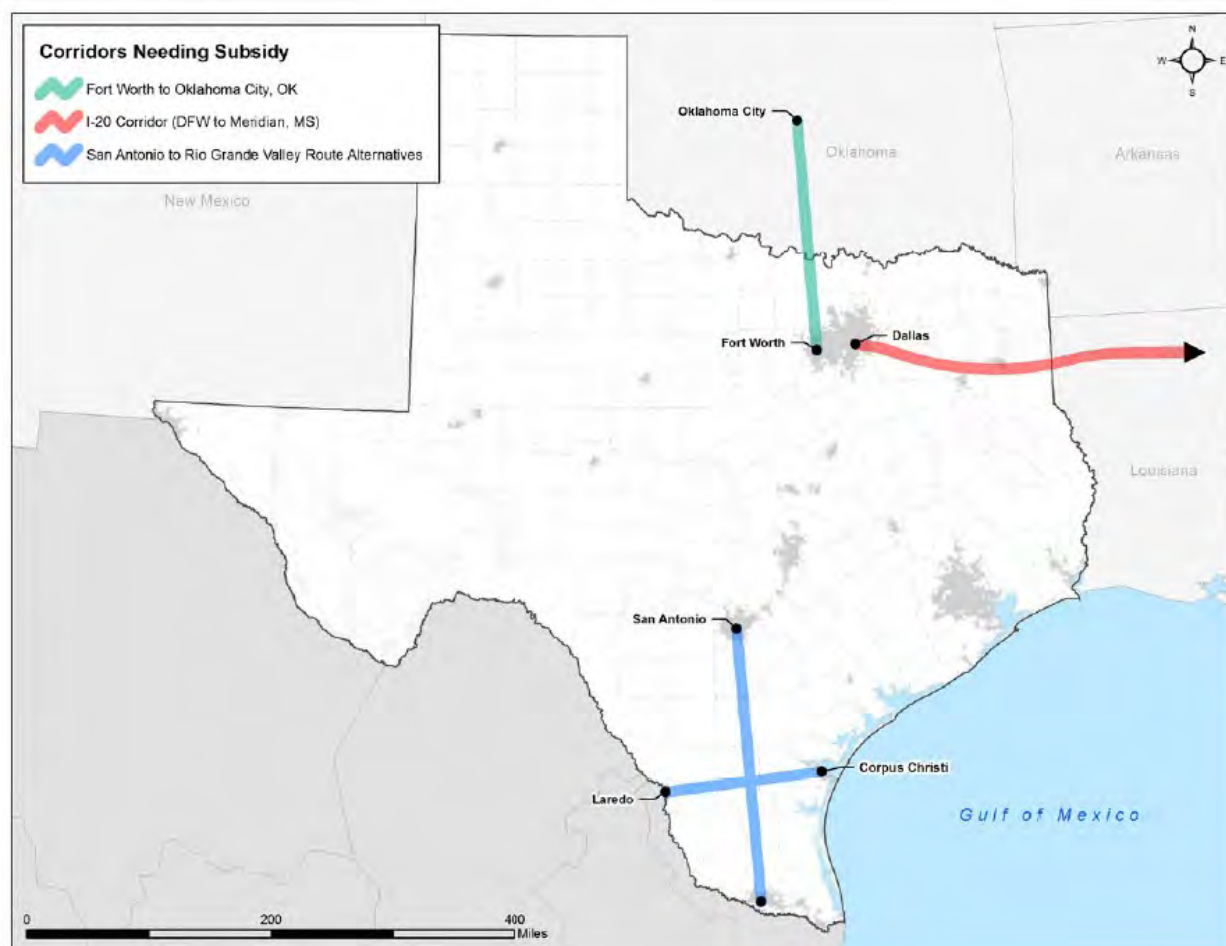
existing service to ensure passenger rail service in Texas continues. The document also discussed future population and economic growth, the emerging Texas Triangle (Dallas-Fort Worth, Houston, San Antonio) megaregion, and trends in development and transportation choices.

The rail plan provided a vision for intercity passenger rail service in Texas and indicated this effort would be primarily investor-driven; the state would facilitate development of these corridors but had no intention of providing subsidy for intercity passenger rail proposals. The Dallas to Fort Worth corridor (see Figure 4) is shown as a potential investor-driven route. Figure 5 depicts the initiatives (Fort Worth to Oklahoma City and Dallas to Meridian) needing subsidies.

Figure 4. 2016 Rail Passenger Vision – Investor-Driven Possible Routes



Source: Exhibit 5-4, 2016 *Texas Rail Plan*, May 2016

Figure 5. 2016 Rail Passenger Vision – Corridors Needing Subsidy


Source: Exhibit 5-5, 2016 Texas Rail Plan, May 2016

3.2.3 2019

The 2019 State Rail Plan (<https://www.txdot.gov/inside-txdot/projects/studies/statewide/texas-rail-plan-2019.html>) is an update to the 2016 plan (see Section 3.2.2 of this technical memorandum) to reflect accomplishments and update information and priorities. The document recognizes NCTCOG planning efforts for the Fort Worth to Laredo and Fort Worth to Dallas corridors.

As part of the plan update, TxDOT held public meetings and conducted an online survey. The online survey included several questions regarding passenger rail; over 3,600 responses were received. Table 2 lists the passenger rail related questions and responses; persons could select multiple answers. In general, respondents were supportive of new or enhanced passenger rail facilities and improved connections.

Table 2. 2019 Texas Rail Plan Passenger Rail Questions and Responses

Question	Answer Choices	Responses
Q2. What could be done in Texas to improve passenger rail access and promote travel mobility and economic development?	New or enhanced passenger rail facilities	74.86%
	New or enhanced multimodal connections	49.30%
	New or enhanced federal, state, local, and public-private partnership funding options	45.20%
	New station locations	61.42%
	Other	10.47%
Q7. What are the most important aspects of a passenger rail service to you?	Travel speed/time	77.77%
	Travel reliability	70.34%
	Amenities and comfort (including technology)	55.10%
	Frequency of service	65.41%
	Other	12.47%
Q8. What should be the goal of passenger rail service in Texas?	Opportunities for intra-state trips that stop in more communities and travel at conventional speeds	52.06%
	Opportunities for intra-state trips with fewer stops and higher speeds	71.88%
	Opportunities for longer trips, interstate	56.20%
	Opportunities for commuting to and from work	51.84%
	Connections to other modes (airports, transit hubs)	56.47%
	Other	6.44%
Q9. How should passenger rail be prioritized in the future to provide more transportation options?	More frequencies on existing routes	41.19%
	Same frequencies but improved amenities/on time performance	30.01%
	More stations on existing routes	40.69%
	New routes, even if frequencies on existing routes must be reduced	43.63%
	New routes, with frequencies on existing routes maintained	61.17%
	Same frequencies but improved station services	21.19%
	More transit connections	41.44%
Q10. What are the most important aspects of a passenger station to you?	Enclosed, climate-controlled waiting room	70.15%
	Restroom/water fountain availability	73.11%
	Staffed ticket office	47.00%
	Checked baggage service/luggage storage	44.72%
	Good transit connections (bus, airport, rail)	74.02%
	Bicycle racks	22.61%
	Food service option	46.36%
	Wi-Fi	65.32%
	Other	8.81%

Source: 2019 Texas Rail Plan, December 2019

TxDOT also received over 340 written comments; 94 percent were related to passenger rail. Seventeen 17 percent of comments (57 comments) supported passenger rail. However, the majority (257 comments) opposed high-speed rail because of residential and business impacts, land acquisition especially family farms; the taking of land by a private entity through eminent domain; decrease in land value; environmental impacts; or stated the inclusion of the high-

speed rail project in the Texas Rail Plan was in violation of Senate Bill 977. These comments seem to be specific to the proposed Dallas to Houston high-speed rail project (see Section 4.6 of this technical memorandum).

3.3 DALLAS-FORT WORTH METROPOLITAN TRANSPORTATION PLANS

NCTCOG serves as the metropolitan planning organization for the Dallas-Fort Worth region. The metropolitan planning area includes 12 counties: Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise. One of the roles of NCTCOG is to develop the federally mandated long-range (20 plus years) transportation plan for the region [49 US Code 5304(l)]. The plan, known as the metropolitan transportation plan (MTP), makes recommendations for all travel modes through a suite of policies, programs, and projects designed to improve regional mobility and increase efficiency, safety, and system capacity. The MTP must be financially constrained based on anticipated transportation funding as it guides the expenditure of federal and state transportation funds based on regional goals. High-speed rail has been included in the following Dallas-Fort Worth MTPs.

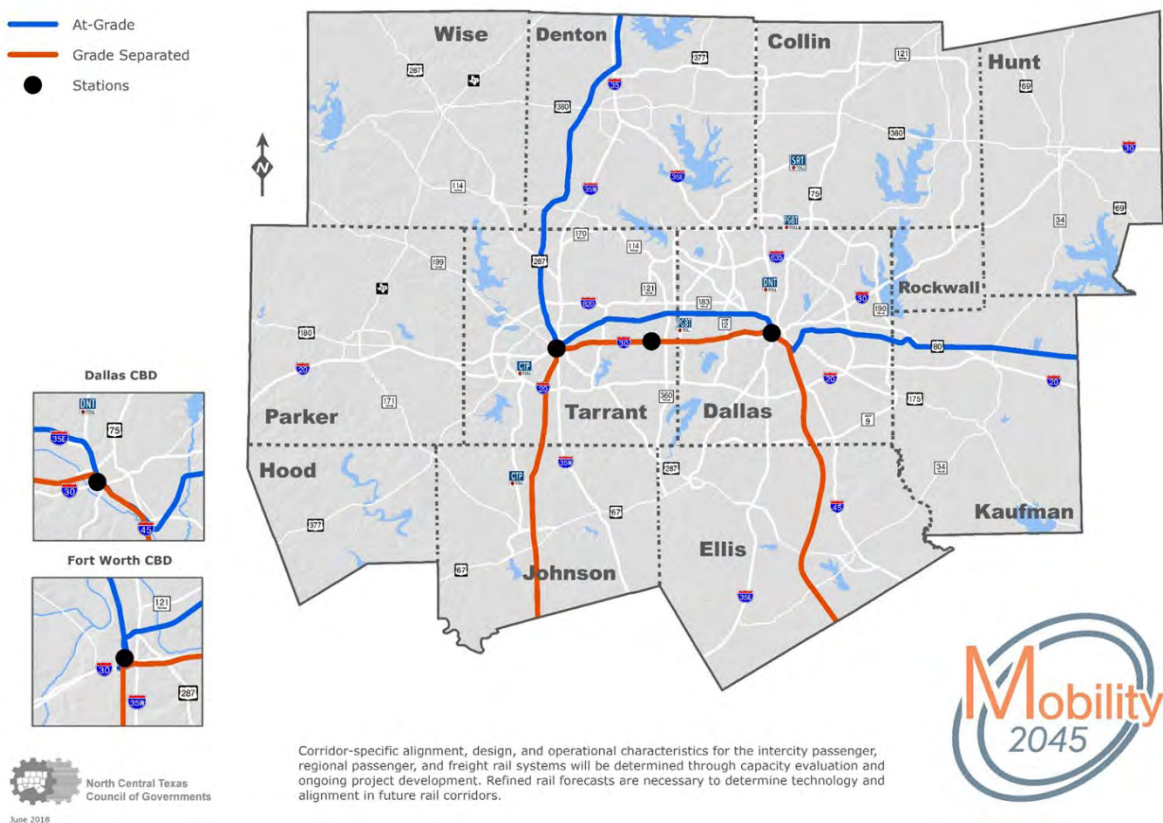
- *Mobility 2030*, adopted January 11, 2007, https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/MTP/M2030_ES.pdf
- *Mobility 2030 – 2009 Amendment*, adopted April 9, 2009, <https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/MTP/M2030-2009Amend-ES.pdf>
- *Mobility 2035*, adopted March 10, 2011, https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/MTP/M2035_ES.pdf
- *Mobility 2035– 2013 Update*, adopted June 13, 2013, <https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/MTP/M2035-2013Update-ES.pdf>
- *Mobility 2035 – 2014 Amendment*, adopted November 13, 2014, <https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/MTP/M2035-2014Amend-ES.pdf>
- *Mobility 2040*, adopted March 10, 2016, <https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/MTP/M2040-ES.pdf>
- *Mobility 2045*, adopted June 14, 2018, <https://www.nctcog.org/trans/plan/mtp/2045>

Mobility 2045: The Metropolitan Transportation Plan for North Central Texas, is the current MTP. Within the North Central Texas region, both at-grade and grade-separated high-speed passenger rail service is recommended from Fort Worth to Dallas. High-speed passenger rail service within North Central Texas is not intended to be a stand-alone service; service within the region will be an integral component of a larger statewide and potential national network. *Mobility 2045* also cites the desire to explore alternative high-speed modes between Dallas to Laredo through Fort Worth such as magnetic levitation.

Four proposed high-speed rail corridors (see Figure 6) are recommended to connect other regions: Oklahoma City to South Texas, Fort Worth to Shreveport, Fort Worth to Dallas, and Dallas to Houston. The Dallas to Fort Worth corridor would link/connect the Oklahoma City to South Texas and Dallas to Houston high-speed rail corridors. The recommended grade-separated high-speed service for the Dallas to Fort Worth corridor shows stations in downtown Fort Worth, Arlington, and downtown Dallas. While *Mobility 2045* identifies potential high-speed

rail lines serving Dallas and Fort Worth, it does not specify exact routes or operating characteristics.

Figure 6. Mobility 2045 High-Speed Rail Recommendations
High-Speed Rail



Source: Exhibit 6.4-11, *Mobility 2045*, June 2018

The MTP supports the development of one seat/one ticket high-speed passenger rail connectivity between Fort Worth, Arlington, Dallas, Houston, and South Texas through the Dallas station. However, the MTP states if regulatory, environmental, financial, or other challenges prohibit the timely development of a one seat/one ticket connection through the Dallas station, the region will support and coordinate with high-speed passenger rail system implementers to develop a cross-platform transfer solution for all rail passengers that is as close to a one seat/one ticket connection as possible.

3.4 LOCAL TRANSIT PLANS

The study area is served by two transit authorities – Dallas Area Rapid Transit (DART) and Trinity Metro. Jointly, these agencies operate the Trinity Railway Express (TRE), a commuter rail line between Dallas and Fort Worth.

The current long-range plan for DART, *2030 Transit System Plan* (<https://www.dart.org/ShareRoot/2030plan/DART2030PlanJan2007.pdf>), was completed in 2006. While DART is in the process of updating this document, the work is focused on a new bus system plan.

The most recent master plan for the Trinity Metro service area was completed in 2015 and made recommendations for the next five years. Trinity Metro is currently working on a new short-range transit planning effort; however, the effort is focused on redesigning the bus network.

Neither the DART or Trinity Metro plans cite specific changes to service or infrastructure improvements for the TRE corridor.

4.0 CORRIDOR STUDIES

Numerous planning and environmental studies related to high-speed and higher-speed passenger service have been conducted in the study area. The following (in order of completion) have been found most relevant to the Dallas-Fort Worth High-Speed Transportation Connections Study.

4.1 TRINITY RAILWAY EXPRESS HIGHER SPEED RAIL SUPPORT

In 2014, DART studied the feasibility of adding an exclusive third track in the TRE corridor to accommodate higher speed rail operations between Dallas and Fort Worth. Two higher-speed concepts were developed - 125 mph maximum speed concept and 110 mph maximum speed concept. Under both scenarios, all 10 existing TRE stations would not be served. It was assumed that higher-speed service would stop at Dallas Union Station, Centreport/DFW Station, and either the Fort Worth Intermodal Transportation Center (ITC) (note the ITC was renamed to the Fort Worth Central Station in 2019) or Texas & Pacific Station (T&P Station). To achieve 125 mph, all at-grade crossings would have to be replaced with grade separations.

The report discussed the existing conditions along the TRE, design constraints, design concepts, costs, and operational considerations. Proposed concept alignments were developed to represent a potential location within the existing corridor. In general, the 125 mph concept would require more aerial structures, grade-separations, and right-of-way while the 110 mph concept had more at-grade track and street crossing improvements. The estimated travel time ranged from 22 to 24 minutes. The implementation costs (in 2014 dollars) were estimated at \$1.2 billion for the 125 mph concept and \$990 million for the 110 mph concept.

4.2 TEXAS-OKLAHOMA PASSENGER RAIL STUDY

The goal of the Texas-Oklahoma Passenger Rail Study (TOPRS) was to establish a long-term strategy for passenger rail service along an 850-mile corridor (from Oklahoma City, Oklahoma to south Texas) that ran north-south and roughly paralleled Interstate Highway 35 (I-35). The purpose of the study was to evaluate alternatives to provide higher speed passenger rail service to meet future intercity travel demand and to improve rail facilities, reduce journey times, and improve connections with other public transit services.

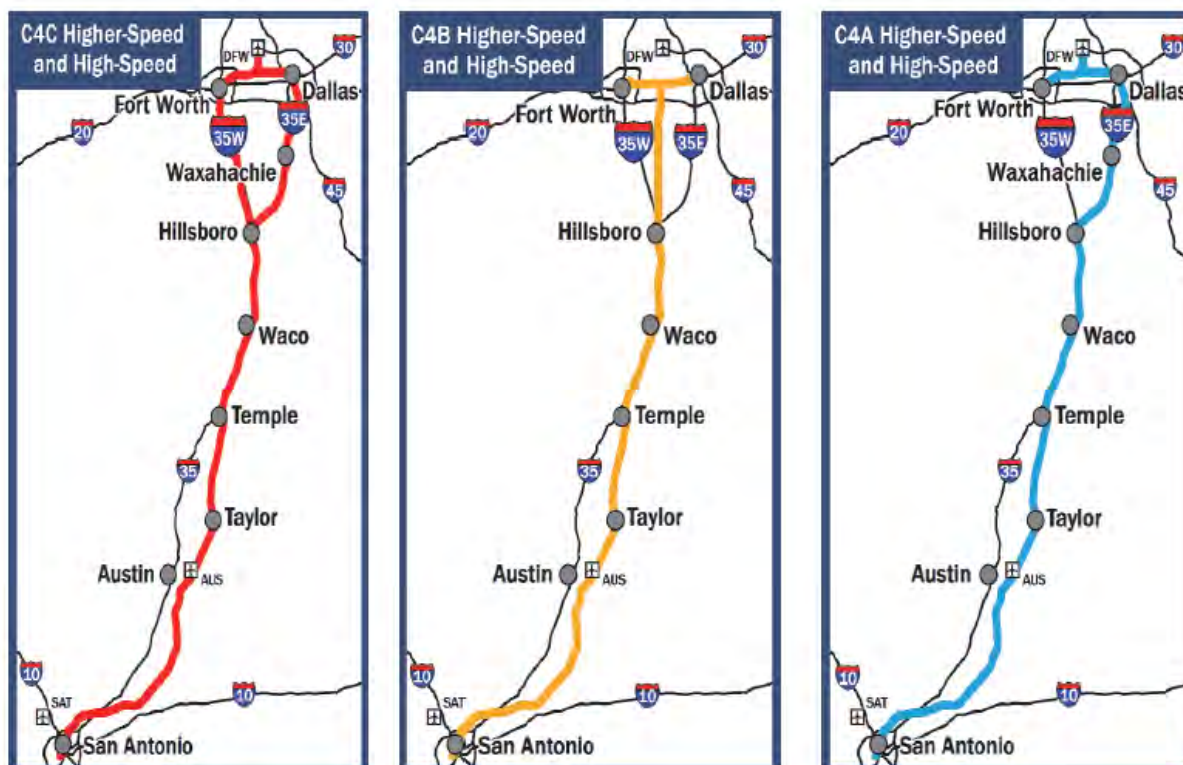
The FRA served as the lead federal agency and TxDOT was the lead state agency in coordination with Oklahoma DOT. The effort included the preparation of a service development plan and accompanying Tier 1 or service-level Environmental Impact Statement (EIS) to guide further development and capital investment in passenger rail improvements (<https://cdxnodengn.epa.gov/cdx-enepa-ll/public/action/eis/details?eisId=241034>). The Final EIS and Record of Decision was approved in November 2017.

Preliminary alignments were developed at a low level of detail to avoid significant physical and environmental constraints and to represent potential corridor locations; precise locations of track were not identified. The Final EIS/Record of Decision does not grant approval for construction; the document identified alternatives, by geographic sections along the corridor, to be carried forward in subsequent project-level National Environmental Policy Act (Tier 2) evaluations to analyze project-specific designs. The Tier 1 EIS recommended the type of passenger rail service within the overall length of the corridor including:

- Between Oklahoma City and Fort Worth – TOPRS proposed traditional intercity passenger rail service (speeds of 90 mph or lower) and increasing service frequencies to between three and six daily round trips with two or three of the round trips operating as express (limited stops) trains. Per the Draft EIS, Alternative N4A (conventional rail) would require approximately \$1.8 billion (in 2013 dollars) of infrastructure improvements to implement the recommended service. The study estimated the service would attract 700,000 rail passengers per year by 2035.
- Between Fort Worth and Laredo and the Rio Grande Valley - Higher speed rail service [speeds of 125+ miles per hour (mph) or higher] was recommended. TOPRS identified three possible alignment options between Dallas-Fort Worth and Hillsboro. The study recommended operating 12 to 20 round trips per day, with a mix of express (six stops) and local (eight to nine stops) service. Per the Draft EIS, right-of-way and construction costs would total between \$5.4 and \$7.1 billion (in 2013 dollars) to implement the recommended service alternative. Depending on the alignment option, the study estimated high-speed rail would attract five to eight million riders per year by 2035; this would represent approximately 12 to 20 percent of all passenger travel in the corridor (air, auto, bus, and rail).

This effort also examined service between Dallas to Fort Worth, connecting to the proposed TOPRS project. Three potential existing transportation corridors for implementing improved passenger service were identified (see Figure 7): Union Pacific Railroad, Interstate Highway 30 (I-30), and TRE. The Union Pacific corridor was dropped from consideration after Union Pacific indicated it would not consider adding passenger trains in its corridor, potential serious environmental impacts were identified, and the need for significant property acquisition adjacent to the existing railroad was considered. The analysis performed in TOPRS became the basis for the Dallas-Fort Worth Core Express Service Alternatives Analysis (see Section 4.3 of the technical memorandum).

Figure 7. TOPRS Higher Speed and High-Speed Alternatives, Central Section



Source: TOPRS Final EIS, June 2017

4.3 DALLAS-FORT WORTH CORE EXPRESS SERVICE

In 2014, TxDOT, in coordination with the FRA, began the process of preparing an environmental study to examine the feasibility of a faster, limited-stop passenger rail service to connect Dallas and Fort Worth to possible future high-speed rail lines being planned. The project was known as the Dallas-Fort Worth Core Express Service or DFWCES. A Notice of Intent to prepare an EIS was published in the *Federal Register* on September 5, 2014.

The DFWCES studied the two corridors between Dallas and Fort Worth (I-30, TRE) as identified during TOPRS (see Section 4.2). Based on input from NCTCOG, a third corridor combining alignment portions of I-30 from Fort Worth to SH 360 and the TRE from SH 360 to Dallas was added for consideration in early 2015. Figure 8 shows the corridors. Three operating speeds were considered for each of the corridors: 90 mph, 125 mph, and 220 mph.

Figure 8. DFWCES Corridors



Source: Figure 3-2, *Dallas-Fort Worth Core Express Service Alternative Analysis Final Report*, 2017

The I-30 corridor best met the draft purpose and need for the study; however, the corridor was determined to be fatally flawed and was eliminated. The alternative analysis determined the I-30 corridor was not consistent with the active planning and construction initiatives of I-30 between SH 360 and downtown Dallas (e.g., I-30 managed lanes, SH 360 interchange). Additionally, the complexity of constructing high-speed passenger rail service within the corridor and impacts on multi-level interchanges in Dallas County [I-30/President George Bush Turnpike (PGBT) and I-30/I-35E] along I-30 would significantly increase the construction cost compared to the other corridor alternatives.

The alternatives analysis recommended two corridors be carried forward for detailed analysis in a future EIS. Both recommended corridors could support train operations at 90 mph and 125 mph, but neither corridor was considered viable for 220 mph service because of the higher costs, corridor lengths, physical constraints, and safety requirements associated with operations at the higher speed.

- TRE Corridor
 - o Capital cost estimates of \$3.5 billion to \$5.7 billion (2017 dollars) depending on track speed (90 mph or 125 mph) and propulsion technology
 - o Better financial viability because of its lower estimated capital cost

- I-30/SH 360/TRE (Hybrid) Corridor
 - o Capital cost estimates of \$5.3 billion to \$6.7 billion (2017 dollars)
 - o Higher projected ridership, by serving Arlington and connecting with other TOPRS services
 - o Lower environmental impacts

In late 2016, the DFWCES EIS effort was placed on hold due to expiration of project funding. The FRA concluded the project in 2017 with the production of an alternatives analysis report (<https://www.txdot.gov/inside-txdot/projects/studies/statewide/dfw-core-express.html>). In early 2020, the FRA rescinded the Notice of Intent to prepare an EIS.

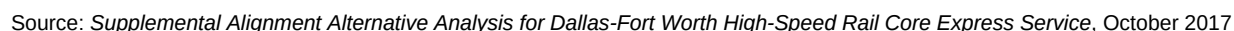
4.4 SUPPLEMENTAL ALIGNMENT ALTERNATIVE ANALYSIS FOR DALLAS-FORT WORTH HIGH-SPEED RAIL CORE EXPRESS SERVICE

The purpose of this supplemental alternative alignment analysis was to reexamine alignment alternatives for high-speed rail between Dallas and Fort Worth. The intent was to determine if there were other reasonable alignments that should be reconsidered as part of the DFWCES Draft EIS (see Section 4.3 of this technical memorandum). This study also supported three high-speed rail station planning studies (see Section 5.0 of this technical memorandum).

The study found that although high-speed rail technology has the capability of speeds over 200 mph, it applies to systems that have long reaches of straight, level track and a relatively flat vertical profile. The Dallas to Fort Worth segment is different because the distance between the potential stations (Dallas to Arlington and Arlington to Fort Worth) is approximately 15 miles and the horizontal and vertical alignments would not meet design requirements for 200 mph operations. As a result, the speeds will most likely stay below 125 mph; therefore, the main goal was to provide the alignment that has the least number of curves to promote a faster service.

Eighteen alignments were identified and located in a broad band between Fort Worth and Dallas: the TRE corridor to the north and the IH 20 corridor to the south. The majority of the alignments follow existing transportation corridors, had a lower cost, and were more favorable than establishing a new alignment through areas where there are no roadways or railroads. The study (completed in October 2017) recommended six of the 18 alignment alternatives for further study (see Figure 9).

3/17/2017

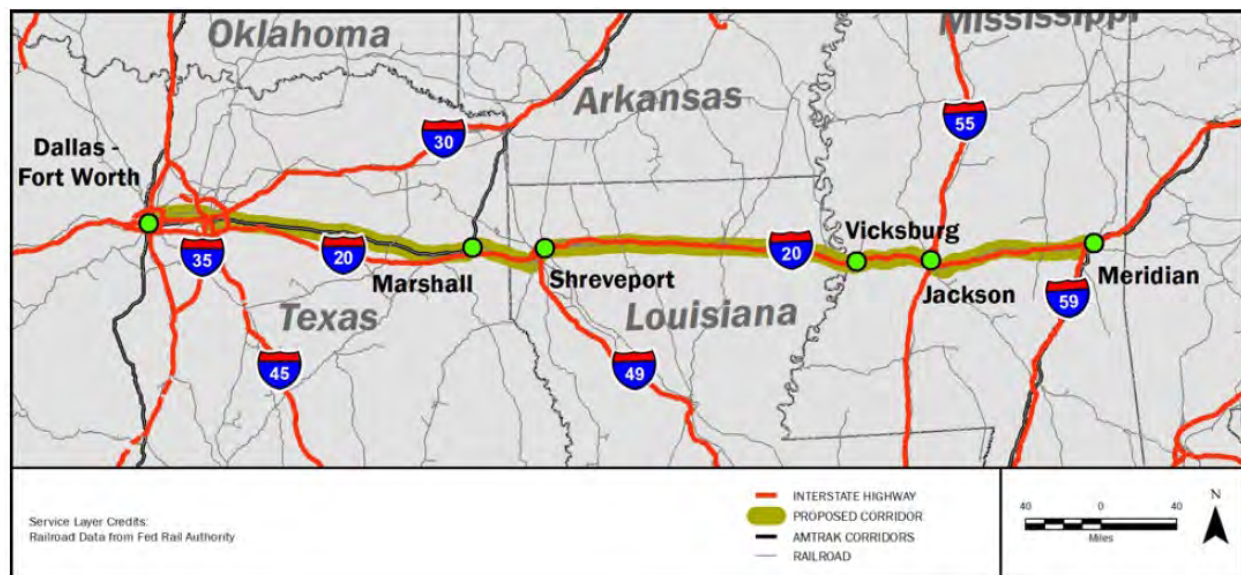


- Alignments following existing transportation corridors were perceived as more favorable because the adjacent areas typically have long-established commercial and industrial areas immediately adjacent to the corridor.
- The most efficient alignments had the shortest distance and fewest curves.
- The alignments following the West Fork of the Trinity River would impact environmentally sensitive areas.
- The major highway corridors between Fort Worth and Dallas include multilevel interchanges at major crossroads. Although the high-speed rail tracks would be elevated on structure (approximately 125 feet above natural ground in some cases), there is a limit as to how high the structure can be constructed. For example, the I-30 corridor included multilevel interchanges at I-820, SH 360, PGBT, Loop 12, and I-35E/I-30. Alignments along I-30 were adjusted to avoid the highest ramps and reduce the height of the high-speed rail guideway.
- The alignment alternatives paralleling Union Pacific Railroad had many advantages, including existing well-established commercial and industrial corridors and major highways passing under the tracks rather than over, which significantly reduced the height of the high-speed rail structure. However, Union Pacific management expressed opposition to adding new intercity passenger trains to the corridor; any use of the Union Pacific tracks or right-of-way would not be acceptable. Any high-speed rail alignment would need to be on its own dedicated tracks and right-of-way. A new high-speed rail corridor could be adjacent to the existing Union Pacific railroad right-of-way but the Union Pacific may still have objections.

4.5 DALLAS/FORT WORTH TO MERIDIAN PASSENGER RAIL STUDY

The purpose of the Dallas/Fort Worth to Meridian Passenger Rail Study was to identify infrastructure requirements to establish reliable passenger rail service between Fort Worth, Texas and Meridian, Mississippi (see Figure 10), a distance of 535 miles. The project limit started at the ITC (currently known as Fort Worth Central Station) in Fort Worth, Texas.

Figure 10. Dallas/Fort Worth to Meridian Passenger Rail Study Project Corridor



Source: Figure 1-1, *Dallas/Fort Worth to Meridian Passenger Rail Study*, October 2017

Numerous cities and planning organizations have had a long-time goal of creating reliable passenger rail service between the Dallas/Fort Worth region and the East Coast along the I-20 corridor. This service could improve passenger rail travel options by providing direct service from Dallas-Fort Worth to other metropolitan regions such as Atlanta, Georgia as well as northeast destinations such as Washington, DC and New York. Additionally, the service could further strengthen the Dallas-Fort Worth region as a future passenger rail hub where travelers would board or connect with trains serving routes throughout the south and southwest.

TxDOT completed the study in October 2017. The study identified the infrastructure requirements, estimated capital costs, and projected cost benefits to reliably operate 79-mph intercity passenger rail service in the corridor using existing rail lines. Between Fort Worth and Dallas, the use of the TRE corridor was recommended.

4.6 DALLAS TO HOUSTON HIGH-SPEED RAIL

FRA initiated the EIS process for a proposal by a private enterprise, the Texas Central Railroad (TCRR), to construct and operate a private, for profit, high-speed passenger rail system connecting Dallas and Houston. TCRR proposes to build a dedicated alignment and stations and to use high-speed rail technology (Japanese N700-1 Tokaido Shinkansen) along the approximately 240-mile long corridor between the two cities. The draft EIS was published in

December 2018. The Final EIS was published in May 2020; the Record of Decision (ROD) was published September 2020.

As part of the project, TCRR proposes to build a terminal station in Dallas just south of I-30 (south of downtown Dallas), between South Riverfront Boulevard and the Union Pacific Railroad right-of-way west of Lamar Street (see Figure 11). The Final EIS notes provisions would need to be made for any future expansion of the high-speed rail system if service were to extend beyond the Dallas Terminal Station.

Figure 11. Proposed Dallas High-Speed Rail Terminal Location



Source: Figure 2-21, *Dallas to Houston High-Speed Rail Final EIS*, May 2020

TCRR intends to operate the railway 18 hours per day, seven days per week. As shown in Table 3, three levels of service have been identified: an initial service level proposed for opening day; a projected final service level; and a peak service level, which represents the ultimate configuration of the system. The transition of service levels from initial to final and to peak would depend upon demand. Train service will likely begin operations at 186 mph, which will allow for a total trip time of less than 90 minutes between Houston and Dallas. Subject to regulatory approval and market demands, maximum train speeds could be increased up to 205 mph.

Table 3. Propose Operations for Dallas to Houston High-Speed Rail

Level of Service	Operation Assumptions
Initial Service	- Two terminal stations: One each in Dallas and Houston - A Brazos Valley Intermediate Station (in Grimes County) would serve as a midpoint station; some trainsets may run an express (non-stop) service between Dallas and Houston. - Two trainsets per hour during peak and off-peak hours - Trainset service every 30 minutes between terminal stations in Dallas and Houston - Hours of operation from 5:30 AM to 11:30 PM. Daily maintenance and fleet movement would occur when the HSR line would not be in operation - Anticipated service of 7 days a week, 365 days a year - Turn-around time at each terminus station of 30 to 40 minutes. - A total of 15 trainsets, with a minimum of 8 trainsets in operation
Final Service Level	In addition to the operational assumptions for initial service level, the final service level would also include: - Two trainsets per hour during off-peak - During AM and PM peak service hours, one additional trainset (three total) would be operating - Trainset service could occur as often as every 20 minutes between terminal stations in Dallas and Houston - A total of 20 trainsets, with a minimum of 13 trainsets in operation
Peak Level	Six trainsets per hour during peak hours and four trainsets per hour during off peak - During AM and PM peak service hours, trainset service as often as every 10 minutes between terminal stations in Dallas and Houston - A total of 30 trainsets, with a minimum of 24 trainsets in operation

Source: *Dallas to Houston High-Speed Rail Final EIS*, May 2020

The civil infrastructure costs for the project around \$20 billion (2020 dollars), which includes the construction of the lines, tracks, viaducts, berms, maintenance facilities, power substations, and three passenger stations. Service could begin as early as 2026.

4.7 FORT WORTH TO LAREDO HIGH-SPEED TRANSPORTATION STUDY

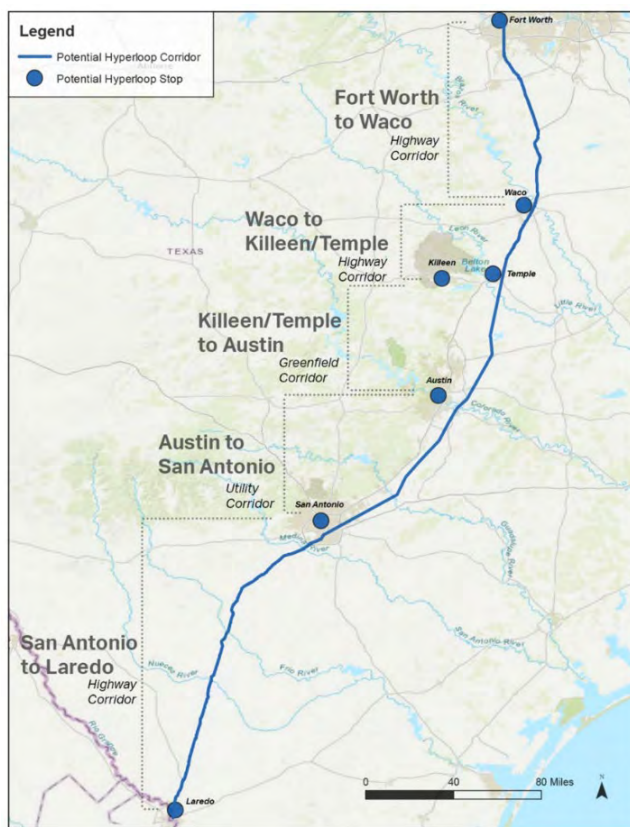
The purpose of the Fort Worth to Laredo High-Speed Transportation Study was to study high-speed transportation options to connect six metropolitan areas in Texas: Fort Worth, Waco, Killeen/Temple, Austin, San Antonio, and Laredo. The analysis was led by the NCTCOG in partnership with the Waco Metropolitan Planning Organization (MPO), Killeen-Temple MPO, Capital Area MPO, Alamo Area MPO, and the Laredo MPO. The goal of the study was to

develop potential alternatives (both corridors and technologies) and stations locations to include in a future Tier 2 EIS document(s).

This study built on the Record of Decision and Tier 1 TOPRS Final Environmental Impact Statement (see Section 4.2 of this technical memorandum). While the TOPRS effort did evaluate conventional, higher-speed, and high-speed passenger train alignments, the study focused on service and operations and broadly addressed corridor issues and alternatives, not considering emerging modes or technologies. Generally, the alignment options were along the I-35 corridor. Technologies reviewed in this study included: guaranteed transit, conventional passenger rail, high-speed and higher-speed rail, magnetic levitation (maglev), and hyperloop (next-generation maglev).

The study (<https://www.nctcog.org/trans/plan/transit/transit-planning/high-speed-rail>) concluded in April 2020. The highest-ranking technology/corridor combination utilized hyperloop along a highway/greenfield/utility corridor (see Figure 12). While hyperloop was the highest-ranking technology, the study findings suggested that a corridor utilizing hyperloop, maglev, or high-speed rail is feasible and a viable solution for transportation issues throughout the State of Texas and particularly in the rapidly growing I-35 corridor.

Figure 12. Highest Ranking Hyperloop Alternative



Source: Figure 6, Fort Worth to Laredo High-Speed Transportation Study, *Alternative Analysis and Findings Memorandum*, April 2020

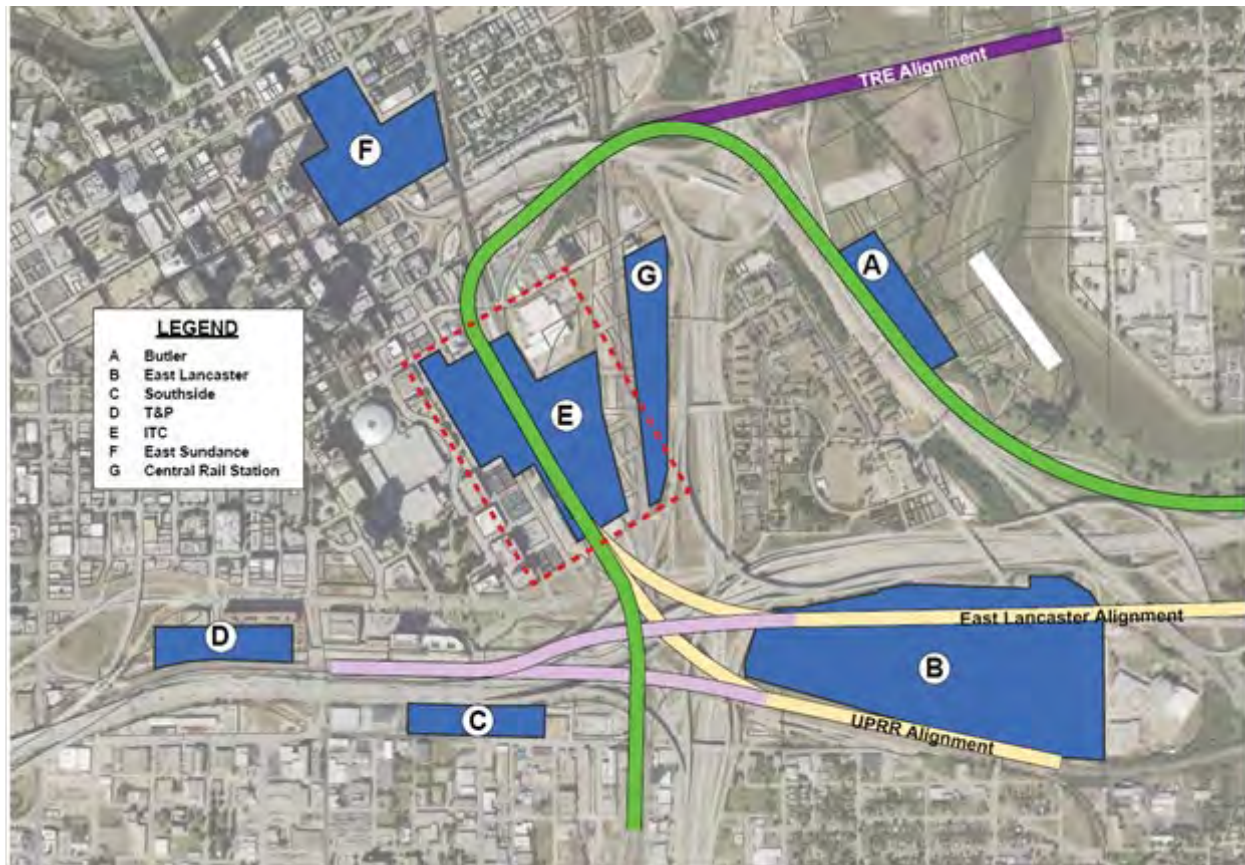
5.0 STATION LOCATION STUDIES

To support the DFWCES study (see Section 4.3 of this technical memorandum), NCTCOG analyzed feasible station locations in Fort Worth, Arlington, and Dallas to be included in the EIS. The Arlington and Fort Worth studies were complete in 2017 and the Dallas study was completed in 2019. The following summarizes the findings.

5.1 FORT WORTH

The Fort Worth station study reviewed possible high-speed rail routing scenarios that could affect the location of a high-speed station in Fort Worth. The review considered alignments studied in TOPRS (see Section 4.2) and the DFWCES (see Section 4.3). Seven station options were considered (see Figure 13): Butler, East Lancaster, Southside, T&P Station, ITC, East Sundance, and Central Rail Station.

Figure 13. Potential High-Speed Station Locations in Fort Worth



Source: Fort Worth Station Area Options Map, *Fort Worth High-Speed Rail Station Area Planning Study*, September 2017

The station analysis considered rail service scenarios along with potential impacts and opportunities to existing infrastructure, land use, and compatibility with existing transportation networks. Additionally, station programming, platform orientation, and general needs were evaluated.

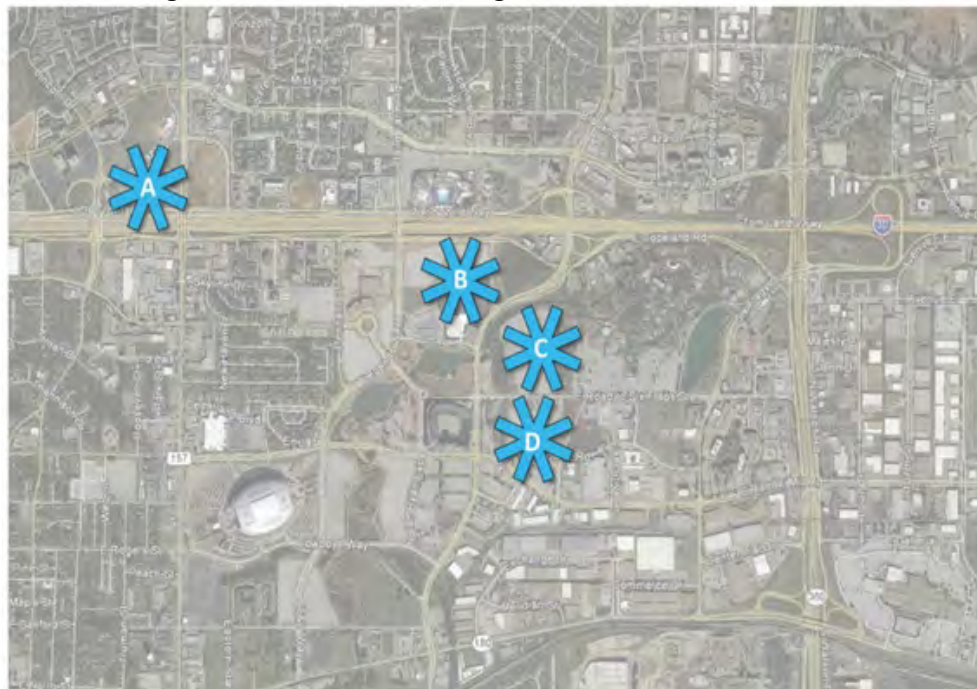
The recommended station alternative was the ITC (since renamed the Fort Worth Central Station) in downtown Fort Worth (Location E on Figure 13). This location was determined the most compatible with the potential high-speed rail alignment into downtown and scored well in additional factors considered. The recommended ITC station location is adjacent to existing rail infrastructure served by regional, commuter, and freight rail; the ITC also serves as the main bus transfer center in downtown Fort Worth.

The study (<https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/Transit/FWHSR.pdf>) concluded the surrounding land uses were generally underutilized and provided opportunity for redevelopment. Further evaluation would be necessary to fully assess parking and traffic impacts; however, there are numerous access and egress routes to the recommended station option from I-30, I-35W, US 280, US 287, SH 121, SH 199, and local downtown streets. Additionally, an economic opportunity assessment was completed for the recommended station location to evaluate and gauge the opportunities associated with the implementation of high-speed passenger rail service.

5.2 ARLINGTON

The Arlington High-Speed Rail Station Area Planning Study (<https://www.nctcog.org/nctcog/media/Transportation/DocsMaps/Plan/Transit/ArlingtonHSR.pdf>) was initiated to provide potential station locations for inclusion and analysis in the DFWCES Draft EIS (see Section 4.3 of this technical memorandum) and to assist Arlington in creating a second urban center. This evaluated four potential station areas (see Figure 14) near/within the Arlington Entertainment District.

Figure 14. Potential Arlington Station Site Locations



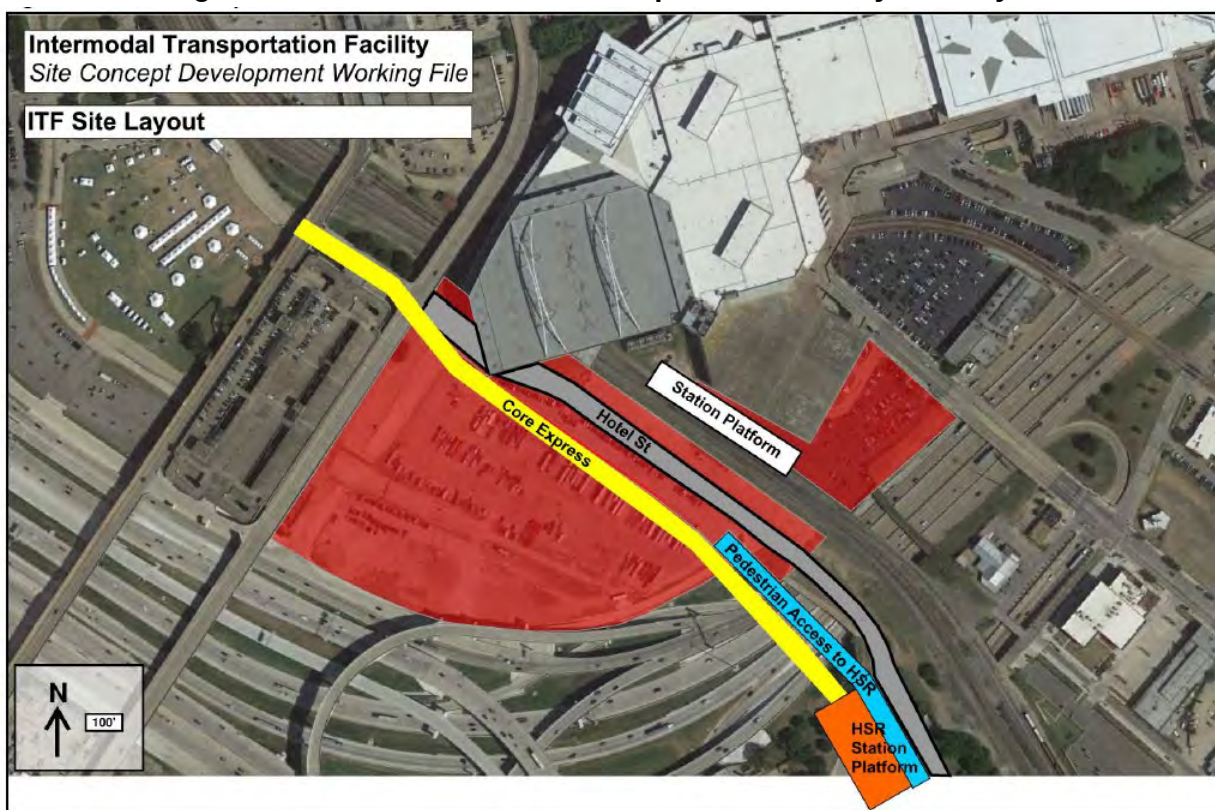
Source: Map 7, *Arlington High-Speed Rail Station Area Planning Study*, July 2017

The sites were evaluated based on: complementary land uses, private sector participation, ease of acquisition, and compatibility with the alignment. The four sites had similar scoring. In June 2017, the results were presented to the City of Arlington City Council. The council voted to recommend sites B, C, and D with a preference for B. Station Site B provides connectivity with the Arlington Convention Center and potential transit-oriented development.

5.3 DALLAS

As part of the Dallas to Houston high-speed rail project, a terminal station is proposed just south of downtown Dallas (see Section 4.6 and Figure 11 in this technical memorandum). Proximate to this terminal station, the City of Dallas has proposed a Dallas Intermodal Transportation Facility, located north of I-30 (see Figure 15). This facility would provide opportunity for dense, urban, multi-use development immediately accessible to the Convention Center, the high-speed rail station, regional transit patrons, and the Dallas Central Business District.

Figure 15. Dallas Intermodal Transportation Facility Site Layout



Source: Figure 5.1, *Dallas Intermodal Transportation Facility Fatal Flaw Analysis-Final Report*, October 2019

The *Dallas Intermodal Transportation Facility Fatal Flaw Analysis-Final Report* (<https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Plan/Transit/People%20Mover/Dallas-Intermodal-Transportation-Facility-Fata-Flaw-Analysis.pdf>) evaluated potential fatal flaws and challenges associated with transportation connectivity and economic development at the site. The analysis included review of rail feasibility to the site, site concept, connectivity, federal and

environmental processes for site development, preliminary costs, steps for implementation, and critical project stakeholders.

The study found no fatal flaws that would prevent the further development and implementation of the Dallas Intermodal Transportation Facility concept. The report stated the facility would provide multimodal connectivity to high-speed rail service to Houston and to future high-speed service to Fort Worth while also greatly increasing the site development potential for the convention center and adjacent properties.

Appendix C

Detailed Level 1 Analysis Results

Evaluate adherence to Purpose Need for each alternative

Level 1 Criteria (Cont.)

Purpose Need

Evaluate adherence to Purpose Need for each alternative

[illegible]

Level 1 Criteria (Cont.)

Purpose Need

Evaluate adherence to Purpose Need for each alternative

[illegible]

Purpose Need
Evaluate adherence to Purpose Need for each alternative

Average ≥ 3.0 = Pass

Level 1 Criteria

Purpose Need

Evaluate adherence to Purpose Need for each alternative

				All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1																	
				I-30 Alignments																	
Criteria	Description	Measurement	Thresholds	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.	Number of Locations	High ≤ 3 Medium = 4 - 5 Low ≥ 6	2	2	2	2	-1	2	2	-1	-1	2	2	-1	2	2	2	-1	2
	Convenient	Ease of access to other existing and planned transportation options (roadways, trails, existing Park & Rides, etc.)	Yes/No	High = Yes Low = No	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Connect to existing regional/light rail in DFW	Could the alternative provide connections to existing light, regional, and commuter rail	Yes/No	High = Yes Low = No	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	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)?	Number of Locations	High ≥ 4 Medium = 2-3 Low ≤ 1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alignment Score				3	3	3	3	2.25	3	3	2.25	2.25	3	3	2.25	3	3	3	2.25	3	
Average >/= 3.0 = Pass				1	2	3	4		5	6			7	8		9	10	11		12	

Level 1 Criteria (Cont.)

Purpose Need

Evaluate adherence to Purpose Need for each alternative

				SH 180 Alignments												SH 303 Alignments		Assumptions		
Criteria	Description	Measurement	Thresholds	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.	Number of Locations	High ≤ 3 Medium = 4 - 5 Low ≥ 6	4	4	2	2	-1	2	4	4	2	2	-1	2	4	4	4	Does not include buildings or other similar structures.
	Convenient	Ease of access to other existing and planned transportation options (roadways, trails, existing Park & Rides, etc.)	Yes/No	High = Yes Low = No	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	Connect to existing regional/light rail in DFW	Could the alternative provide connections to existing light, regional, and commuter rail	Yes/No	High = Yes Low = No	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	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)?	Number of Locations	High ≥ 4 Medium = 2-3 Low ≤ 1	2	2	2	2	4	2	2	2	2	2	2	2	-1	-1		
Alignment Score				3.5	3.5	3	3	2.75	3	3.5	3.5	3	3	2.25	3	3.5	2.75	2.75		
Average >/= 3.0 = Pass				13	14	15	16		17	18	19	20	21		22	23				

Level 1 Criteria

Purpose & Need

Evaluate adherence to Purpose & Need for each alternative

All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1								
Criteria	Description	Measurement	Thresholds		Higher-Speed Rail	High-Speed Rail	Maglev	Hyperloop
Purpose & Need Criteria	Safe	Have design and safety guidelines been established (Foreign or Domestic)?	Yes/No	High = Yes, Domestic Medium = Yes, Foreign Only Low = Not yet	4	2	2	-1
	Reliable	Can the alternative mode perform reliably under all most routinely occurring North Texas weather conditions (yes/no)?	Yes/No	High = Yes Low = No	4	4	4	4
		Can the alternative mode perform reliably under all traffic conditions (rail or roadway) on this alignment (yes/no)?	Yes/No	High = Yes Low = No	4	4	4	4
	Convenient	Passenger Experience (comfort with technology paradigm)	Mode Familiarity	High = Mode format and service delivery familiar to passengers Low = Mode format and service delivery unfamiliar to passengers	4	4	4	-1
		Technology Convenience	Expected Wait Times	High = Industry Standard wait times ≤ 20 min Low = Industry Standard wait times > 20 min	-1	4	4	4
	Linkages to other high performance systems in Texas	Ease of transfer to Dallas-Houston HSR	Relative Location	High = One-seat ride possible Med = cross platform or short transfer (2 min walk or less) Low = long transfer (greater than 2 min walk)	2	4	2	2
		Ease of transfer to FW-Laredo System	Relative Location	High = One-seat ride possible Med = cross platform or short transfer (2 min walk or less) Low = long transfer (greater than 2 min walk)	2	2	2	2
		Long Distance Capability/Expandability	Standard Travel Distance	High = Industry Standard ≥ 100 mile trips Low = Industry Standard < 100 mile trips	4	4	4	4
	Mode Score				2.9	3.5	3.3	2.3

Average >/= 2.0 = Pass

Appendix D

Detailed Level 2 Analysis Results

Level 2 Criteria
Fatal Flaw and Ranking
Evaluate alternatives for fatal flaws and rank remaining alternatives

All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1				I-30 Alignments												SH 180 Alignments												Responsible Party	Assumptions
Criteria	Description	Measurement	Thresholds	12	13	14	15	17	18	21	22	24	25	26	28	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)	Percentage of Route Length High < 40% of route Medium = 40%-44% of route Low ≥ 45% of route	42%	38%	38%	37%	35%	36%	41%	40%	45%	40%	37%	42%	46%	43%	43%	39%	48%	44%	43%	43%	41%	47%	49%	Does not include buildings or other similar structures.		
	Potential Major Commercial/Industrial/ warehouse impacts	Number of potential impacts to major commercial, industrial, and warehouse facilities	Number of Locations High = 0-2 Medium = 3-6 Low = 7+ *Large facility impact pushes route to low (aligns 21 and 29)	4	1	1	2	2	5	5	6	9	4	6	9	4	5	0	1	5	0	0	0	1	5	1			
	Potenatial wetland, water body, and floodplain impacts	% length adjacent to wetlands, water bodies, and floodplains; 500 feet (250 feet on each side of centerline)	Percentage of Route Length High ≤ 15% of route Medium = 16%-30% of route Low ≥ 31% of route	32%	33%	33%	33%	33%	32%	22%	22%	21%	21%	13%	20%	33%	32%	41%	27%	26%	38%	37%	26%	26%	24%	31%			
	Potential parks impacts	% length adjacent to parks and designated open spaces; 500 feet (250 feet on each side of centerline)	Percentage of Route Length High < 10% of route Medium = 10-19% of route Low ≥ 20% of route	14%	14%	14%	13%	13%	13%	15%	15%	14%	15%	14%	13%	22%	22%	6%	5%	4%	14%	14%	6%	5%	5%	16%			
Potential community impacts	Potential community facility impacts	Number of Community facilities within 500 feet (250 feet on each side of centerline)	Number of Locations High ≤ 30 Medium = 31-40 Low ≥ 41	28	27	27	27	27	28	37	36	38	35	35	37	39	38	52	52	54	55	49	46	46	48	52			
	Potential Community Cohesion Impacts	Number of neighborhoods with potential community cohesion impacts	Number of Locations High = 0 Medium = 1-5 Low = 6+	0	0	2	0	2	0	5	5	5	4	4	4	8	7	1	1	1	4	3	0	0	0	3			
	Potential environmental justice (EJ) impacts	Total Environmental Justice Index (EJI) Above-Average Block Groups; 500 feet (250 feet on each side of centerline)	Total Number of Block Groups High = 50-61 Medium = 62-79 Low ≥ 80	52	52	53	54	55	54	56	57	60	59	60	63	76	76	67	68	70	86	87	68	69	72	91			

Level 2 Criteria
Fatal Flaw and Ranking
Evaluate alternatives for fatal flaws and rank remaining alternatives

All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1				I-30 Alignments											SH 180 Alignments											
Criteria	Description	Measurement	Thresholds	12	13	14	15	17	18	21	22	24	25	26	28	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)	Percentage of Route Length High < 40% of route Medium = 40%-44% of route Low ≥ 45% of route	2	4	4	4	4	4	2	2	-1	2	4	2	-1	2	2	4	-1	2	2	2	2	-1	-1
	Potential Major Commercial/Industrial/ warehouse impacts	Number of potential impacts to major commercial, industrial, and warehouse facilities	Number of Locations High = 0-2 Medium = 3-6 Low = 7+ *Large facility impact pushes route to low	2	4	4	4	4	2	2	2	-1	2	2	-1	2	2	4	4	2	4	4	4	4	2	4
	Potenatial wetland, water body, and floodplain impacts	% length adjacent to wetlands, water bodies, and floodplains; 500 feet (250 feet on each side of centerline)	Percentage of Route Length High ≤ 15% of route Medium = 16%-30% of route Low ≥ 31% of route	-1	-1	-1	-1	-1	-1	2	2	2	2	4	2	-1	-1	-1	2	2	-1	-1	2	2	2	-1
	Potential parks impacts	% length adjacent to parks and designated open spaces; 500 feet (250 feet on each side of centerline)	Percentage of Route Length High < 10% of route Medium = 10-19% of route Low ≥ 20% of route	2	2	2	2	2	2	2	2	2	2	2	2	2	-1	-1	4	4	4	2	2	4	4	4
Potential community impacts	Potential community facility impacts	Number of Community facilities within 500 feet (250 feet on each side of centerline)	Number of Locations High ≤ 39 Medium = 40-49 Low ≥ 50	4	4	4	4	4	4	2	2	2	2	2	2	2	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
	Potential Community Cohesion Impacts	Number of neighborhoods with potential community cohesion impacts	Number of Locations High = 0 Medium = 1-5 Low = 6+	4	4	2	4	2	4	2	2	2	2	2	2	-1	-1	2	2	2	2	2	4	4	4	2
	Potential environmental justice (EJ) impacts	Total Environmental Justice Index (EJI) Above-Average Block Groups; 500 feet (250 feet on each side of centerline)	Total Number of Block Groups High = 50-65 Medium = 66-79 Low ≥ 80	4	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	-1	-1	2	2	2	-1
Total Alignment Score				17	21	19	21	19	19	16	16	10	16	20	11	2	5	12	17	10	7	7	17	17	12	4
Tier 1 = 17+ points Tier 2 = 12-16 points Tier 3 = 11 or fewer points				1	1	1	1	1	1	2	2	3	2	1	3	3	3	2	1	3	3	3	1	1	2	3
				Essentially one alignment			Essentially one alignment													Essential same align						

Level 2 Criteria
Fatal Flaw and Ranking
Evaluate alternatives for fatal flaws and rank remaining alternatives

			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
	Potenatial 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 (EJ) impacts	Total Environmental Justice Index (EJI) Above-Average Block Groups; 500 feet (250 feet on each side of centerline)	Med	Med	Med	Med	Med	Low	Low	Med	Med	Med	Low
			3	3	2	1	3	3	3	1	1	2	3
								Essentially one alignment					

Level 2 Criteria
Fatal Flaw and Ranking
Evaluate alternatives for fatal flaws and rank remaining alternatives

All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1					Modes			
Criteria	Description	Measurement	Thresholds		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.	Technology Readiness Levels	High = 8-9 (Final product demonstrated/performed) Medium = 6-7 (Prototype performed in operational environment) Low ≤ 5 (Simulated, and predictable performance or less)	4	4	4	2
	Technology Maturity (Wayside Infrastructure)	Technology Readiness Levels (TRLs) for wayside infrastructure including substations, vacuum systems, emergency response systems, etc.	Technology Readiness Levels	High = 8-9 (Final product demonstrated/performed) Medium = 6-7 (Prototype performed in operational environment) Low ≤ 5 (Simulated, and predictable performance or less)	4	4	4	2
	Available design criteria	Design criteria available for technology	Yes/No	High = Yes Low = No	4	4	4	-1
	Regulatory Approval Complexity	U.S. Regulatory framework by technology (process in place)	Processes in Place	High = Process in place, agencies experienceed with process Medium = Process in place, few if any instances of application Low = No process in place and limited experience with mode	4	2	-1	-1
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	Yes/No	High = Yes Low = No	-1	-1	4	4
	Ability to interline	Ability to interline with existing projects (No Build)	Yes/No	High = Yes Low = No	-1	4	-1	-1
	Ability to Interline with future planned projects	Ability to interline with future planned projects	Yes/No	High = Yes Low = No	-1	4	4	4
	System capacity	Operational system capacity	Capacity	High/Med/Low	2	4	4	4
	Travel Demand	Projected range of ridership based on travel demand modeling results	Demand	High/Med/Low	-1	2	2	4
	Ease of adding infill stations	Ease of integrating future infill stations for each technology	High/Med/Low	High = Easy Medium = Moderate Low = Hard	2	-1	2	4
	Travel Time	Number of alignments viable by technology based on a 22 minute or less travel time, assuming a mid-point station	High/Med/Low	High = 23 Medium = 10-20 Low = 10 or fewer	-1	2	4	4
Mode Score					15	28	30	25

Eliminated

Level 2 Criteria
Fatal Flaw and Ranking
Evaluate alternatives for fatal flaws and rank remaining alternatives

			Modes			
	Criteria	Description	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
			Eliminated			

Appendix E

Detailed Level 3 Analysis Results

Level 3 Criteria
Detailed Alignment Evaluation
Detailed evaluation of top alternatives

The "proposed ROW" is defined as a 100' wide zone , extening 50' from either side of the proposed centerline according to the 5% Design.				All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1				I-30A						SH180/I-30 Hybrid		SH 180	
Criteria			Description		Measurement		Thresholds		12	13	14	15	17	18	30	31	
Potential Impacts to Sensitive Social, Biological, or Cultural Areas	Potential water body & floodplain impacts	Total length (linear feet) of alignment that crosses a water body or floodplain	Total Length (feet)		High < 20,000 feet Medium = 20,000 feet - 30,000 feet Low > 30,000 feet												
	Potential wetland impacts	Total acres of wetland within the proposed right-of-way	Total Acres		High = 0 - 0.99 acres Medium = 1 - 10 acres Low = 10+ acres												
	Existing structures that could be impacted by the potential ROW	Number of structures located within the proposed right-of-way (house, out-buildings, business, public buildings, billboards , etc.)	Total Number		High ≤ 20 Medium = 21-50 Low > 50												
	Potential parks/public recreational area impacts	Total acres of parks and public recreational areas within proposed ROW	Total Acres		High = 0 acre Medium = 0.1 - 2 acres Low > 2 acres												
	Potential historic resources impacts	Are there any national or state historic sites within the proposed ROW?	Total Number		Yes = low No = High												
Potential community impacts	Noise & Vibration - # of receptors	Number of sensitive receivers (residences, educational facilities, hospitals, childcare facilities, senior housing, theaters) within 500 feet (250 feet on each side of centerline)	Number of Locations		High < 300 Medium = 300-400 Low > 400												
	Visual/Aesthetic - # of receptors	Number of sensitive receivers (historic neighborhoods, historic places, cultural landmarks or districts, parks and open space) within 500 feet (250 feet on each side of centerline)	Number of Locations		High = 0 Medium = 1+												
Constructability	Required Non-Public ROW	Total Distance of new or non-public ROW needed [Determine additional distance of land needed outside the public ROW to meet this assumption.]	Total [Distance]		High ≤ 7.0 miles Medium = 7.1-10.0 miles Low > 10.0 miles												
	Potential Adverse Impacts to Transportation Systems During Construction	Potential adverse impact to existing transportation systems during construction. [Determine the potential level of impact to operations of transportation infrastructure using best engineering judgement.]	Serverity of Impacts		High = Minimal Modification/Closure of infrastructure Medium = Substantial Modification/Closure of existing infrastructure Low = Significant Modification/Reconstruction and long-term closure of existing infrastructure												
	Potential Opportunity to improve Transportation Systems	Potential opportunity to improve safety, capacity, and/or state of good repair of existing transportation systems during construction. [Determine the potential level of opportunity to improve transportation infrastructure using best engineering judgement.]	Opportunity for Improvement		High = Opportunities for project to require improvement to safety, capacity and/or state of good repair of existing transportation infrastructure Medium = No opportunities for project to require improvement to safety, capacity and/or state of good repair of existing transportation infrastructure												
Design Considerations	Vertical Profile	Does the known profile of the alignment create opportunity for the possible use of multiple high-speed transportation modes?	Max Grade %	Yes = High No = Low													
Total Score								24	24	26	37	37	31	25	16		

Level 3 Criteria

Detailed Alignment Evaluation

Detailed evaluation of top alternatives

[illegible]

Level 3 Criteria
Detailed Mode Evaluation
Detailed evaluation of top alternatives

All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1					Modes		
Criteria		Description	Measurement	Thresholds	High-Speed Rail	Maglev	Hyperloop
Constructability/Operability	Technology Maturity (Safety Systems)	Technology Readiness Levels (TRLs) for safety systems requirements including emergency response, ventilation, fire life safety, etc.	Technology Readiness Levels	High = 8-9 (Final product demonstrated/performed) Medium = 6-7 (Prototype performed in operational environment) Low ≤ 5 (Simulated, and predictable performance or less)	4	4	2
	Technology Maturity (Operations Systems)	Technology Readiness Levels (TRLs) for operational systems requirements including signaling, autonomous vehicle operations, control systems, etc.	Technology Readiness Levels	High = 8-9 (Final product demonstrated/performed) Medium = 6-7 (Prototype performed in operational environment) Low ≤ 5 (Simulated, and predictable performance or less)	4	4	2
	Technology Maturity (Revenue Operation)	Number of Routes (10+ miles) currently in revenue operation worldwide	Number of routes	High ≥ 10 Medium = 1-9 Low = 0	4	2	-1
	Potential to serve as an extension to planned high-speed systems	Ability of mode to serve as an extension to planned high-speed systems assuming specific chosen technology, equipment and specifications are appropriately compatible.	Yes/No	High = Yes Low = No	4	-1	-1
	Potential Adverse Impacts to Transportation Systems	Are there any potential adverse impacts to existing transportation systems due to mode-specific operations or maintenance?	High/Med/Low	High = able to conduct O&M with little impact Medium = able to conduct O&M with moderate impact Low = able to conduct O&M with high impact	2	2	4
Costs	Capital (Construction) Cost	Rough Order of Magnitude Construction cost for the structure, ancillary facilities, maintenance facilities and vehicles, per mile	Cost per mile	High ≤ \$75 million Medium = \$75 million - \$150 million Low > \$150 million <i>Based upon our draft estimate, HSR is about \$95M/mile, Maglev is about \$180M/mile, Hyperloop is about \$90M/mile.</i>	2	-1	2
O&M	Travel Time	Running time between Dallas and Fort Worth under a mid-corridor station scenario.	Travel Time	High: Slowest run time ≤ 15 minutes Medium: Slowest run time = 16 - 19 minutes Low: Slowest run time ≥ 20 minutes	2	2	4
	Vertical Profile	How well can each technology accommodate higher grades?	Grade %	Med = 0-5% High > 5%	2	2	4
	Max Curve Speed	Theoretical design speed at which a mode is able to travel through curves in the alignment.	Speed	High/Med/Low	-1	2	4
Total Score					23	16	20

Level 3 Criteria
Detailed Mode Evaluation
Detailed evaluation of top alternatives

All criteria have thresholds for High/Medium/Low measurements: High = 4, Med = 2, Low = -1					Modes		
Criteria		Description	Measurement	Thresholds	High-Speed Rail	Maglev	Hyperloop
Constructability/Operability	Technology Maturity (Safety Systems)	Technology Readiness Levels (TRLs) for safety systems requirements including emergency response, ventilation, fire life safety, etc.	Technology Readiness Levels	High = 8-9 (Final product demonstrated/performed) Medium = 6-7 (Prototype performed in operational environment) Low ≤ 5 (Simulated, and predictable performance or less)	High	High	Medium
	Technology Maturity (Operations Systems)	Technology Readiness Levels (TRLs) for operational systems requirements including signaling, autonomous vehicle operations, control systems, etc.	Technology Readiness Levels	High = 8-9 (Final product demonstrated/performed) Medium = 6-7 (Prototype performed in operational environment) Low ≤ 5 (Simulated, and predictable performance or less)	High	High	Medium
	Technology Maturity (Revenue Operation)	Number of Routes (10+ miles) currently in revenue operation worldwide	Number of routes	High ≥ 10 Medium = 1-9 Low = 0	High	Medium	Low
	Potential to serve as an extension to planned high-speed systems	Ability of mode to serve as an extension to planned high-speed systems assuming specific chosen technology, equipment and specifications are appropriately compatible.	Yes/No	High = Yes Low = No	High	Low	Low
	Potential Adverse Impacts to Transportation Systems	Are there any potential adverse impacts to existing transportation systems due to mode-specific operations or maintenance?	Yes/No	High = able to conduct O&M with little impact Medium = able to conduct O&M with moderate impact Low = able to conduct O&M with high impact	Medium	High	High
Costs	Capital (Construction) Cost	Rough Order of Magnitude Construction cost for the guideway, ancillary facilities, maintenance facilities and vehicles, per mile	Cost per mile	High ≤ \$75 million Medium = \$75 million - \$150 million Low > \$150 million <i>Based upon our draft estimate, HSR is about \$95M/mile, Maglev is about \$180M/mile, Hyperloop is about \$90M/mile.</i>	Medium	Low	Medium
O&M	Travel Time	Running time between Dallas and Fort Worth under a mid-corridor station scenario.	Travel Time	High: Slowest run time ≤ 15 minutes Medium: Slowest run time = 16 - 19 minutes Low: Slowest run time ≥ 20 minutes	Medium	Medium	High
	Vertical Profile	How well can each technology accommodate higher grades?	Grade %	Med = 0-5% High > 5%	Medium	Medium	High
	Max Curve Speed	Theoretical design speed at which a mode is able to travel through curves in the alignment.	Speed	High/Med/Low	Low	Medium	High

Appendix F

Travel Time Forecasts Technical Memorandum

Travel Time Forecasts Technical Memorandum

Dallas-Fort Worth High-Speed
Transportation Connections Study

December 2021





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Appendices

- Appendix A – Alignment Maps
- Appendix B – Level 3 Alignment Maps
- Appendix C – Level 3 Travel Time Tables



1.0 INTRODUCTION

The North Central Texas Council of Governments (NCTCOG), in cooperation with the Federal Railroad Administration (FRA) and Federal Transit Administration (FTA), is conducting engineering and environmental studies for the high-speed passenger service between downtown Dallas and downtown Fort Worth; a distance of approximately 31 miles. Locally, the project is known as the Dallas-Fort Worth High-Speed Transportation Connections (DFWHSTC) study. The study objective is to modernize and enhance mobility between Dallas and Fort Worth by evaluating high-speed transportation alternatives. The goal is to identify a reliable and viable alternative which enhances the regional transportation system and connects Dallas-Fort Worth with other proposed high-performance passenger systems in the state.

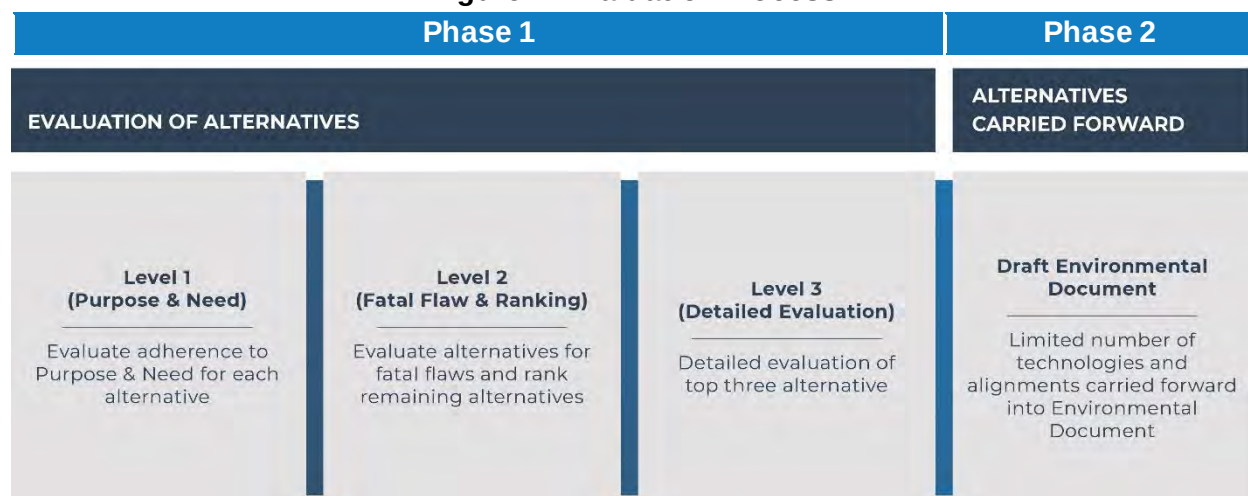
Forecasted travel times for each alternative were a key component to the tiered evaluation process and study outcomes. This report summarizes the methodology and results of the travel time forecasts for the DFWHSTC study by providing a description of inputs and assumptions at each step in the process, as well as refinements made during the study, and conclusions and results.

2.0 STUDY AND EVALUATION PROCESS

2.1 SCREENING

During the first year of the DFWHSTC study, NCTCOG evaluated high-speed transportation technologies and corridor alignments through a three-step screening process to identify the technology and alignment combination that best meets the identified purpose and need of the project. Work completed to date falls within the first of a two-phase process. Phase 1 developed and evaluated transportation technologies and alignments. Phase 2 will refine and evaluate the reasonable alternatives recommended in Phase 1 and document these efforts in the National Environmental Policy Act process. Figure 1 shows a summary of the evaluation process conducted within Phase 1.

Figure 1: Evaluation Process





2.2 MODE TECHNOLOGIES AND ALTERNATIVE ALIGNMENTS

In Phase 1, the study employed a three-level screening process to pare down the initial large number of possible alignment and mode options to a limited number to be studied in Phase 2. In total, five modes were evaluated, these include:

- Conventional Rail
- Higher-Speed Rail
- High-Speed Rail
- Magnetic Levitation (Maglev)
- Hyperloop

Figure 2 provides a high-level depiction of each mode technology evaluated.

Figure 2: Types of Advanced Guideway Technologies

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	Yes	Operational
HYPERLOOP					
					
650+ mph	Yes	~2 Minutes	On-demand (Smart Elevator)	Yes	Prototypes Undergoing Testing

In addition to evaluating mode technologies, Phase 1 began by evaluating 43 unique alignments. Generally, alignments are defined within five corridors which include Trinity Railway Express alignments, West Fork Trinity River alignments, I-30 alignments, SH 180 alignments, and SH 303 alignments. A visual overview of the alignments is shown in Figure 3. Refer to Appendix A to view maps for each individual alignment.

Figure 3: Potential Corridor Alignments



2.2.1 Level 1 Screening

The Level 1 evaluation considered terminus locations and auto-competitive travel times as the primary criterion. Secondary criterion in the Level 1 evaluation requires alternatives to be safe, reliable, convenient, link to other high-performance systems, connect to existing regional/light rail in Dallas and Fort Worth, and improve access to major activity centers. The Level 1 screening evaluated five technologies across 43 unique alignments. Mode technologies evaluated in the Level 1 screening included conventional rail, higher speed rail, high-speed rail, maglev, and hyperloop. This screening eliminated 20 alignments and one mode.

2.2.2 Level 2 Screening

The Level 2 screening built on Level 1 results and focused on identifying major flaws which could preclude an alternative from being built and ranked as remaining alternatives. The Level 2 screening evaluated technology maturity, technology design criteria, technology regulatory approvals, capacity, travel time, compatibility with existing infrastructure, and other operational considerations. The Level 2 screening evaluated 23 alignments and four modes including higher-speed rail, high-speed rail, maglev, and hyperloop. The Level 2 screening also accommodated potential mid-point station locations in the alternatives. This screening eliminated 10 alignments and one mode.

2.2.3 Level 3 Screening

The Level 3 screening built on Level 1 and Level 2 screenings and evaluated potential impacts to sensitive social, biological, or cultural areas, in addition to costs, potential community



impacts, travel time, constructability, and operability. In the Level 3 evaluation, the study conducted a detailed evaluation of remaining alternatives. An initial five percent level of design was developed for the remaining alternatives to provide more engineering information. The Level 3 screening evaluated 10 alignments for three technologies including high-speed rail, maglev, and hyperloop. The Level 3 screening evaluated travel times both as “express” service without a stop at the mid-point station, as well as alignment travel times including a stop at the mid-point station. The high-speed transportation infrastructure concept includes additional eastbound and westbound tracks/tubes that would pass through the mid-point station without stopping at the station platforms when providing express service along the corridor.

3.0 TRAVEL TIME FORECAST METHDOLOGY AND ASSUMPTIONS

The travel time forecasts were developed using a spreadsheet model calculating travel time based on distance, maximum technology speed, design guidance (minimum curve radius and superelevation), acceleration, and deceleration. The model was used to forecast travel times for a one-way trip (in the eastbound direction). Each alignment was divided into straight, tangent, and curve segments and travel time and average speed was calculated for each alignment segment based on technology capabilities and operating assumptions. Design capabilities for each technology (minimum horizontal curve radius and superelevation assumption) constrain travel speed in curve segments, and the model accounts for acceleration and for deceleration required to slow to the design speed on curve segments.

Design guidance and operational characteristics for conventional rail, higher-speed rail, high-speed rail, and maglev are more established, while technology performance capabilities for hyperloop are still in development. Initial performance characteristics were obtained from established criteria and from input provided by technology professionals participating in Phase 1 and Phase 2 of the Technology Forum. Refer to the Technology Forum Summary Report for more information about the four-phase Technology Forum conducted by NCTCOG to proactively engage national and international high-speed transportation technology providers and operators about technology readiness, performance characteristics and relevance to the DFWHSTC project.

As the evaluation progressed, mode and operating assumptions were refined based upon input from transportation technology providers, particularly for the hyperloop mode. Updated performance characteristics provided by various hyperloop technology providers allowed the project team to create revised parameters for hyperloop travel time forecasting, applying more conservative values for maximum speed and minimum curve radius. Table 1 provides the operating characteristics used as inputs for the travel time forecasts for conventional rail, higher-speed rail, high-speed rail, maglev, and hyperloop. The “Hyperloop (Revised)” characteristics were applied to the Level 2 and Level 3 travel time analysis.



Table 1: Mode Technology Operating Assumptions

Technology	Acceleration	Deceleration	Maximum Speed	Minimum Horizontal Curve at Top Speed
Conventional Rail	2.0 mph/s	2.0 mph/s	79 mph	5,900 ft
Higher-Speed Rail	2.0 mph/s	2.5 mph/s	140 mph	16,400 ft
High-Speed Rail	0.72 m/s ²	0.75 m/s ²	205 mph	17,100 ft
Maglev	0.15 g	0.15 g	311 mph	26,400 ft
Hyperloop	0.15 g	0.15 g	670 mph	8,448 ft
Hyperloop (Revised)	0.15 g	0.15 g	621 mph	57,000 ft

4.0 TRAVEL TIME FORECAST RESULTS

4.1 LEVEL 1 SCREENING TRAVEL TIME FORECASTS

The Level 1 screening evaluated all five technologies across 43 unique alignments. The Level 1 travel time forecasts are presented in Table 2. The Level 1 alternative evaluation screened alignments based on a forecasted transit travel time of 20 minutes (an express service scenario with no mid-point station stop) to be competitive to automobile travel time in the off-peak period. In summary:

- **Conventional Rail:** Travel times ranged from 27 to 34. None of the 43 alignments passed the 20-minute threshold
- **Higher-Speed Rail:** Travel times ranged from 19 to 27. 8 out of the 43 alignments passed the 20-minute threshold
- **High-Speed Rail:** Travel times ranged from 14 to 22. 39 of the 43 alignments passed the 20-minute threshold
- **Maglev:** Travel times ranged from 11 to 18. All 43 alignments passed the 20-minute threshold
- **Hyperloop:** Travel times ranged from 6 to 9. All 43 alignments passed the 20-minute threshold

The two alignments which performed worst (specifically in regard to travel time performance) were the Trinity Railway Express alignments and the SH 303 alignments. As anticipated, the conventional rail mode technology resulted in the slowest travel time. Following the traveling time primary screening, a secondary screening evaluation resulted in a recommendation to remove all Trinity Railway alignments, all West Fork Trinity River alignments, all SH 303 alignments, five of the I-30 alignments, and two of the SH 180 alignments.



Table 2: Level 1 Travel Time Analysis Results (Excludes Mid-Point Station)

Alignment	Conventional Rail	Higher-Speed Rail	High-Speed Rail	Maglev	Hyperloop
1 - Trinity Railway Express (A)	29 min	21 min	20 min	12 min	7 min
2 - Trinity Railway Express (B)	28 min	19 min	14 min	11 min	6 min
3 - Trinity Railway Express (C)	34 min	21 min	16 min	12 min	7 min
4 - Trinity Railway Express (D)	29 min	20 min	16 min	12 min	7 min
5 - Trinity Railway Express (E)	30 min	22 min	17 min	13 min	7 min
6 - West Fork Trinity River (A)	30 min	22 min	17 min	13 min	7 min
7 - West Fork Trinity River (B)	30 min	21 min	16 min	13 min	7 min
8 - West Fork Trinity River (C)	32 min	23 min	18 min	14 min	7 min
9 - West Fork Trinity River (D)	28 min	20 min	16 min	13 min	7 min
10 - West Fork Trinity River (E)	28 min	19 min	15 min	11 min	7 min
11 - West Fork Trinity River (F)	29 min	21 min	17 min	13 min	7 min
12 - I-30 Alignment (A)	27 min	20 min	16 min	12 min	7 min
13 - I-30 Alignment (B)	27 min	19 min	15 min	11 min	6 min
14 - I-30 Alignment (C)	29 min	22 min	18 min	14 min	7 min
15 - I-30 Alignment (D)	27 min	19 min	15 min	11 min	6 min
16 - I-30 Alignment (E)	27 min	19 min	15 min	11 min	6 min
17 - I-30 Alignment (F)	29 min	22 min	18 min	14 min	7 min
18 - I-30 Alignment (G)	27 min	19 min	15 min	12 min	7 min
19 - I-30 Alignment (H)	27 min	19 min	15 min	12 min	6 min
20 - I-30 Alignment (I)	29 min	22 min	18 min	14 min	7 min
21 - I-30 Alignment (J)	28 min	20 min	16 min	12 min	6 min
22 - I-30 Alignment (K)	28 min	20 min	16 min	12 min	7 min
23 - I-30 Alignment (L)	28 min	21 min	16 min	12 min	7 min
24 - I-30 Alignment (M)	27 min	19 min	15 min	12 min	7 min
25 - I-30 Alignment (N)	28 min	21 min	16 min	13 min	7 min
26 - I-30 Alignment (O)	29 min	21 min	17 min	13 min	7 min
27 - I-30 Alignment (P)	28 min	21 min	17 min	13 min	7 min
28 - I-30 Alignment (Q)	27 min	20 min	15 min	12 min	7 min
29 - SH-180 Alignment (A)	30 min	22 min	17 min	13 min	7 min
30 - SH-180 Alignment (B)	31 min	23 min	18 min	14 min	7 min
31 - SH-180 Alignment (C)	27 min	22 min	18 min	14 min	7 min
32 - SH-180 Alignment (D)	28 min	22 min	18 min	14 min	7 min
33 - SH-180 Alignment (E)	27 min	23 min	18 min	14 min	7 min
34 - SH-180 Alignment (F)	28 min	22 min	18 min	14 min	7 min
35 - SH-180 Alignment (G)	30 min	24 min	19 min	16 min	7 min
36 - SH-180 Alignment (H)	30 min	24 min	19 min	15 min	7 min
37 - SH-180 Alignment (I)	28 min	23 min	18 min	14 min	7 min
38 - SH-180 Alignment (J)	28 min	23 min	18 min	14 min	7 min
39 - SH-180 Alignment (K)	27 min	23 min	19 min	15 min	7 min
40 - SH-180 Alignment (L)	27 min	22 min	18 min	14 min	7 min
41 - SH-180 Alignment (M)	34 min	27 min	22 min	18 min	8 min
43 - SH 303 Alignments (A)	30 min	25 min	20 min	16 min	8 min
43 - SH 303 Alignments (B)	34 min	27 min	22 min	17 min	9 min

4.2 LEVEL 2 SCREENING TRAVEL TIME FORECASTS

The Level 2 screening evaluated 23 alignments and four modes including higher-speed rail, high-speed rail, maglev, and hyperloop. The Level 2 travel time forecasts with a two-minute stop at a mid-point station are presented in Table 3. While travel time continued to be a factor in the Level 2 screening, other factors including technology maturity, technology design criteria, technology regulatory approvals, capacity, compatibility with existing infrastructure, and other



operational considerations were part of Level 2. The Level 2 screening resulted in the following recommendations:

- **Higher-Speed Rail:** Eliminate higher-speed rail mode
- **Other Mode:** High-speed rail, maglev, and hyperloop advance into the Level 3 evaluation
- **I-30 Alignments:** Carry forward seven of 12 alignments
- **SH 180 Alignments:** Carry forward three of 11 alignments

Table 3: Level 2 Travel Time Analysis Results (Includes Mid-Point Station)

Alignment	Higher-Speed Rail	High-Speed Rail	Maglev	Hyperloop (Revised)
12 - I-30 Alignment (A)	23 min	19 min	15 min	13 min
13 - I-30 Alignment (B)	22 min	18 min	14 min	12 min
14 - I-30 Alignment (C)	25 min	21 min	16 min	14 min
15 - I-30 Alignment (D)	22 min	18 min	14 min	12 min
17 - I-30 Alignment (F)	24 min	20 min	16 min	14 min
18 - I-30 Alignment (G)	22 min	19 min	14 min	13 min
21 - I-30 Alignment (J)	23 min	19 min	15 min	13 min
22 - I-30 Alignment (K)	23 min	20 min	15 min	14 min
24 - I-30 Alignment (M)	23 min	19 min	15 min	13 min
25 - I-30 Alignment (N)	23 min	19 min	15 min	13 min
26 - I-30 Alignment (O)	24 min	20 min	16 min	14 min
28 - I-30 Alignment (Q)	23 min	19 min	15 min	13 min
29 - SH-180 Alignment (A)	24 min	20 min	16 min	14 min
30 - SH-180 Alignment (B)	26 min	21 min	17 min	14 min
31 - SH-180 Alignment (C)	24 min	21 min	17 min	14 min
32 - SH-180 Alignment (D)	25 min	21 min	17 min	15 min
34 - SH-180 Alignment (F)	25 min	21 min	17 min	14 min
35 - SH-180 Alignment (G)	26 min	23 min	18 min	15 min
36 - SH-180 Alignment (H)	27 min	23 min	18 min	15 min
37 - SH-180 Alignment (I)	25 min	21 min	17 min	14 min
38 - SH-180 Alignment (J)	25 min	21 min	17 min	14 min
40 - SH-180 Alignment (L)	25 min	21 min	17 min	14 min
41 - SH-180 Alignment (M)	30 min	26 min	20 min	17 min

Alignments 32, 32B, and 37 experienced similar refinements during the 15% design and were subsequently combined into one singular alignment identified as Alignment 31. Alignments 26 and 30 share the same configuration along the eastern half of the project and were combined into Alignment 30 during the 15% design. These refinements are reflected in the Level 3 screening. Refer to the Phase 1 Alternatives Analysis Final Report to view details pertaining to the Level 2 screening analysis.

4.3 LEVEL 3 SCREENING TRAVEL TIME FORECASTS

The Level 3 screening evaluated ten alignments and three modes including high-speed rail, maglev, and hyperloop. The Level 3 screening evaluated travel times both as “express” options without a mid-point station, as well as alignment travel times with mid-point station. The Level 3 travel time forecasts with a mid-point station are presented in Table 4. As indicated in Table 4, the I-30 alignments all have a faster forecasted travel time than then SH-180 alignments. The Level 3 travel time forecasts for the express option are presented in Table 5. Refer to Appendix



B to view the maps for each Level 3 alignment and to Appendix C to view the Level 3 alignment travel time tables.

Table 4: Level 3 Travel Time Analysis Results (Includes Mid-Point Station)

Alignment	High-Speed Rail	Maglev	Hyperloop (Revised)
12 - I-30 Alignment (A)	21 min	16 min	13 min
13 - I-30 Alignment (B)	21 min	15 min	13 min
14 - I-30 Alignment (C)	21 min	16 min	13 min
15 - I-30 Alignment (D)	20 min	15 min	13 min
17 - I-30 Alignment (F)	21 min	15 min	13 min
18 - I-30 Alignment (G)	20 min	15 min	13 min
26 - I-30 Alignment (O)	22 min	16 min	14 min
32 - SH-180 Alignment (D)	22 min	17 min	15 min
32B - SH-180 Alignment (D Modified)	22 min	17 min	15 min
37 - SH-180 Alignment (I)	22 min	17 min	14 min

Table 5: Level 3 Travel Time Analysis Results (Excludes Mid-Point Station)

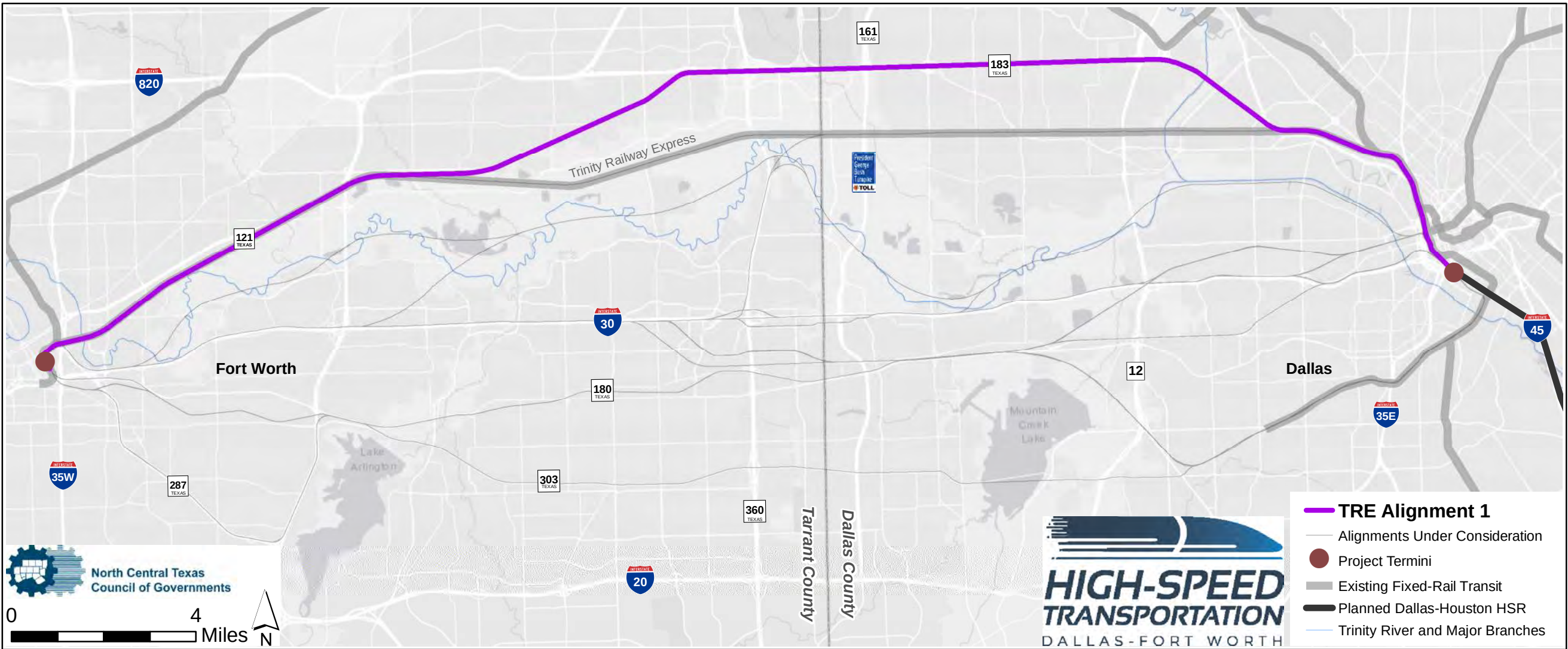
Alignment	High-Speed Rail	Maglev	Hyperloop (Revised)
12 - I-30 Alignment (A)	17 min	12 min	10 min
13 - I-30 Alignment (B)	17 min	12 min	9 min
14 - I-30 Alignment (C)	18 min	12 min	10 min
15 - I-30 Alignment (D)	17 min	12 min	9 min
17 - I-30 Alignment (F)	18 min	12 min	10 min
18 - I-30 Alignment (G)	17 min	12 min	10 min
26 - I-30 Alignment (O)	19 min	14 min	11 min
32 - SH-180 Alignment (D)	19 min	15 min	12 min
32B - SH-180 Alignment (D Modified)	19 min	15 min	12 min
37 - SH-180 Alignment (I)	19 min	14 min	11 min

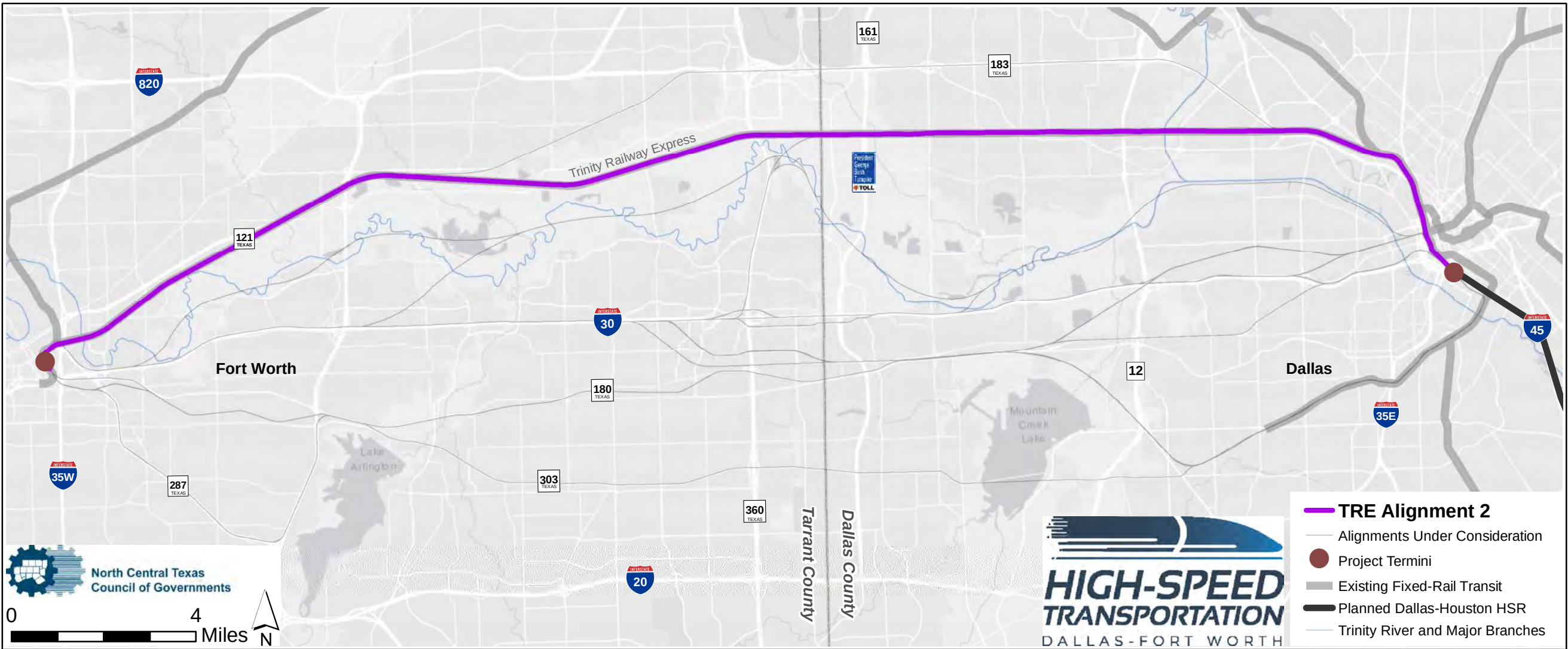
5.0 CONCLUSIONS

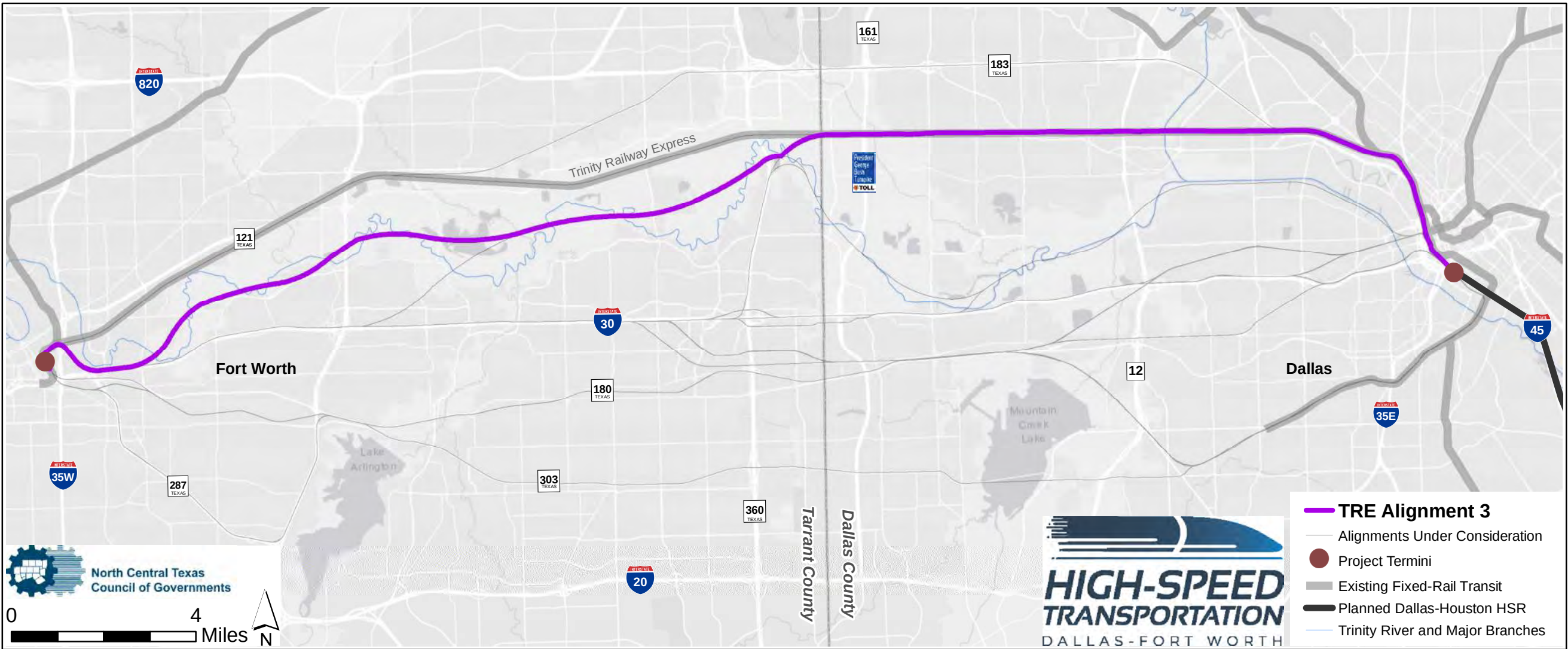
The alignment concepts evaluated during Level 3 screening were concurrently advanced through 5% design, applying geometric criteria refining the shape of each alignment alternative. Refer to the Conceptual Options Development (5 Percent Design) Summary Report for more information regarding the development of the 5 percent design concept. Travel times will be reassessed in Phase 2 once the alignment concept is further advanced through preliminary engineering.

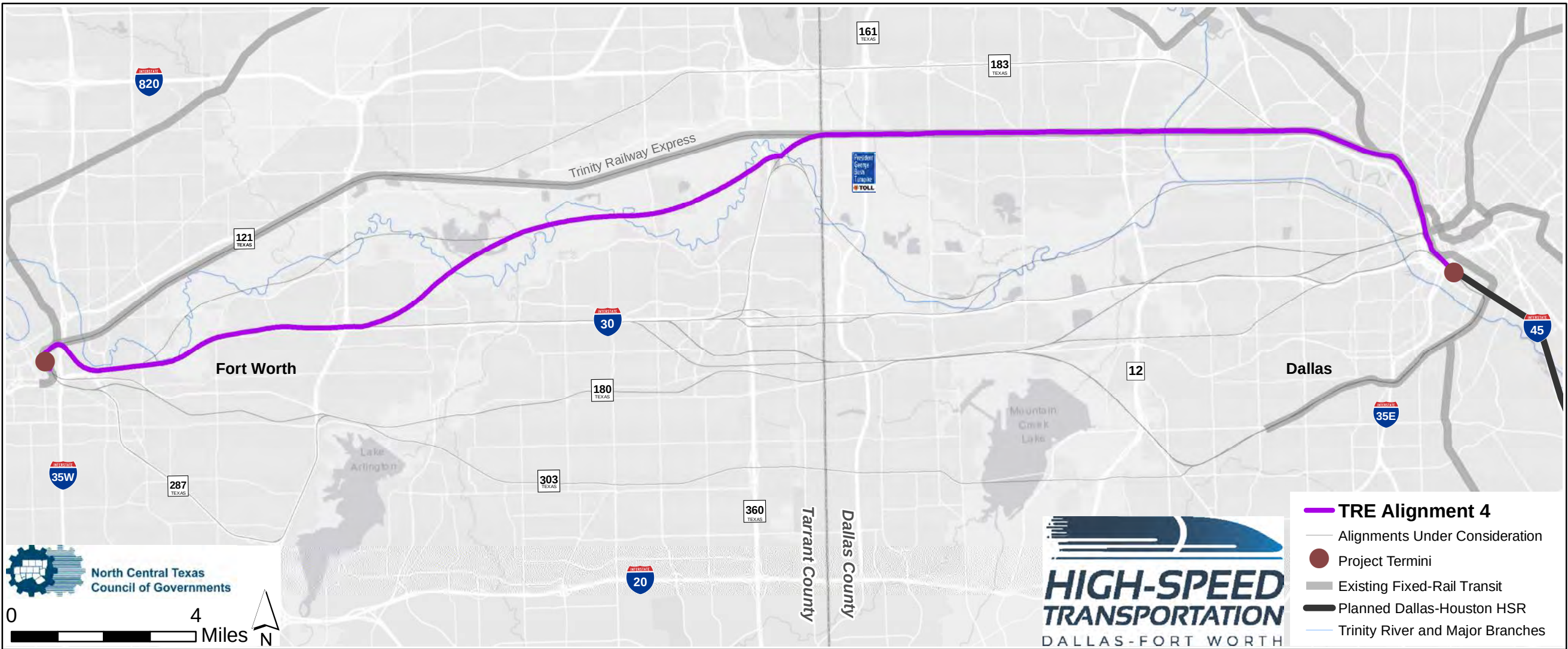
Appendix A

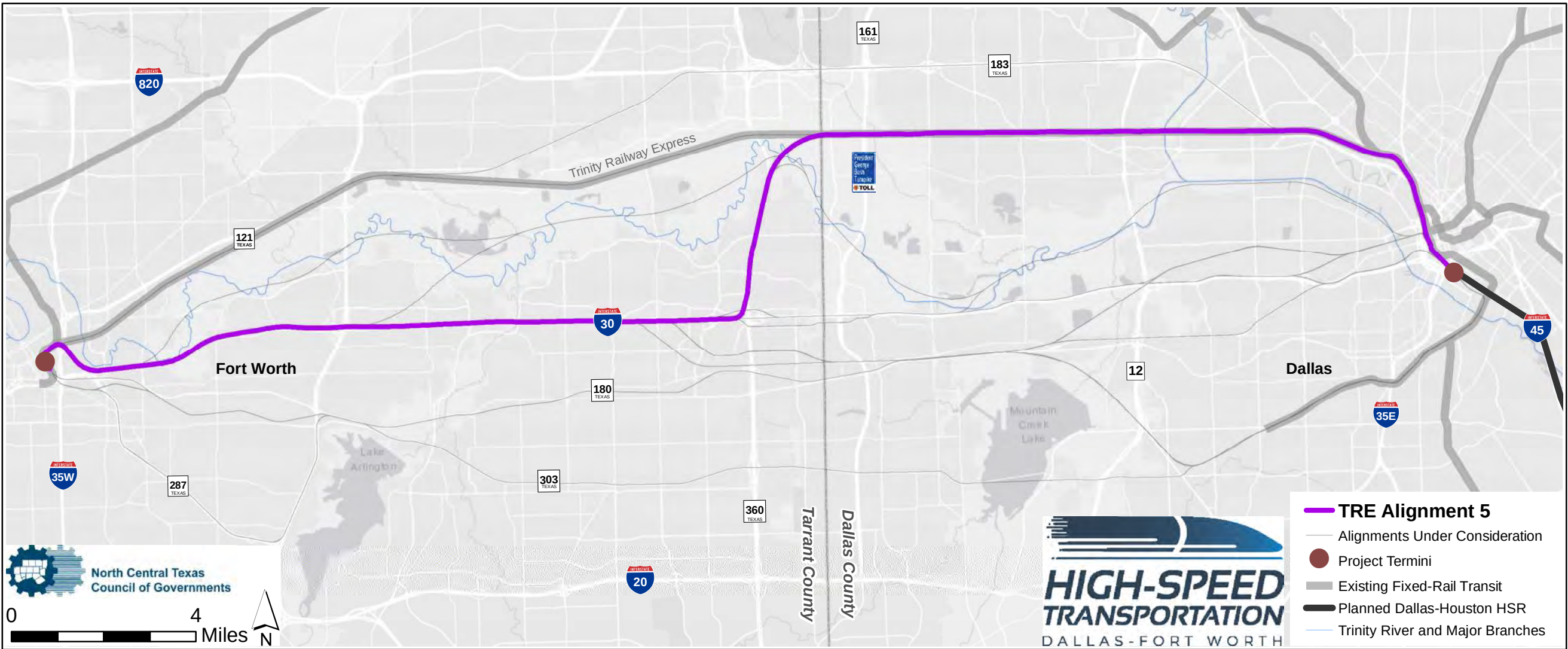
Alignment Maps

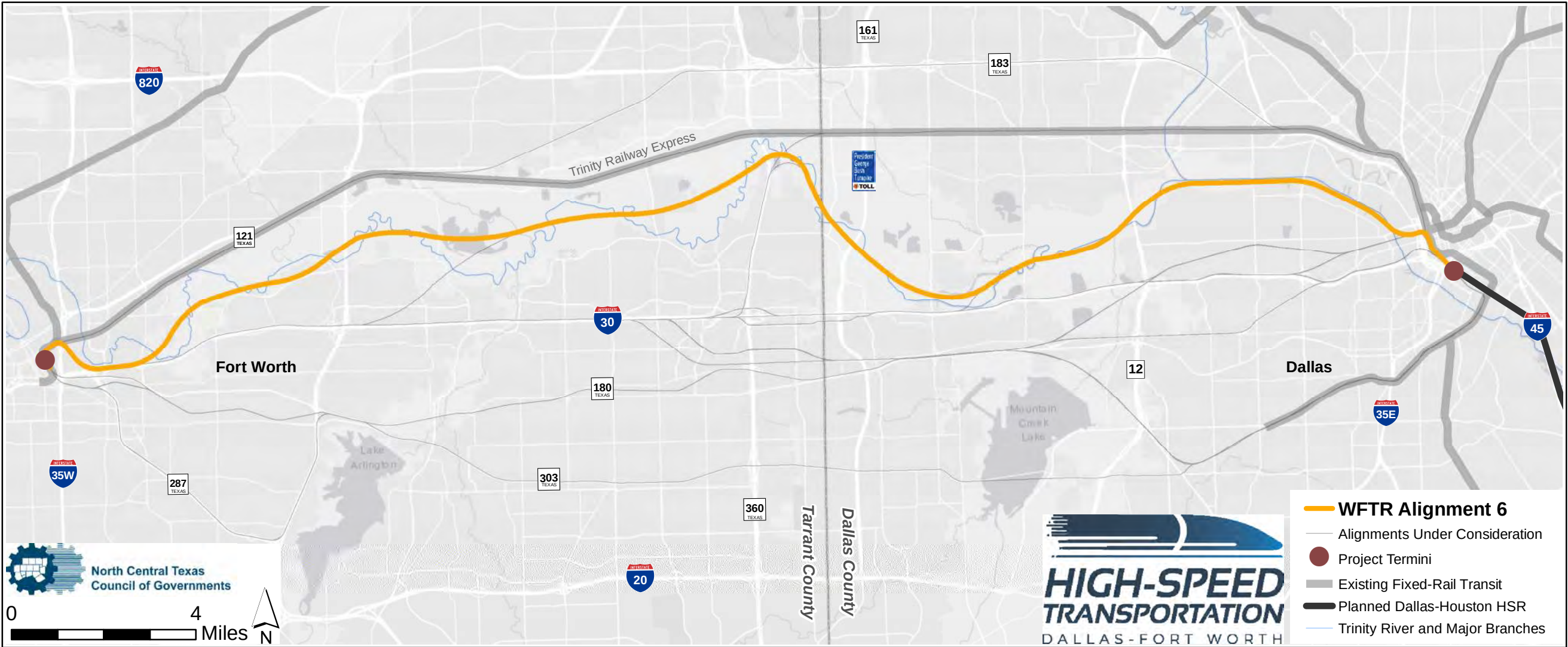


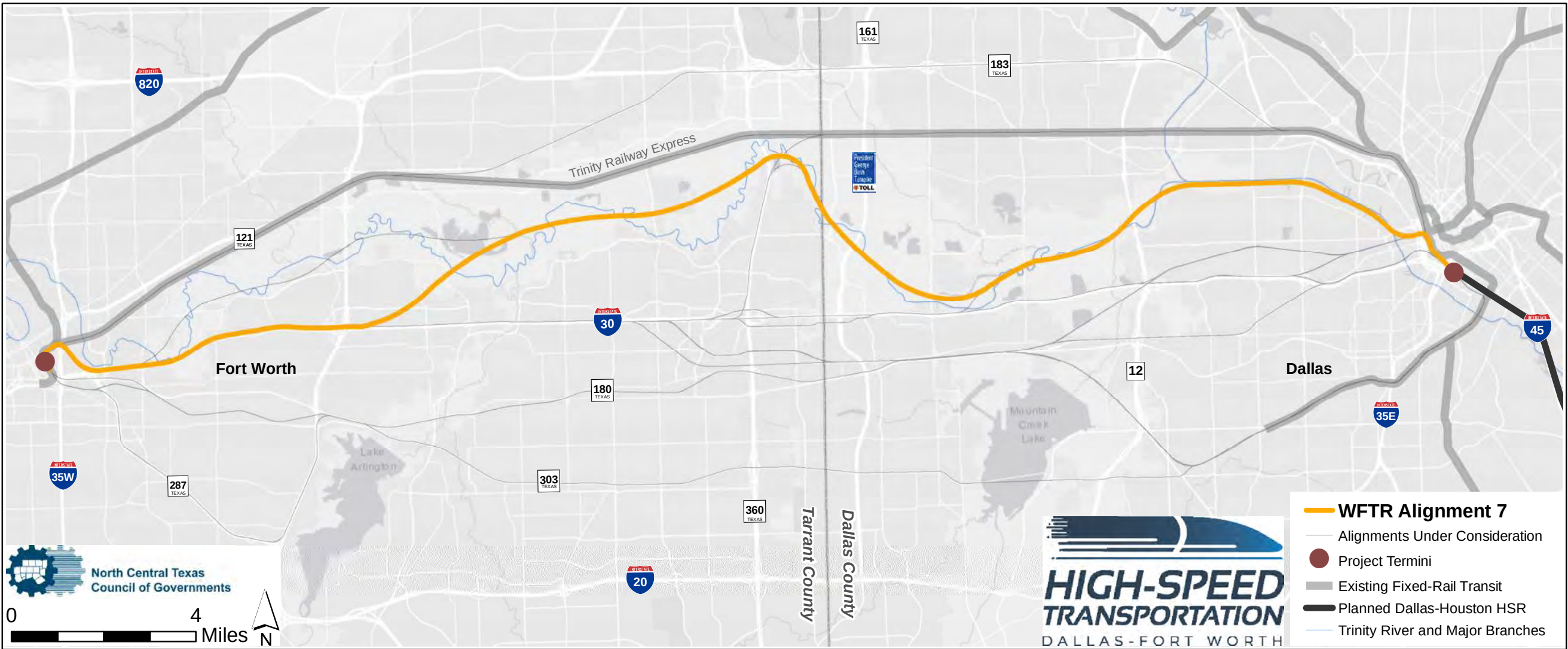


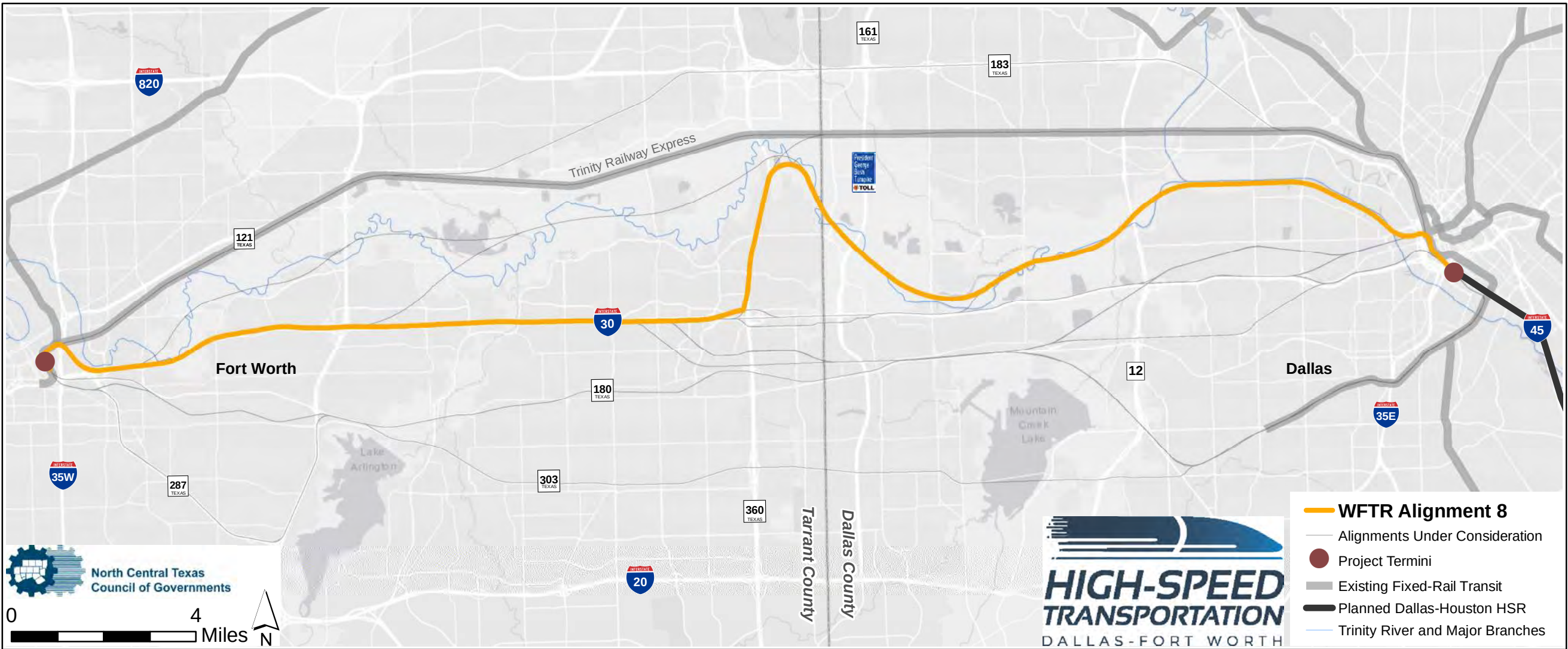


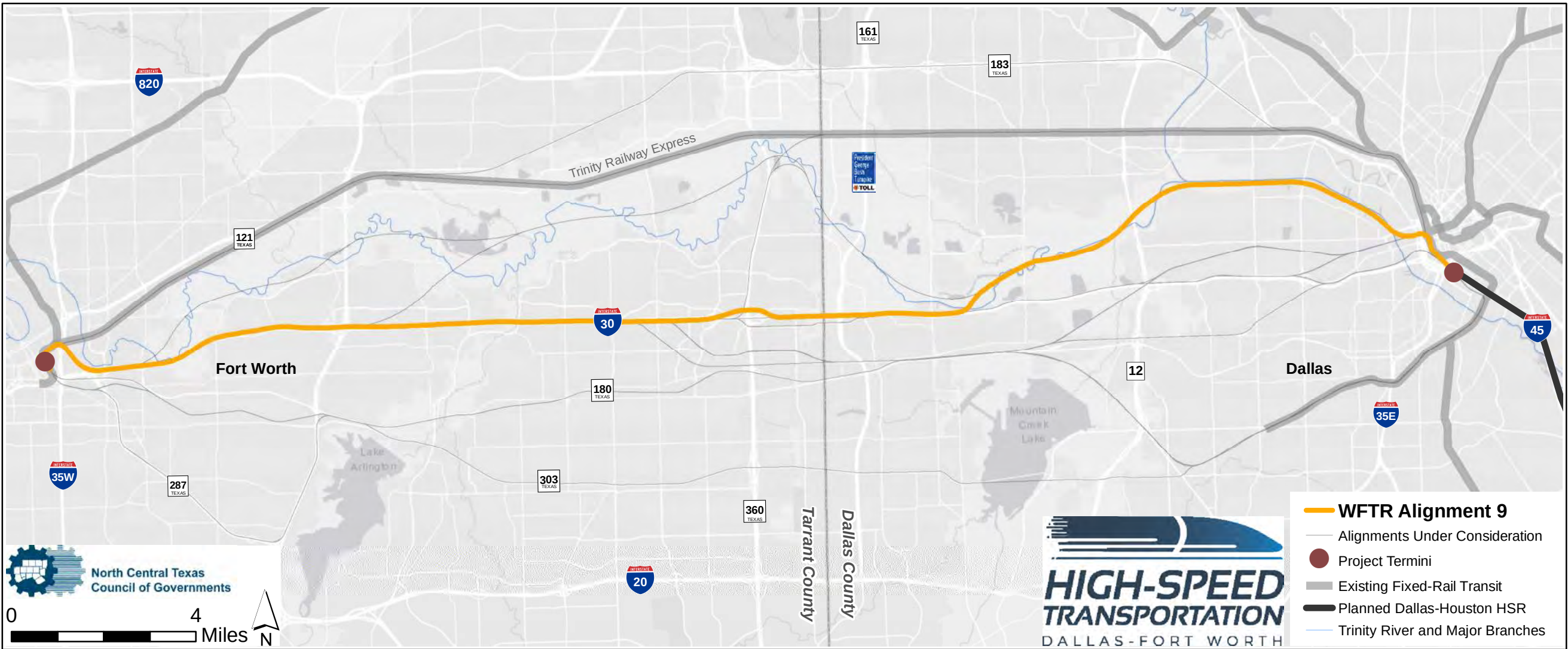


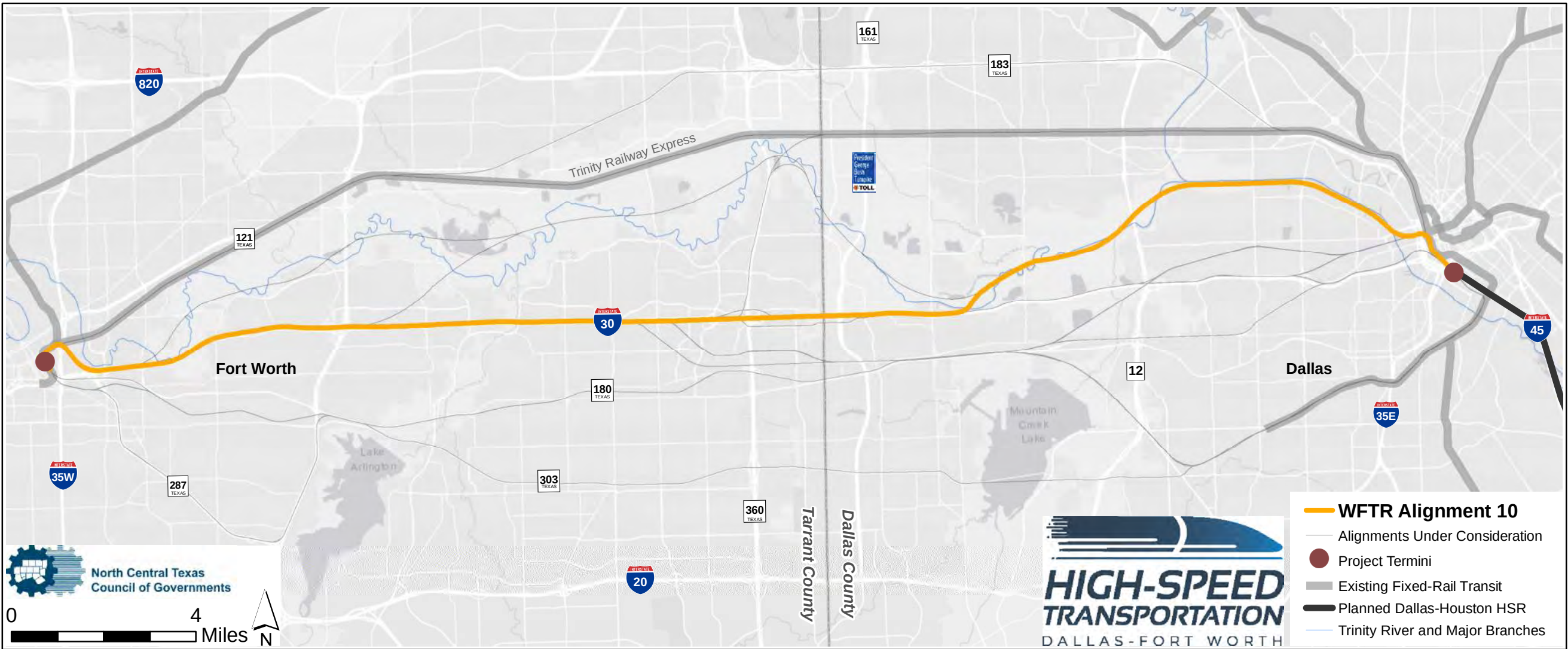


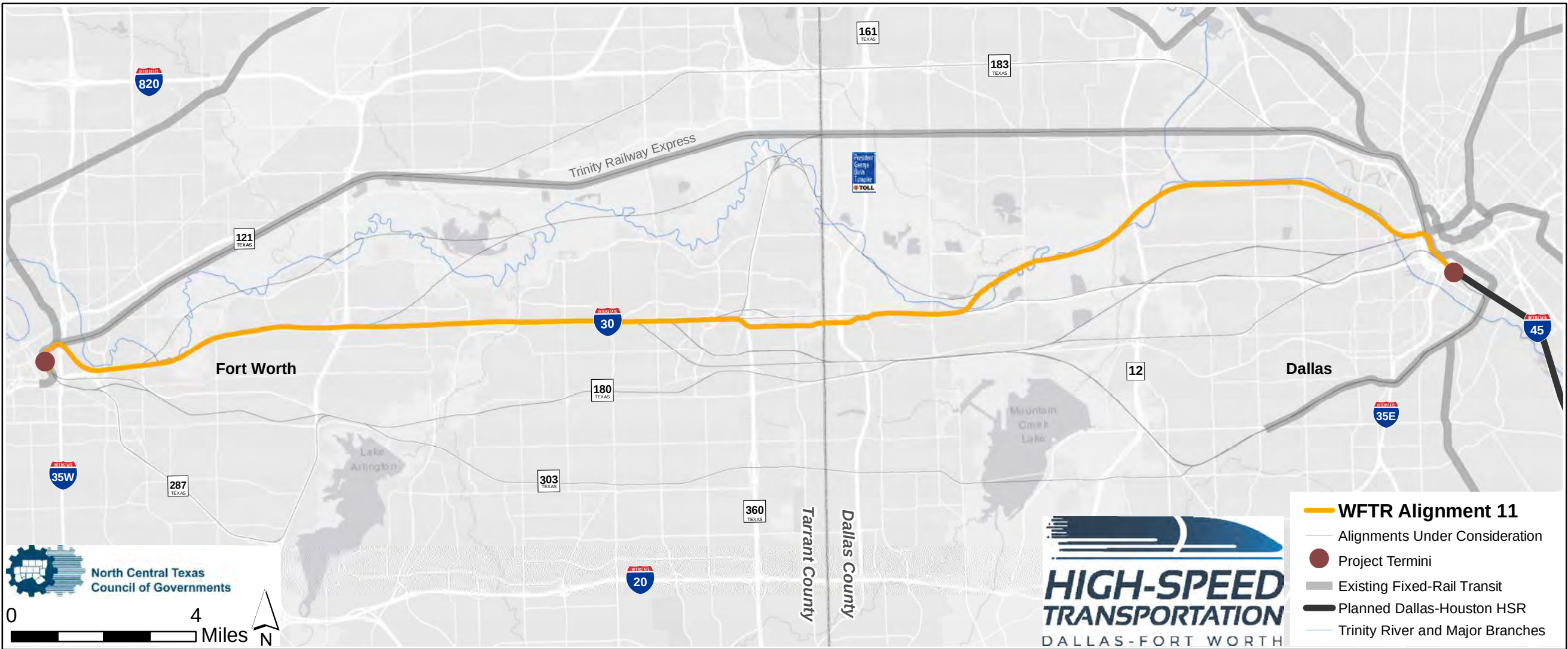


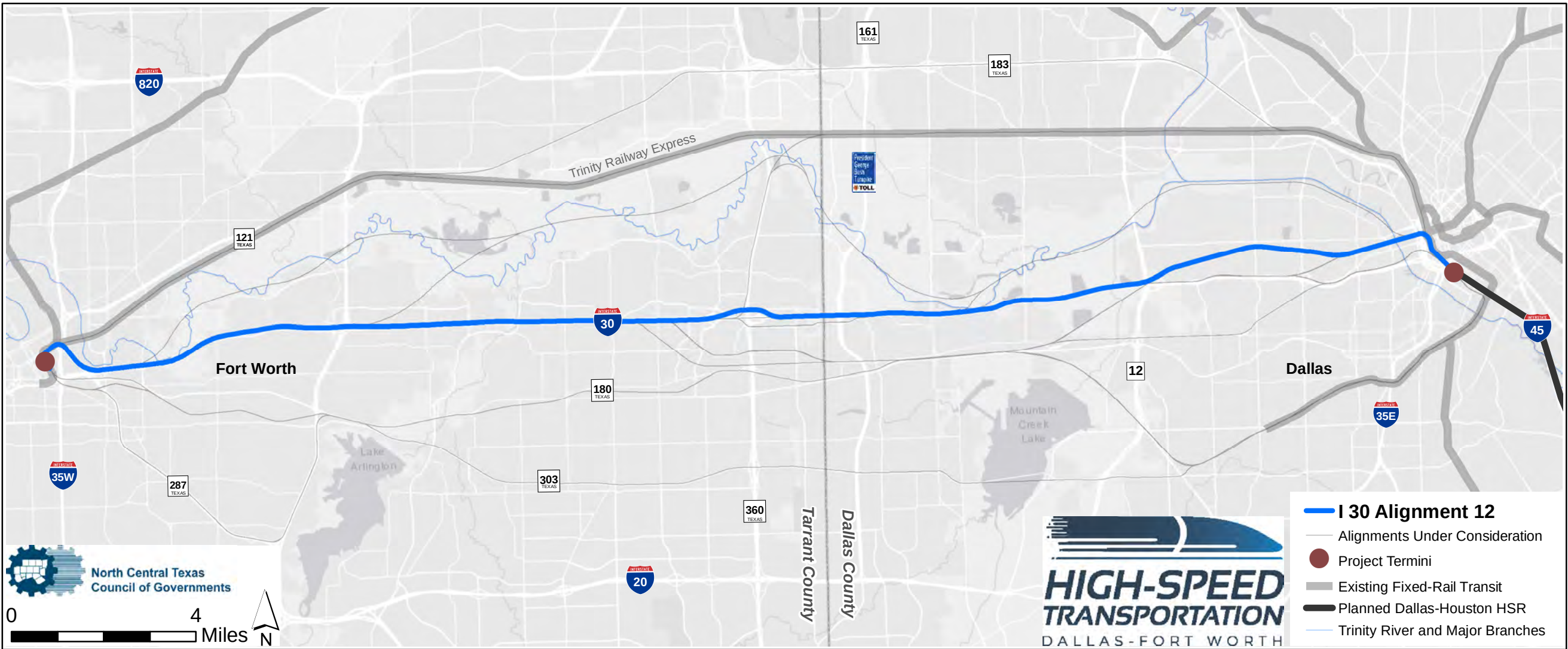


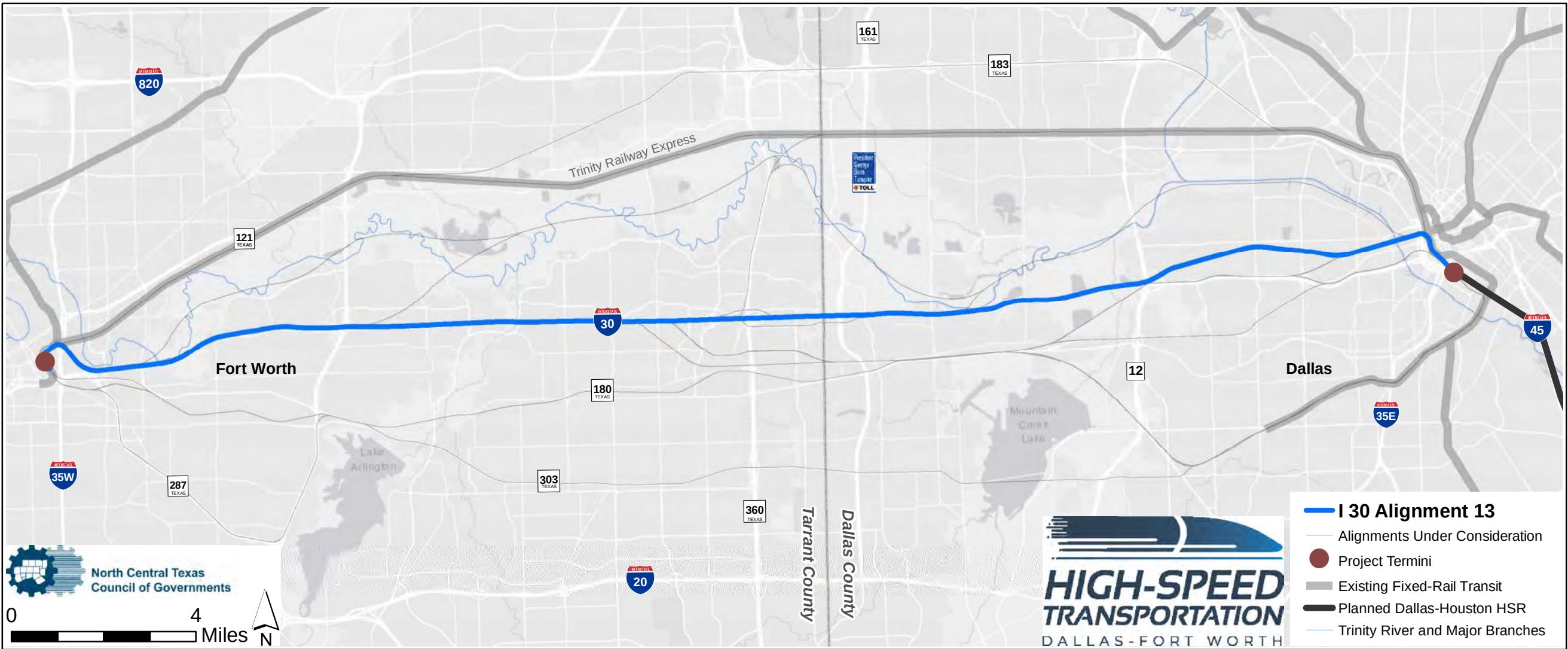


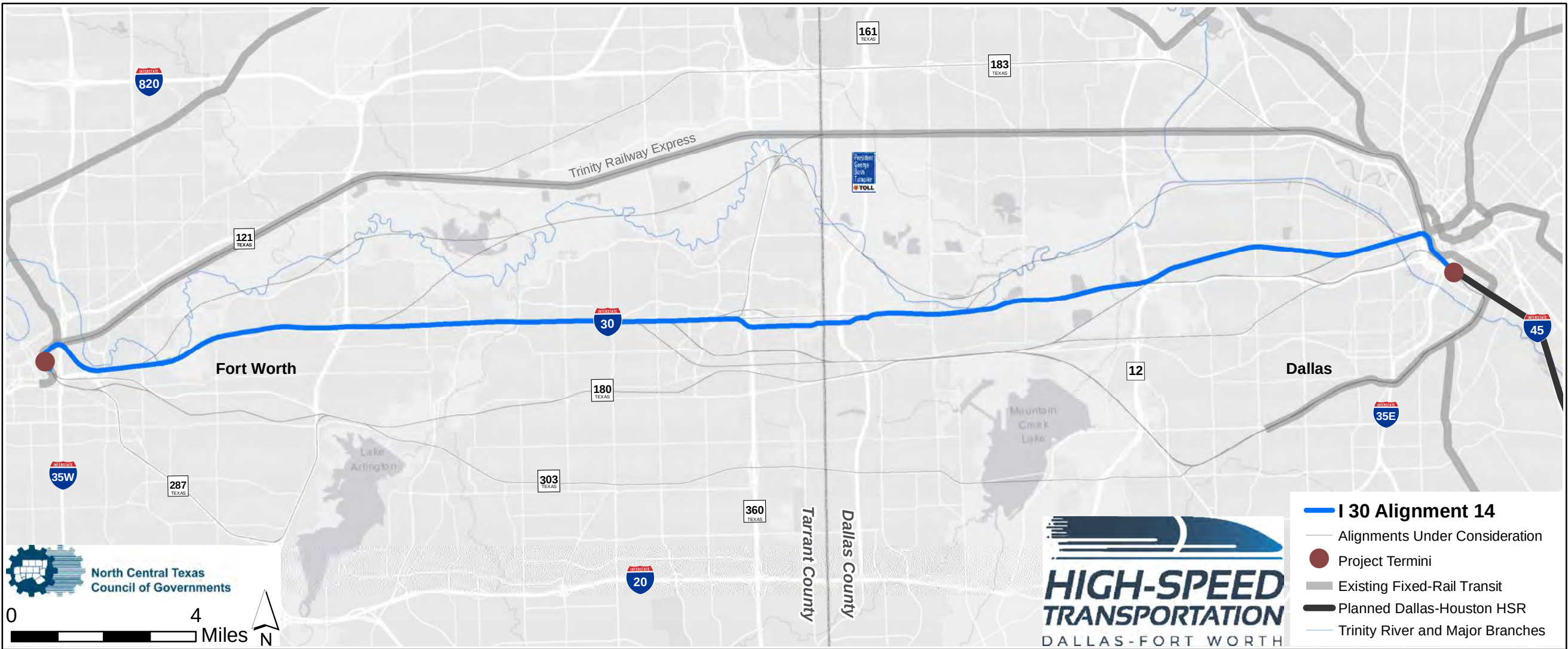


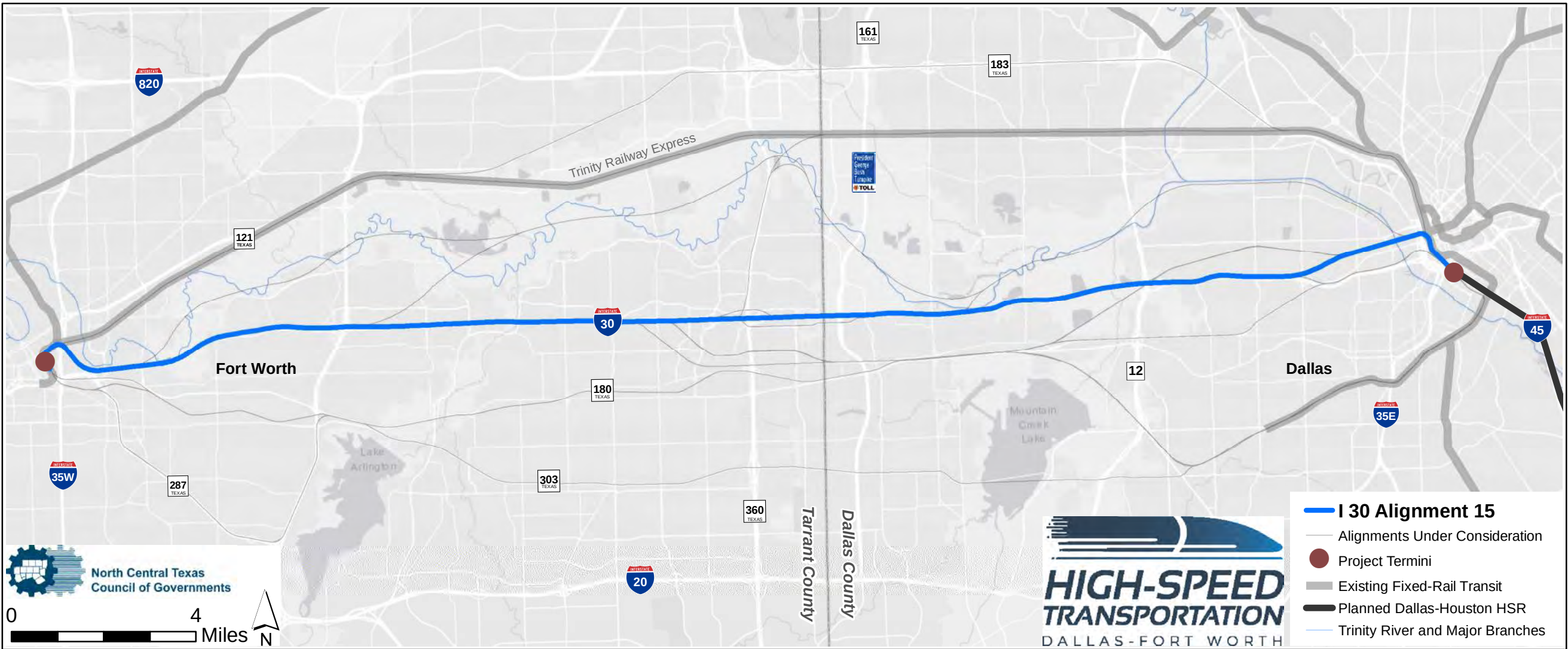


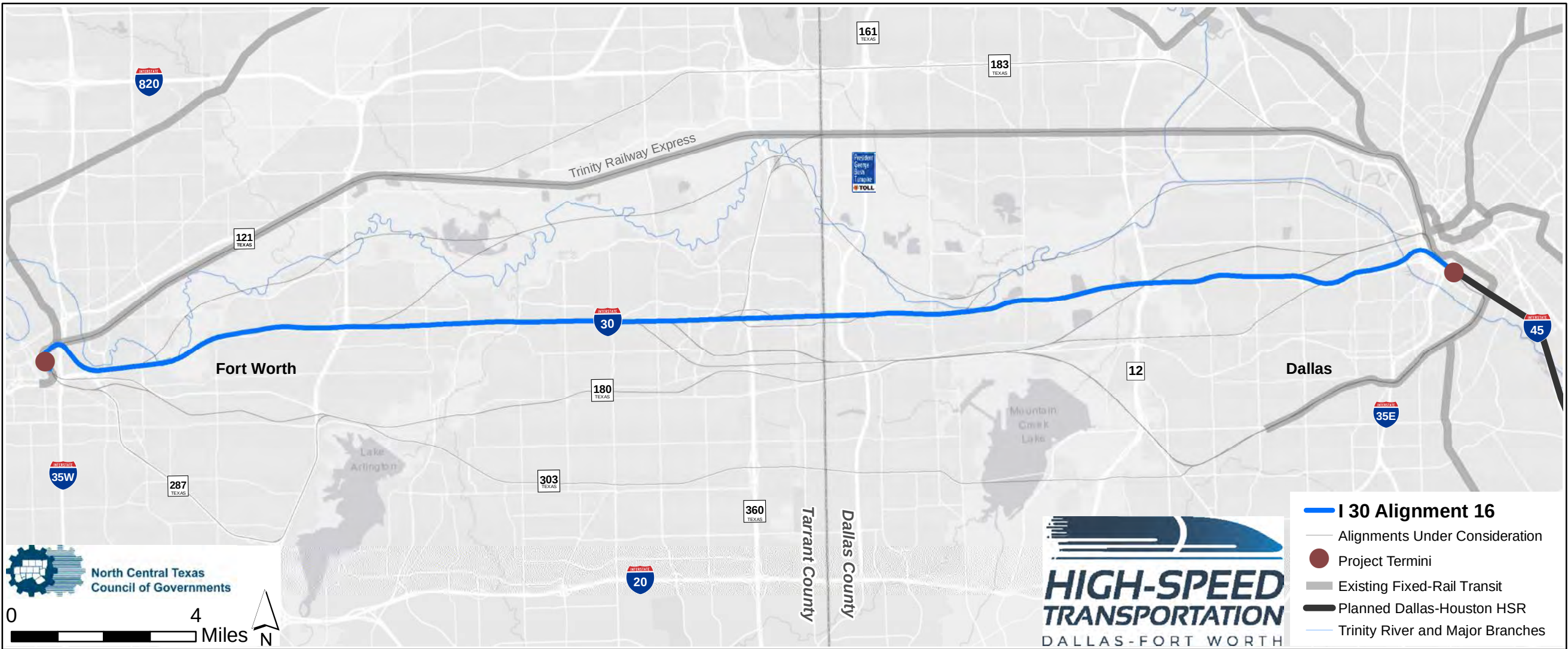


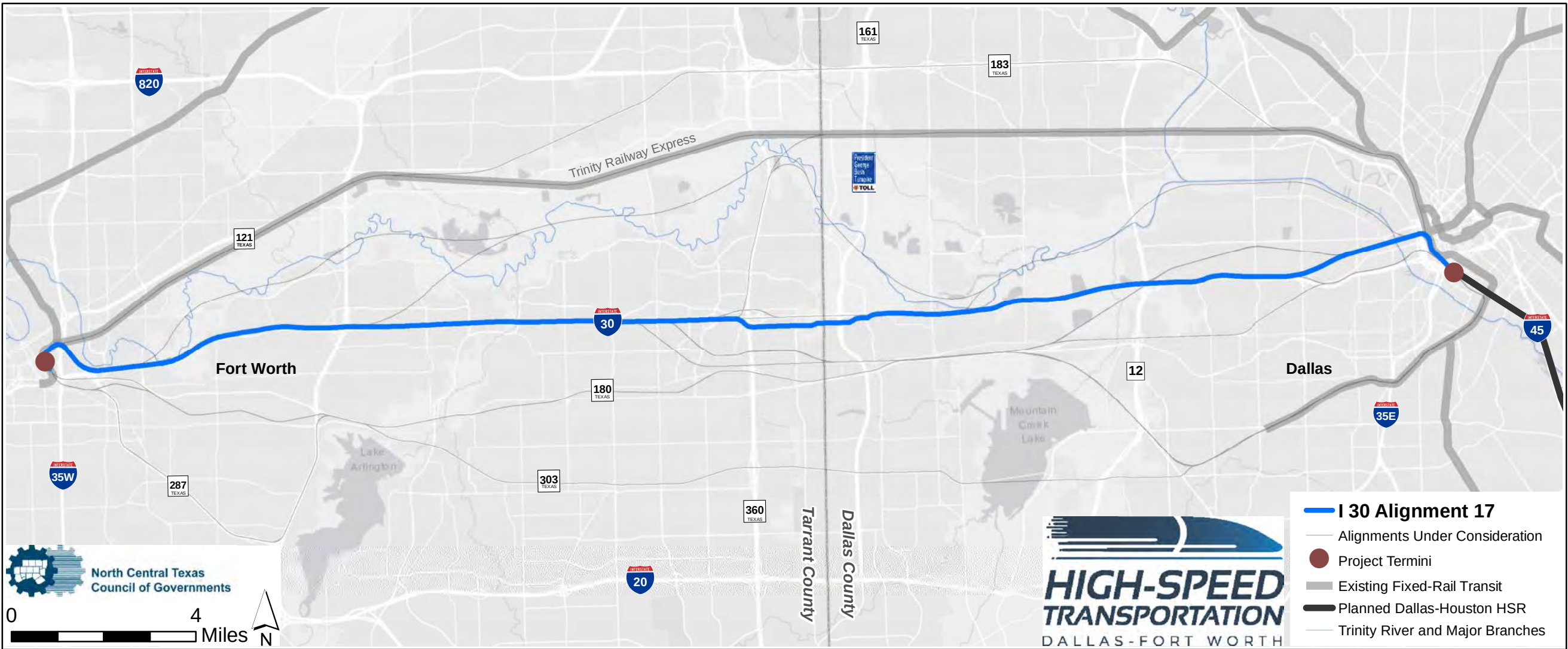


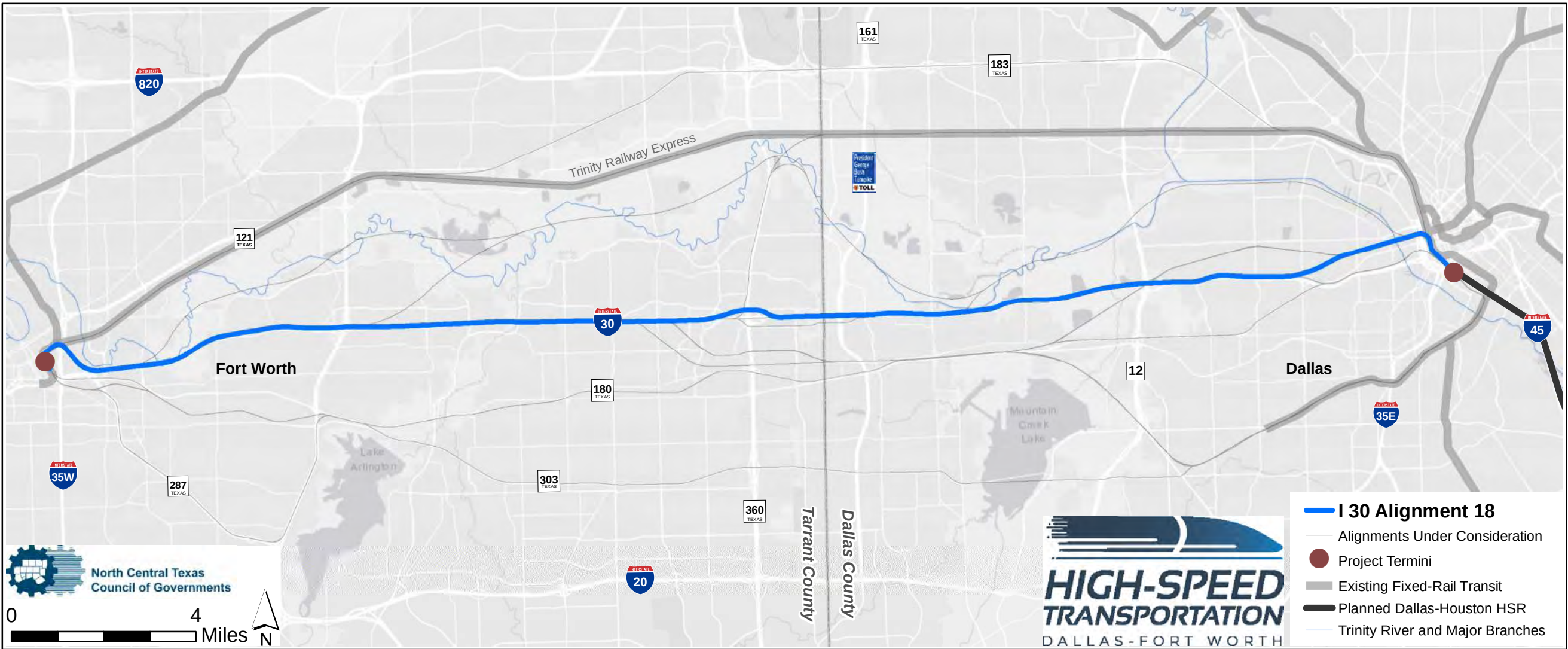


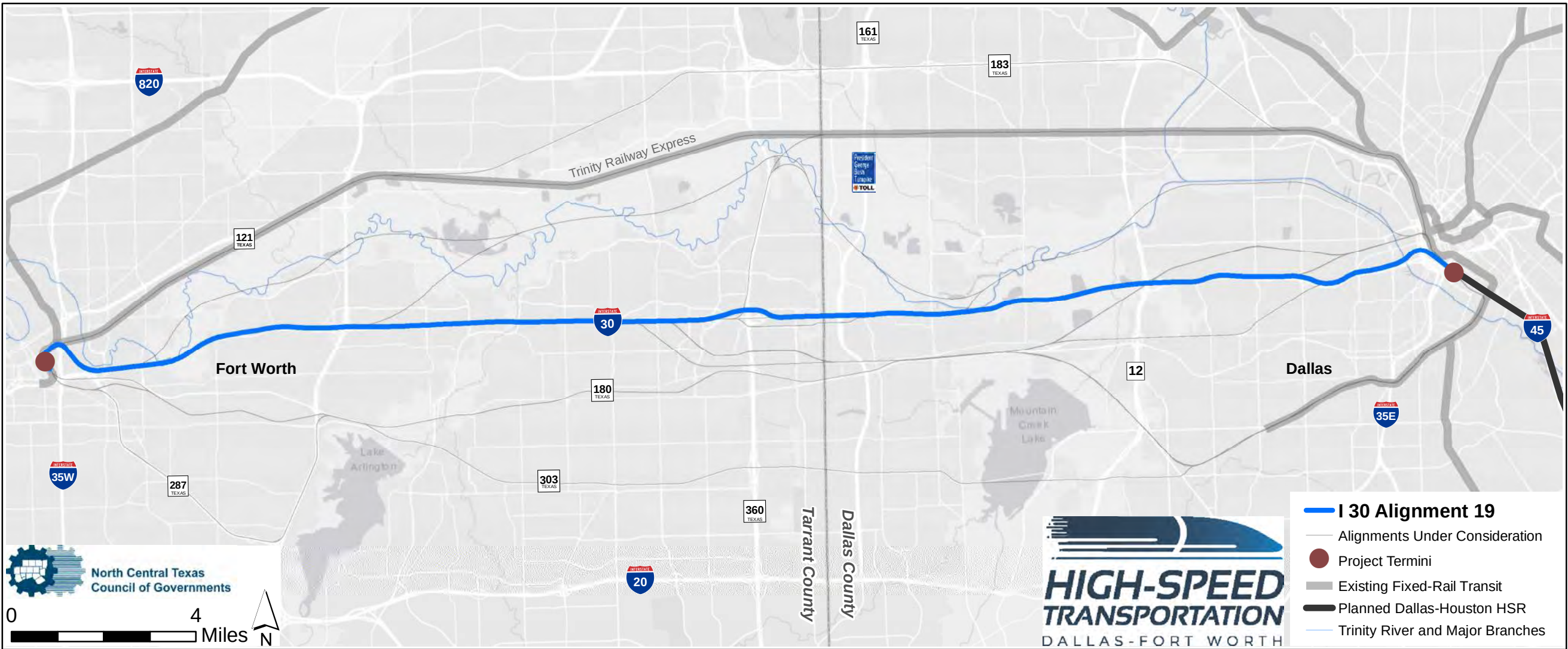


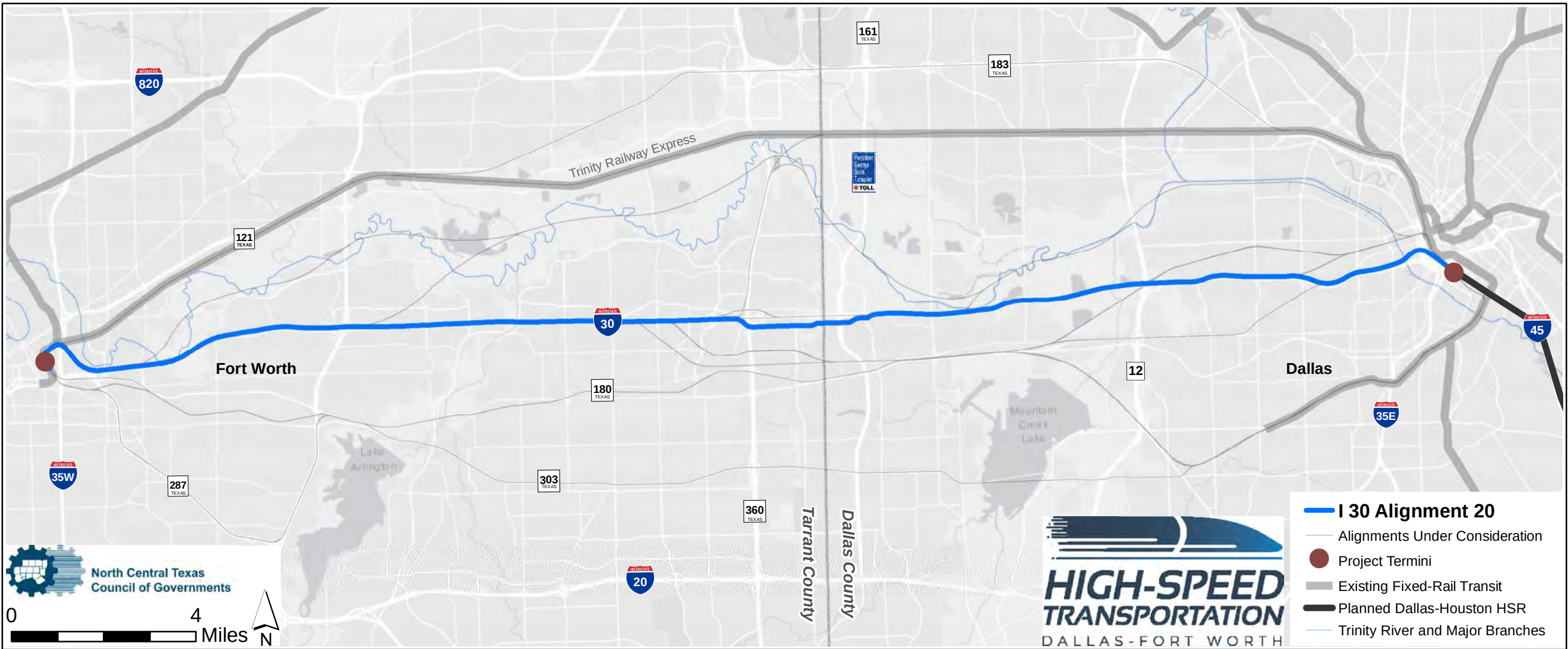


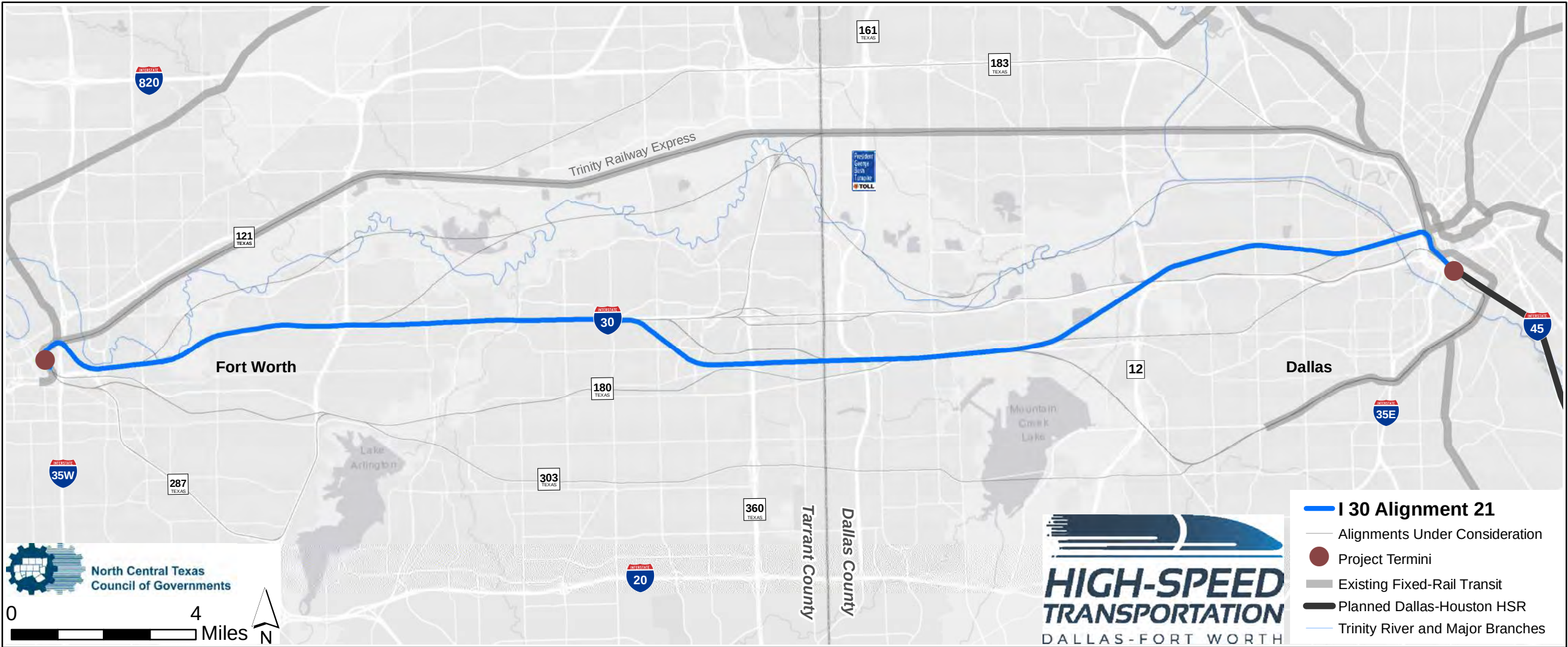


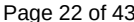


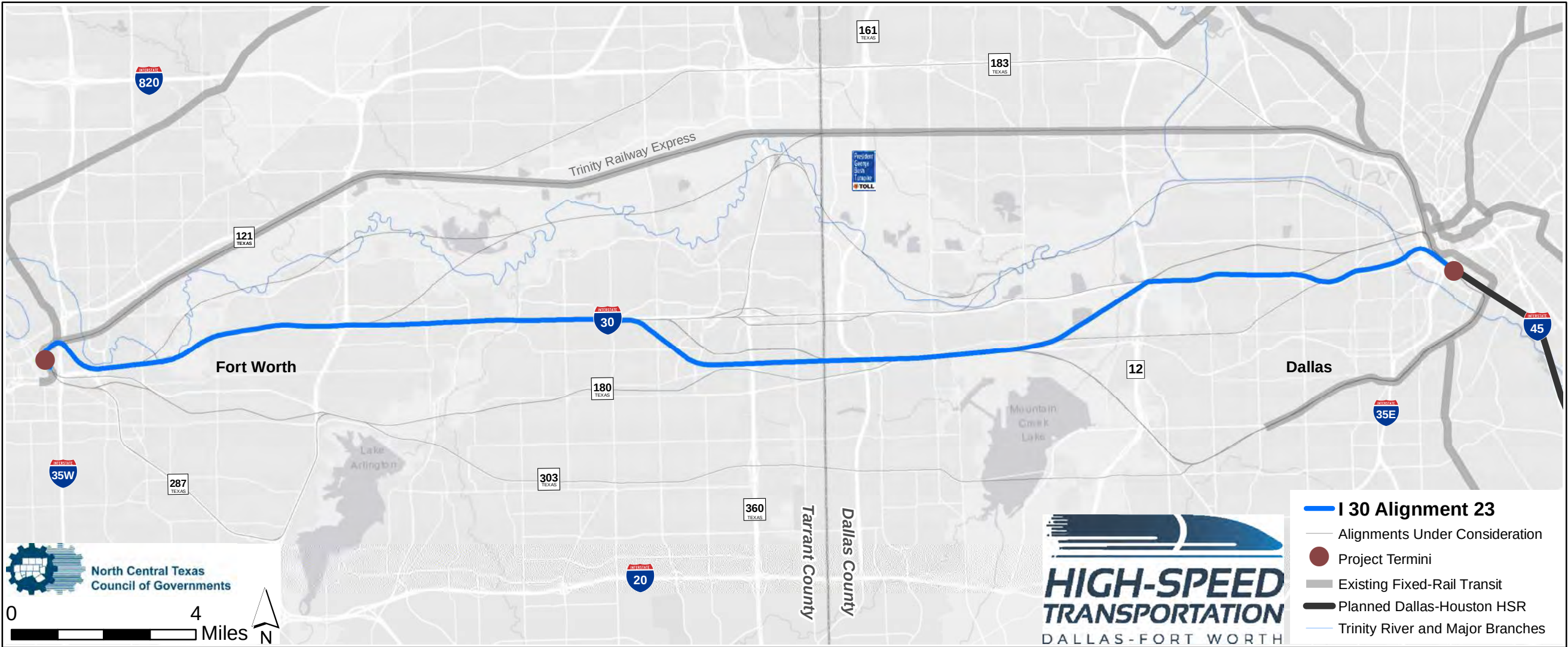


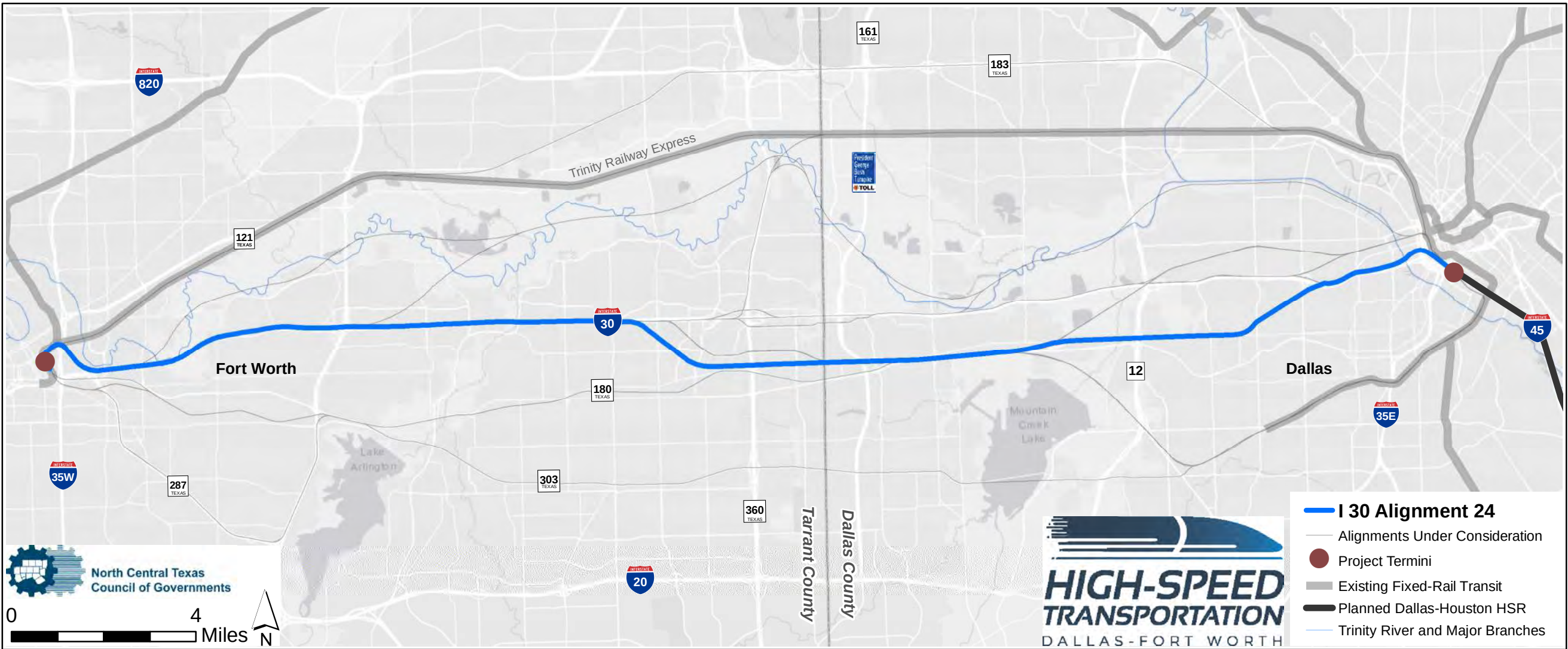


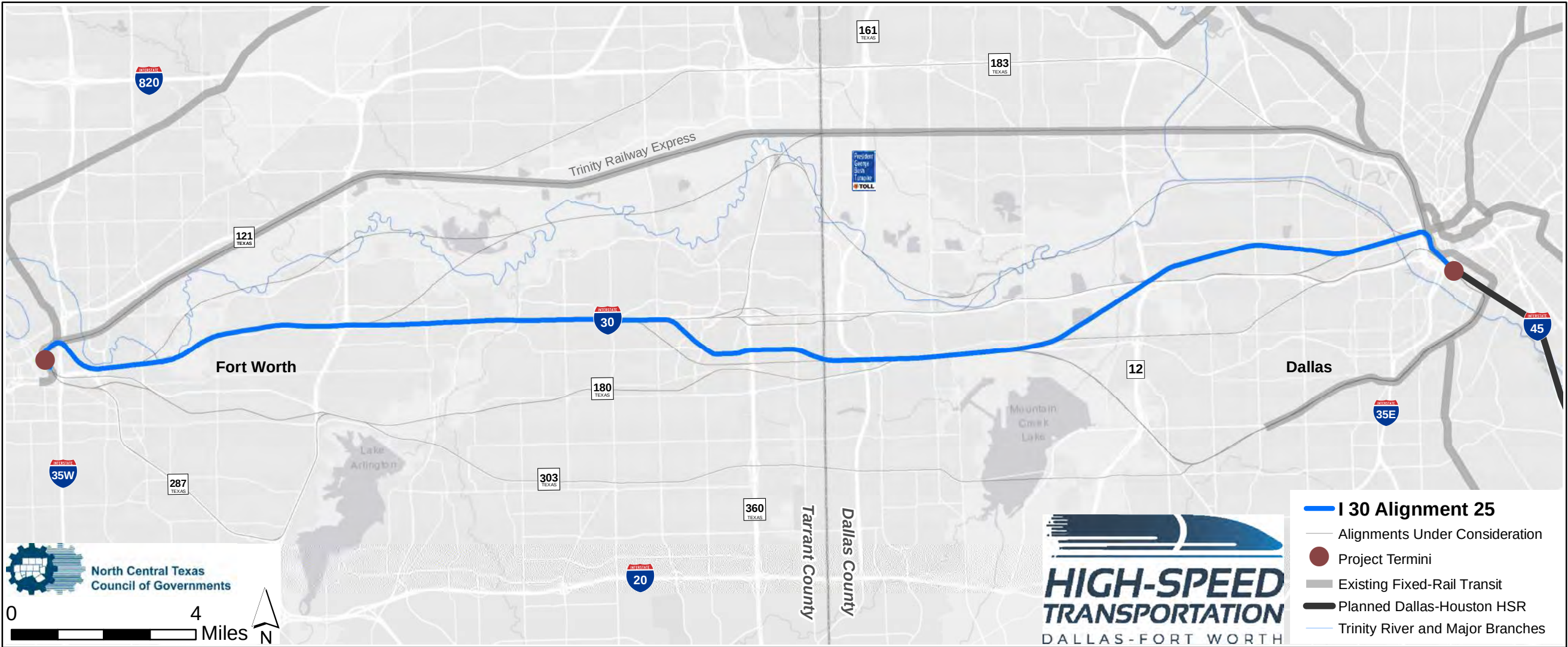


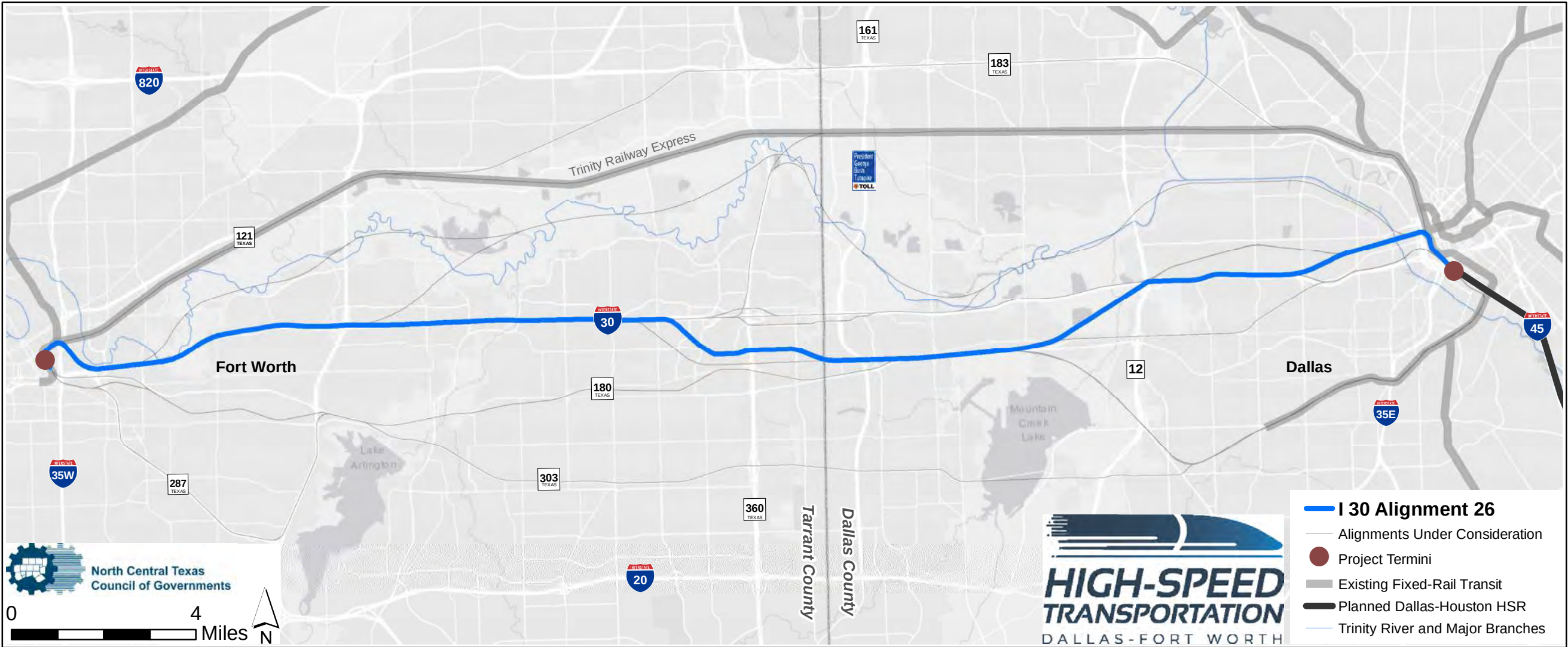


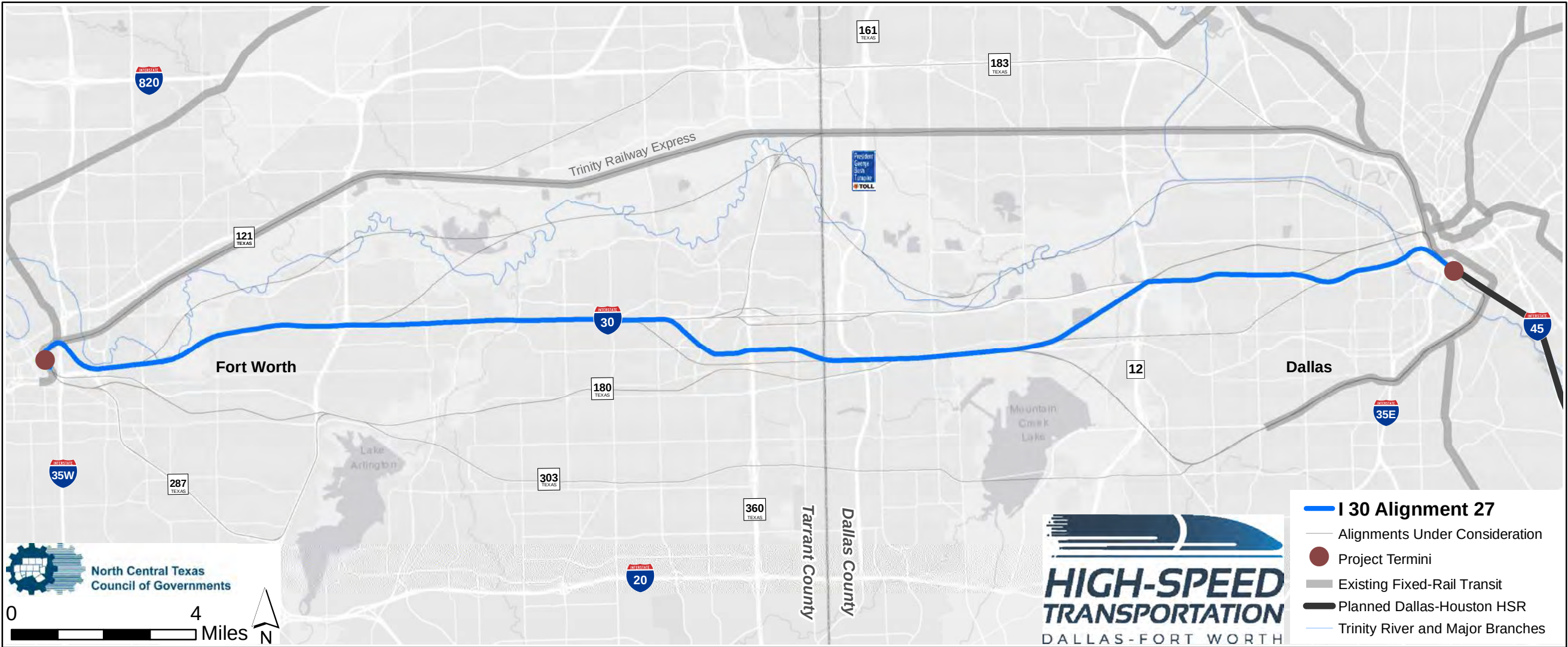


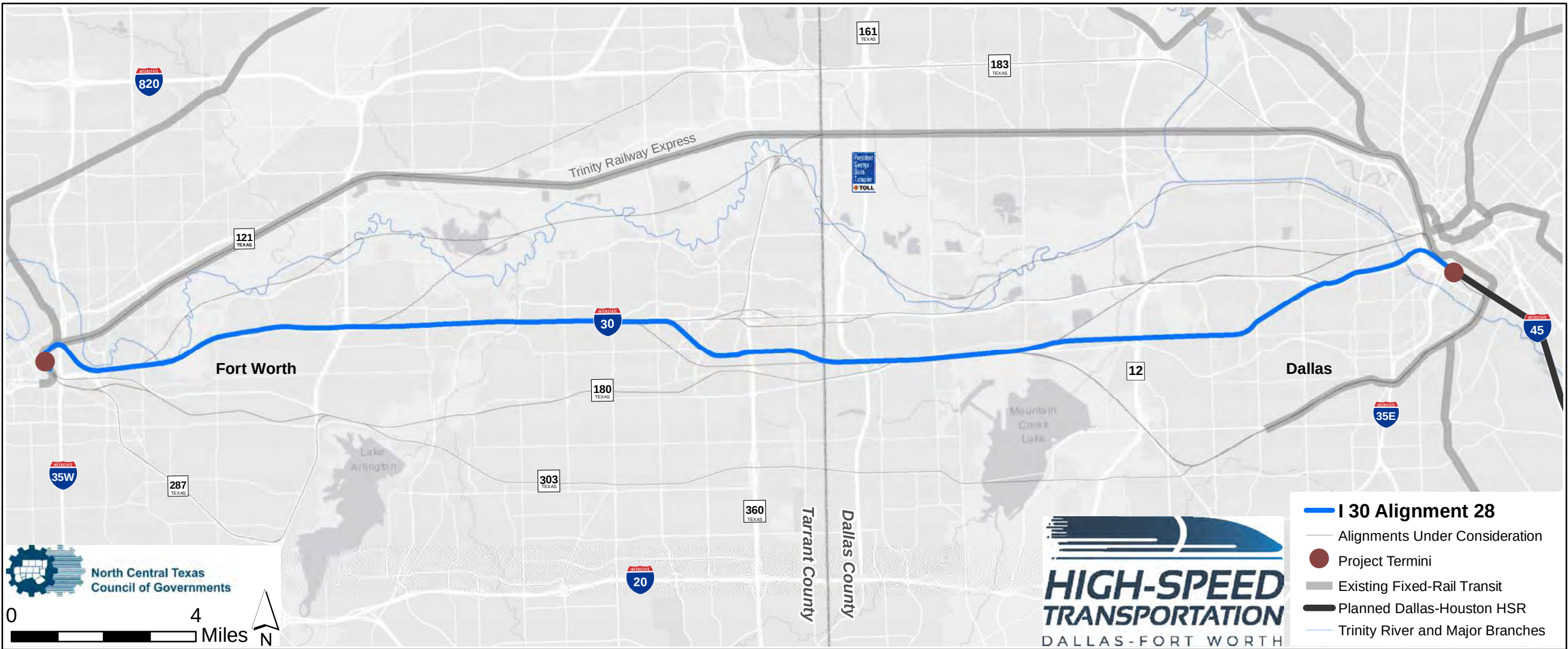


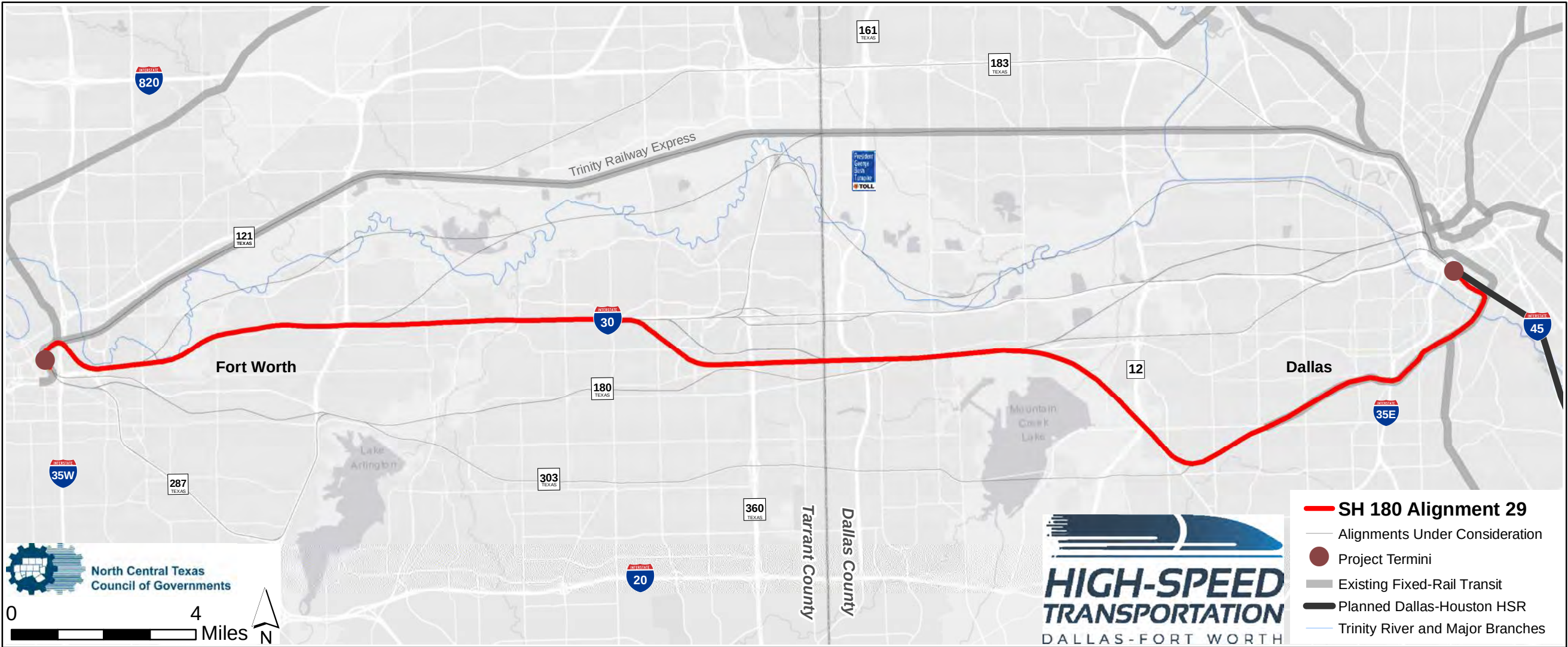


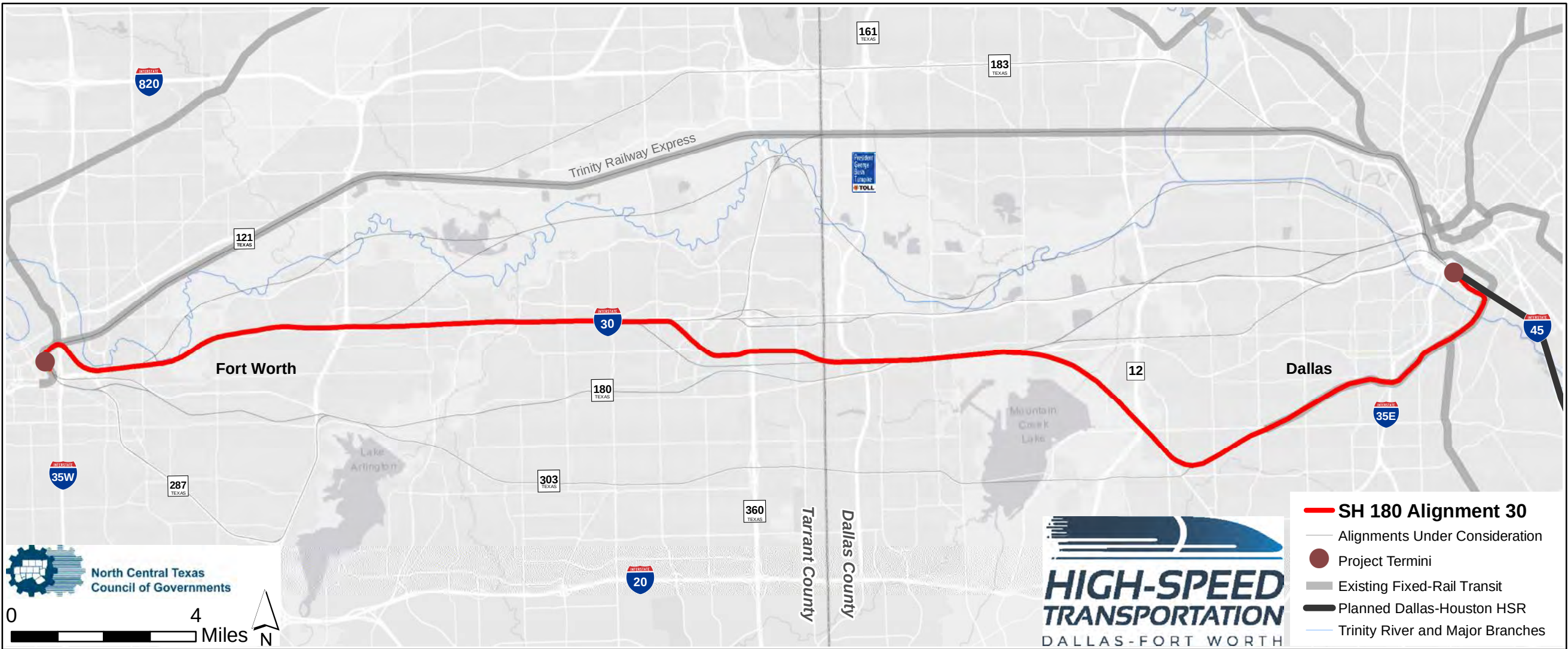


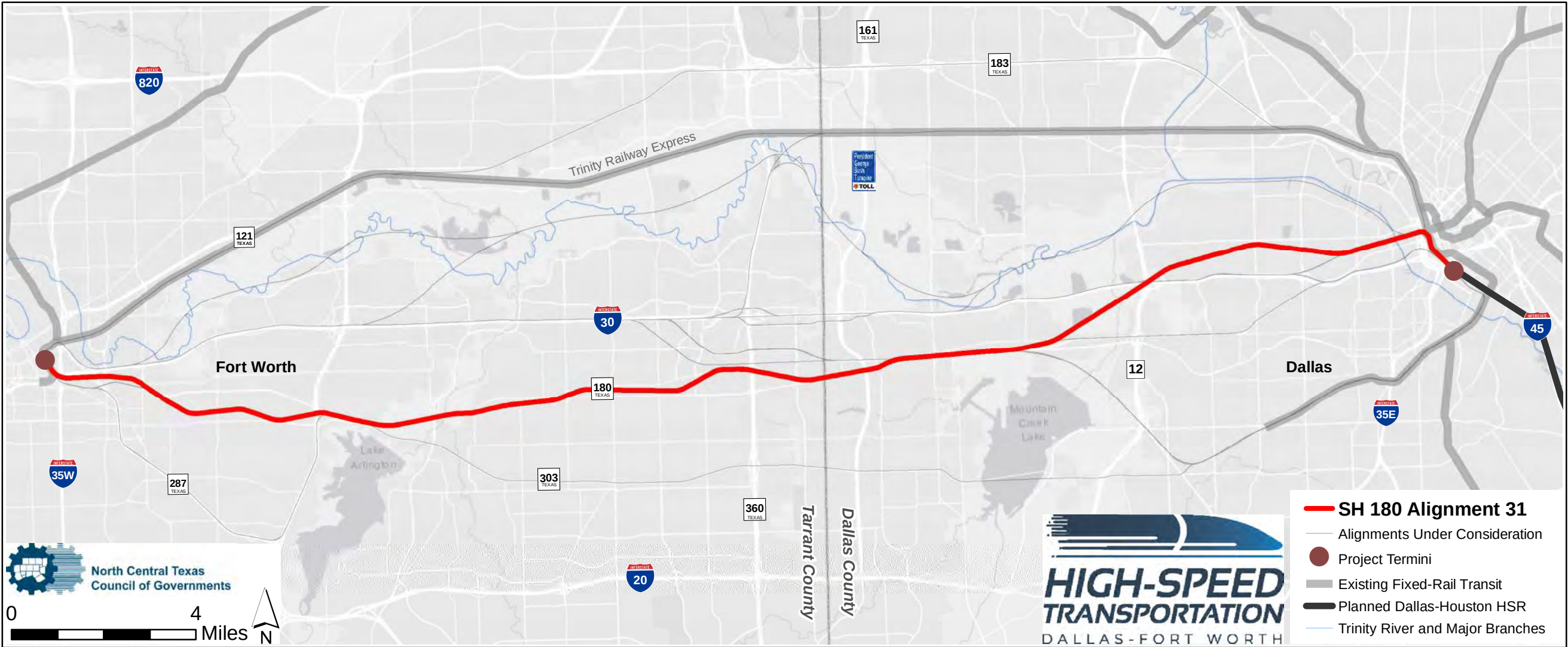




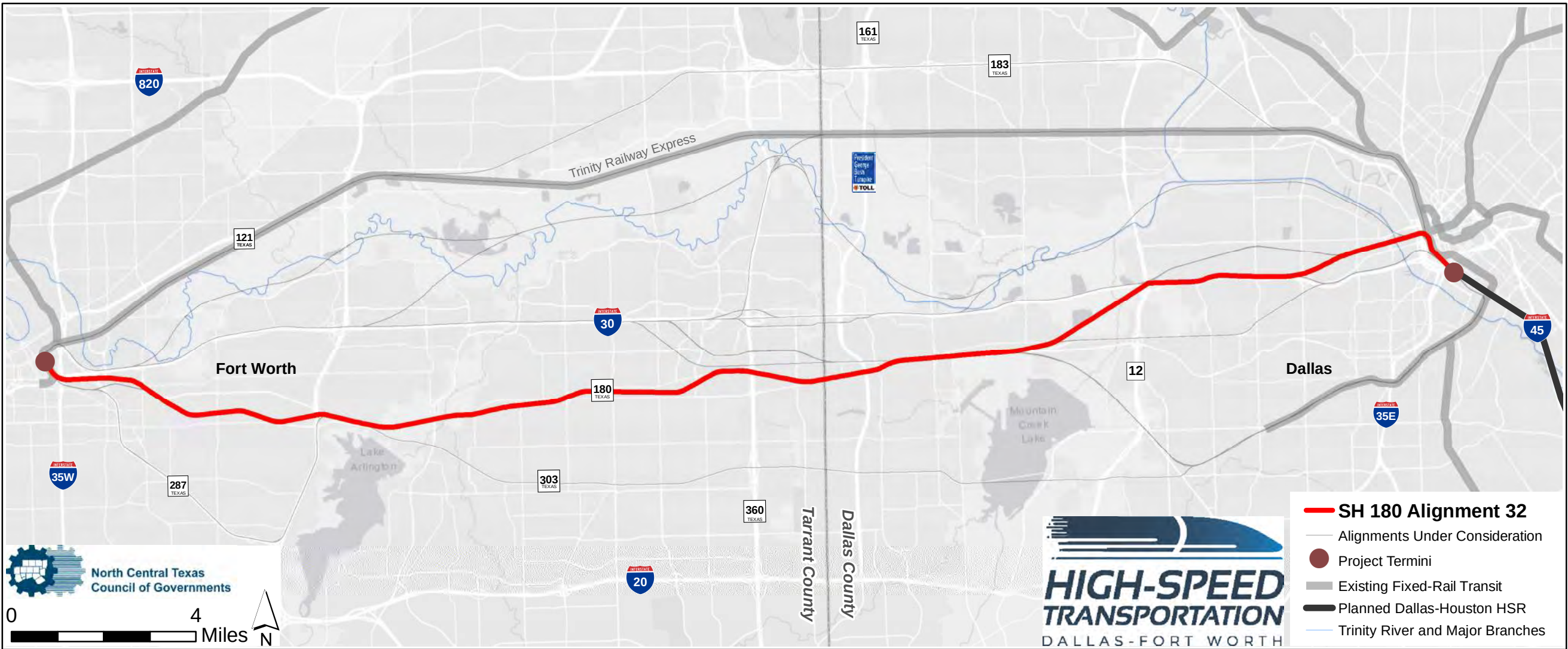


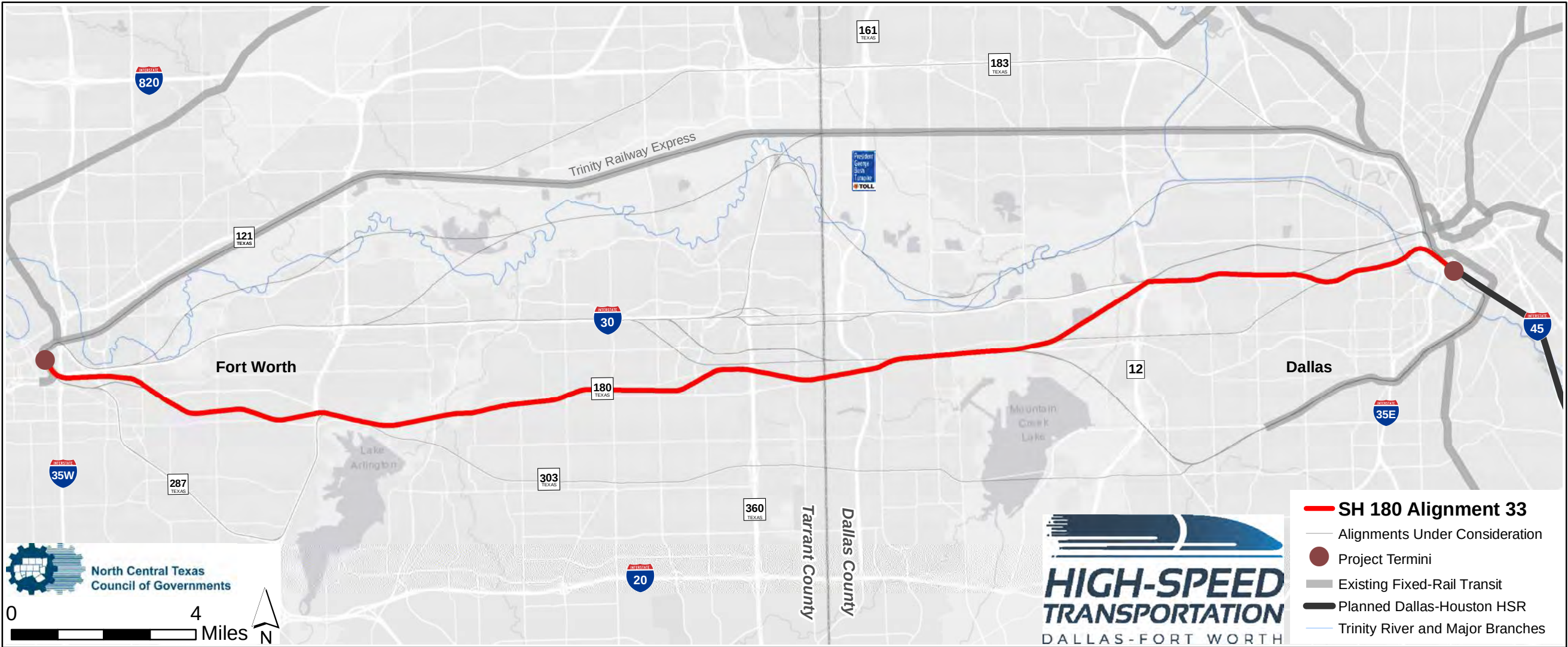






- SH 180 Alignment 31**
- Alignments Under Consideration
- Project Termini
- Existing Fixed-Rail Transit
- Planned Dallas-Houston HSR
- Trinity River and Major Branches





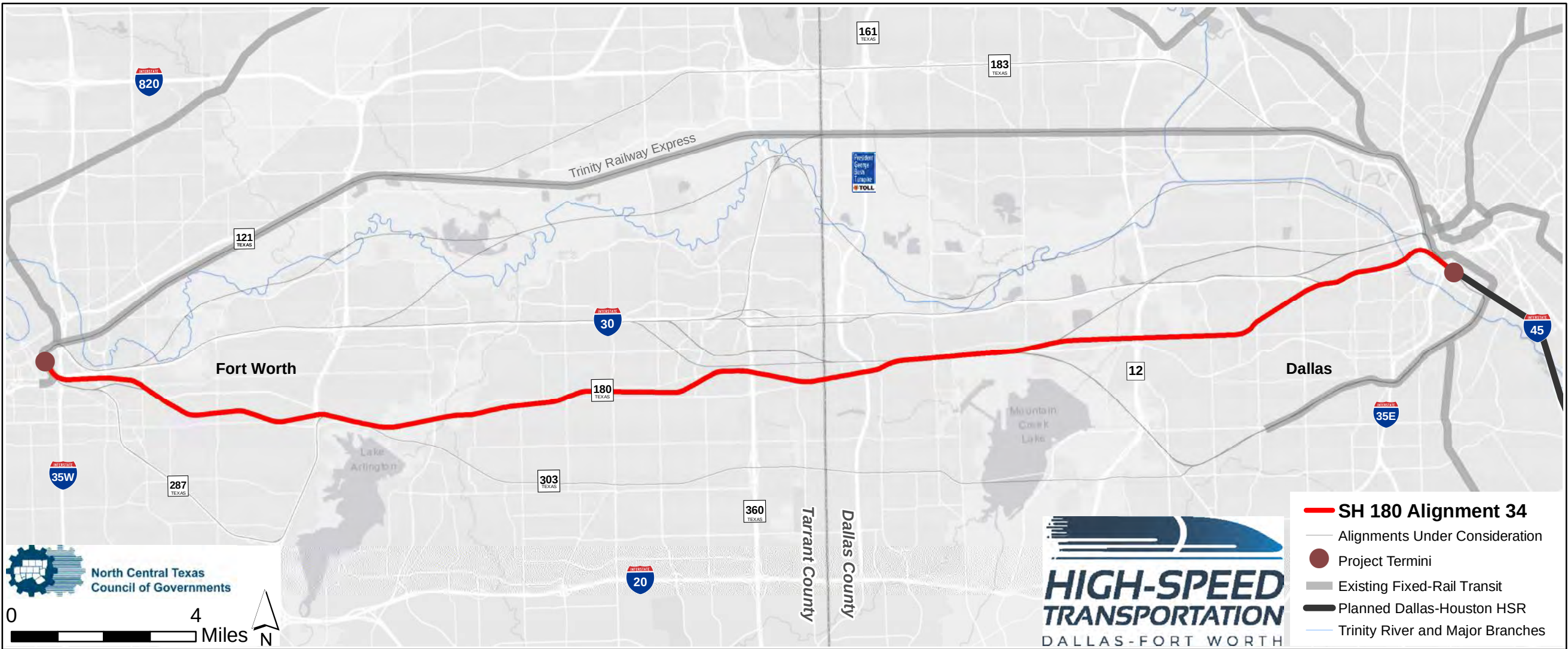
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- Project Termini
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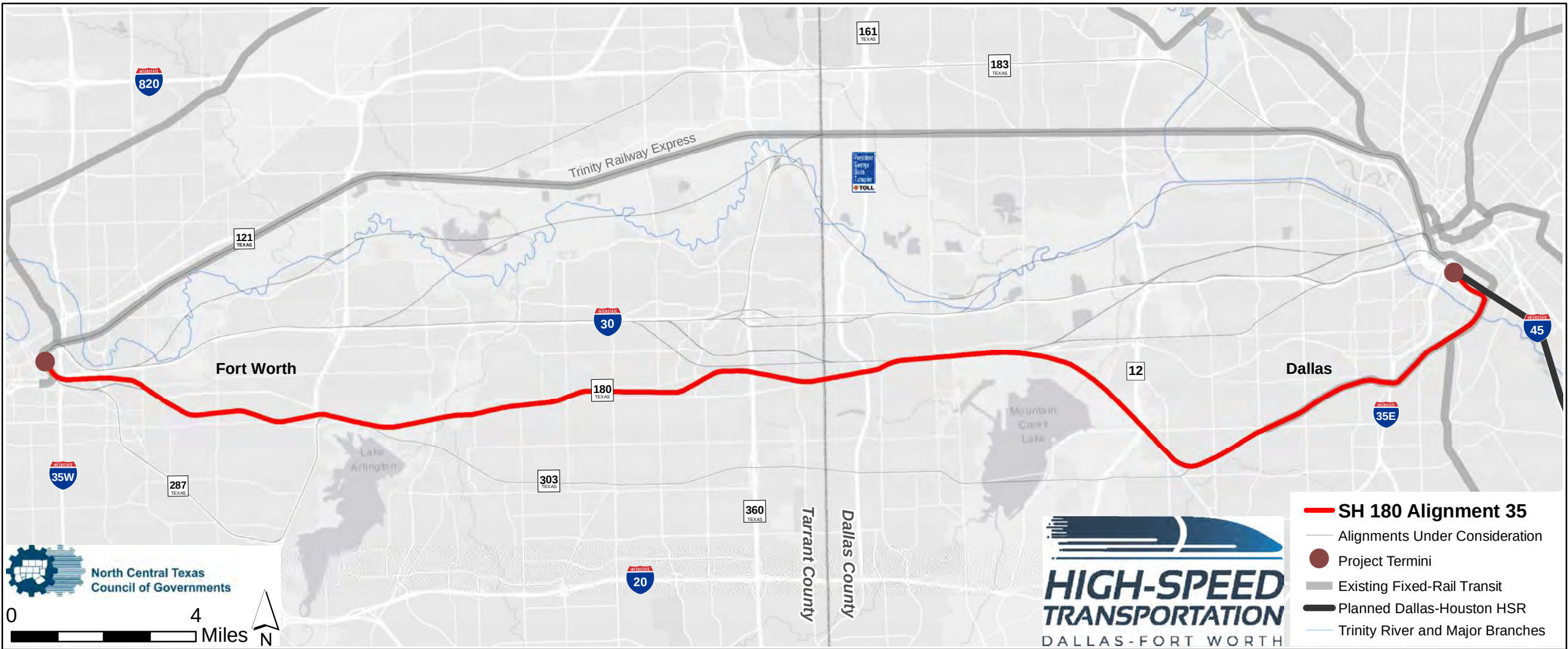
North Central Texas Council of Governments

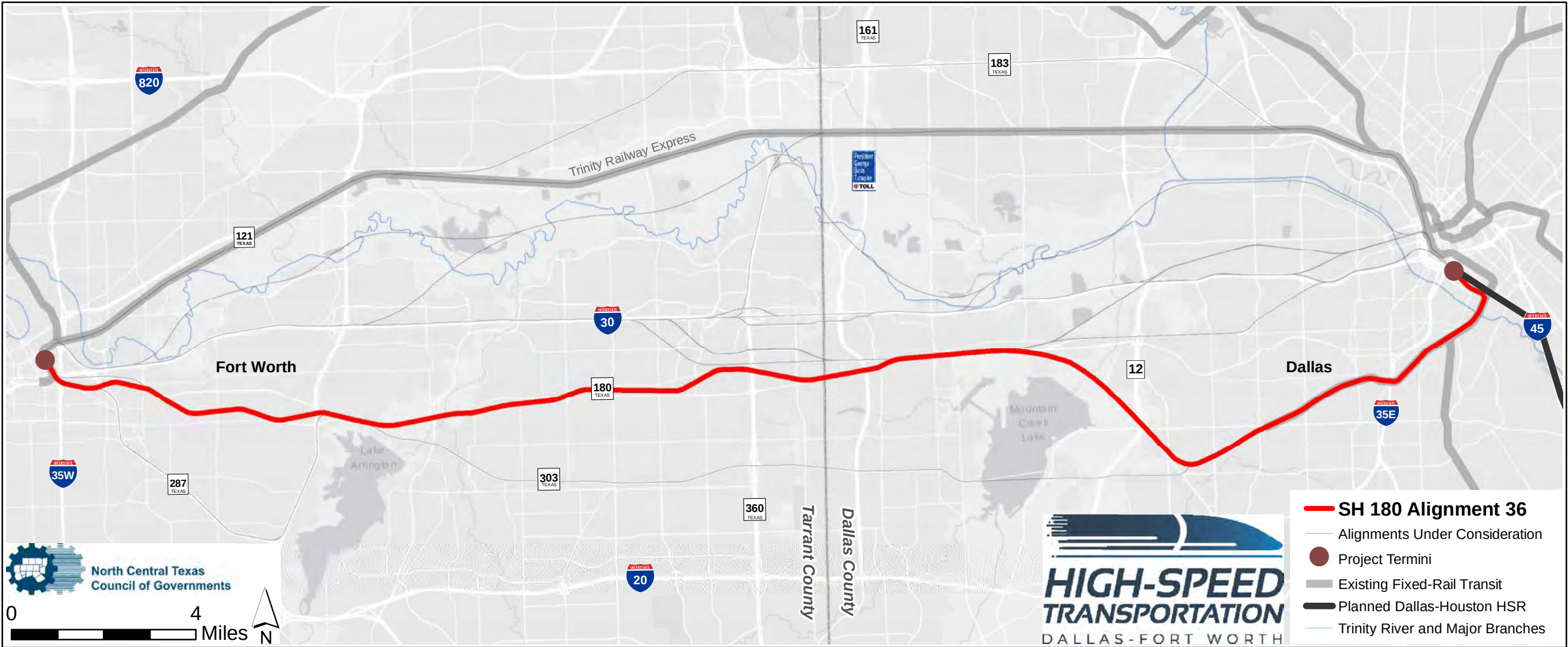
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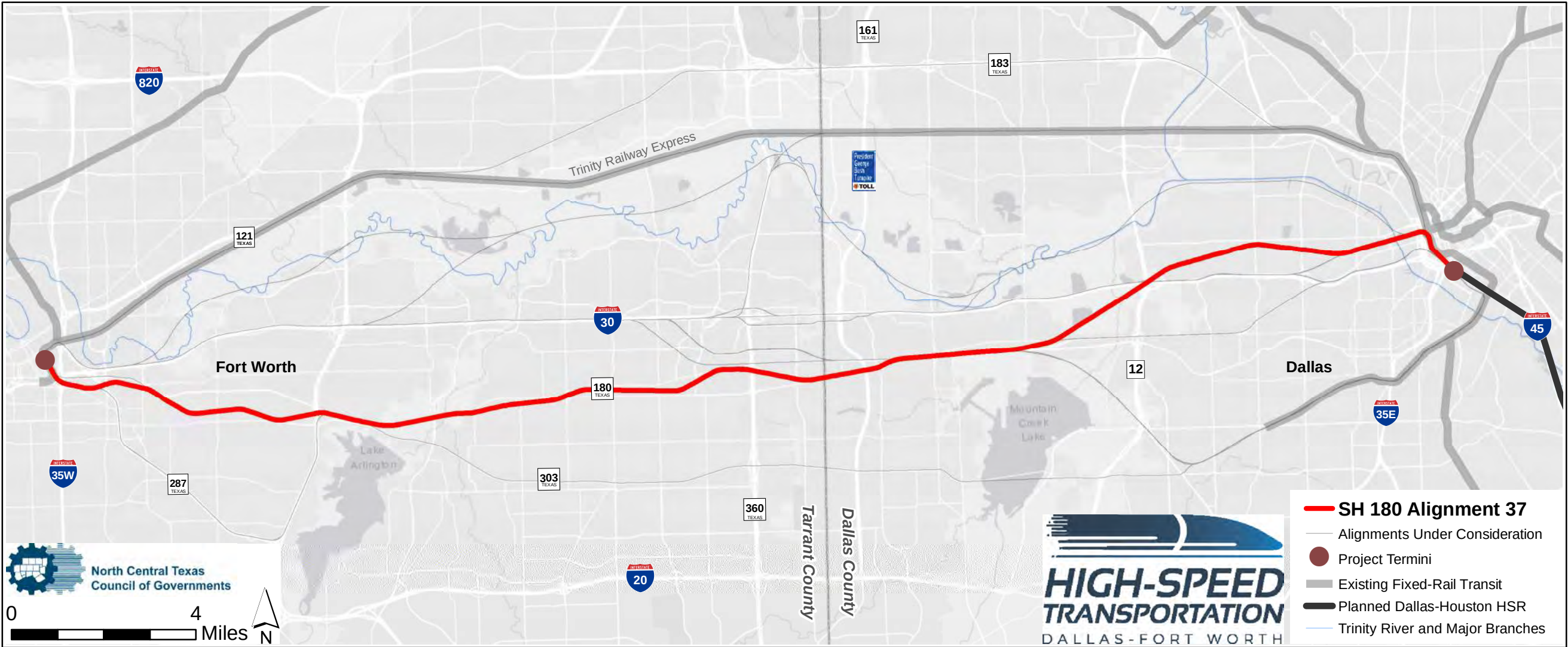
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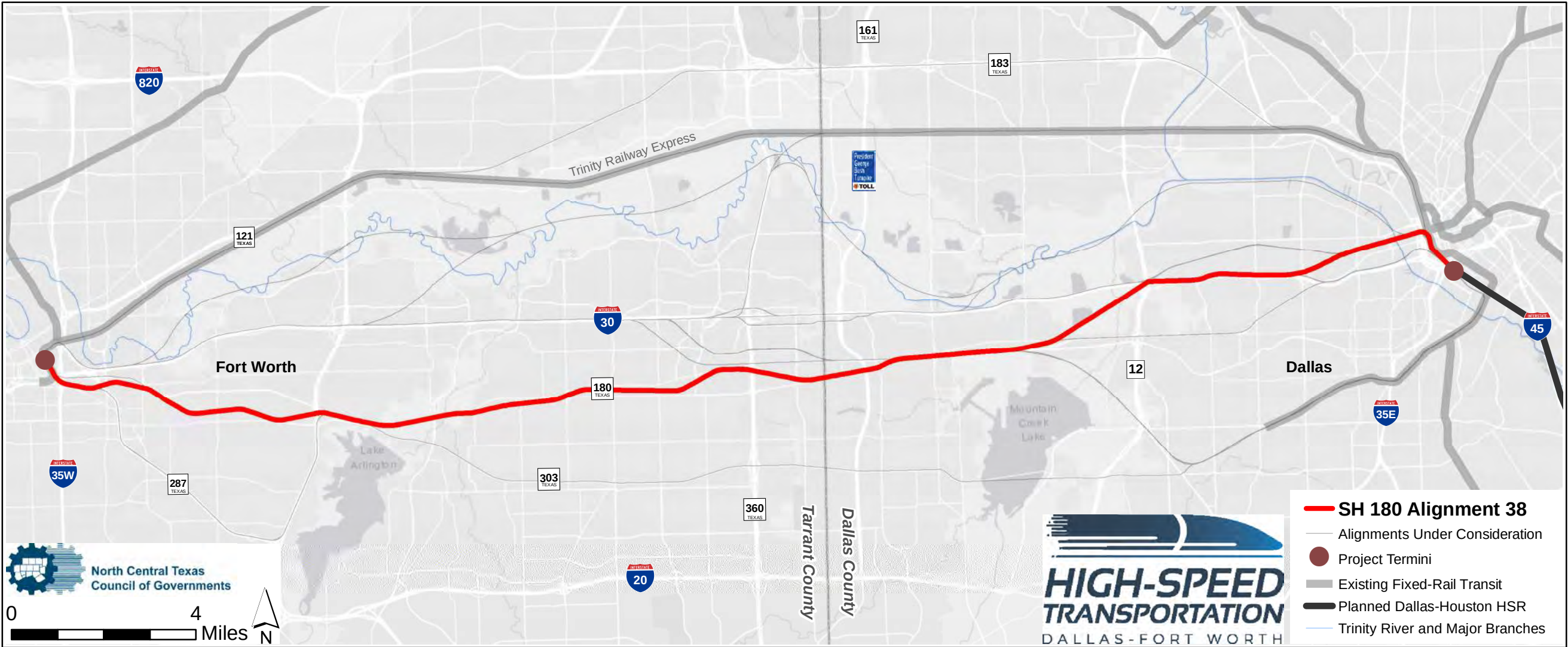


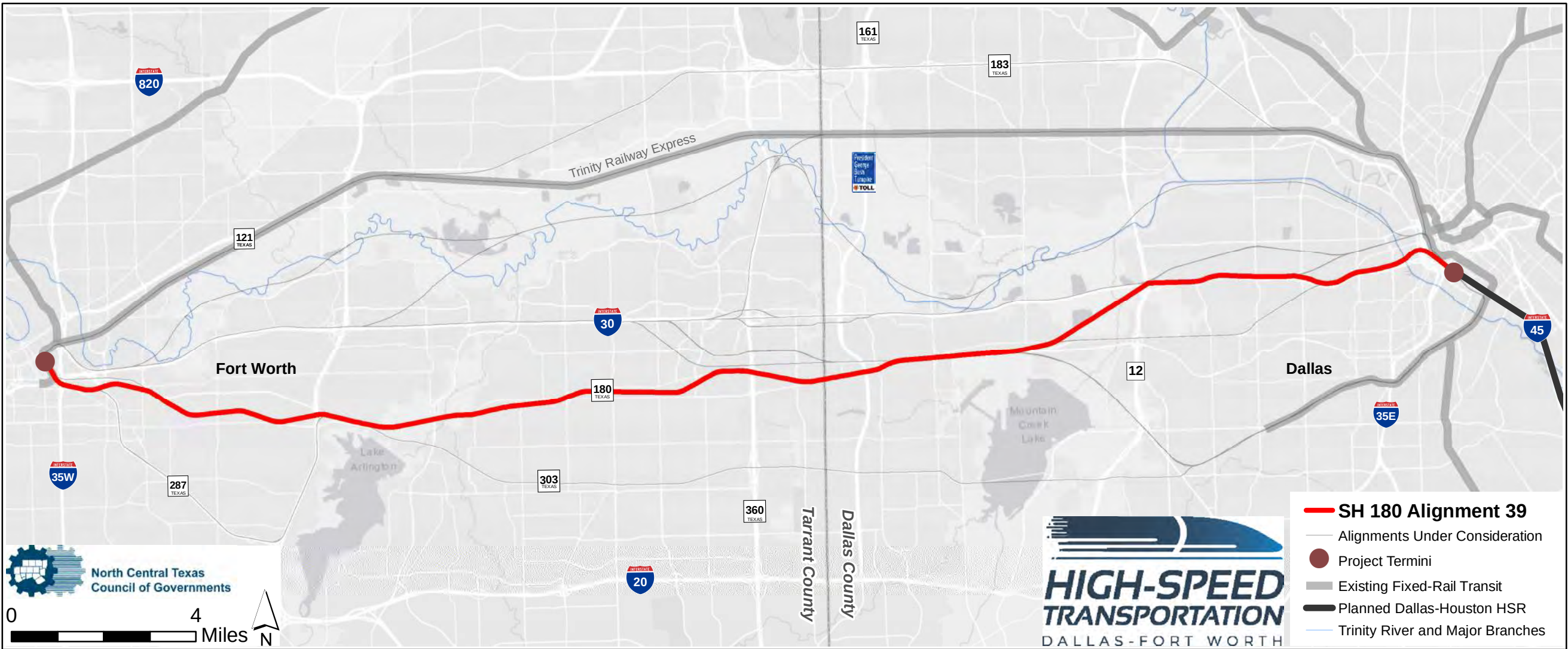






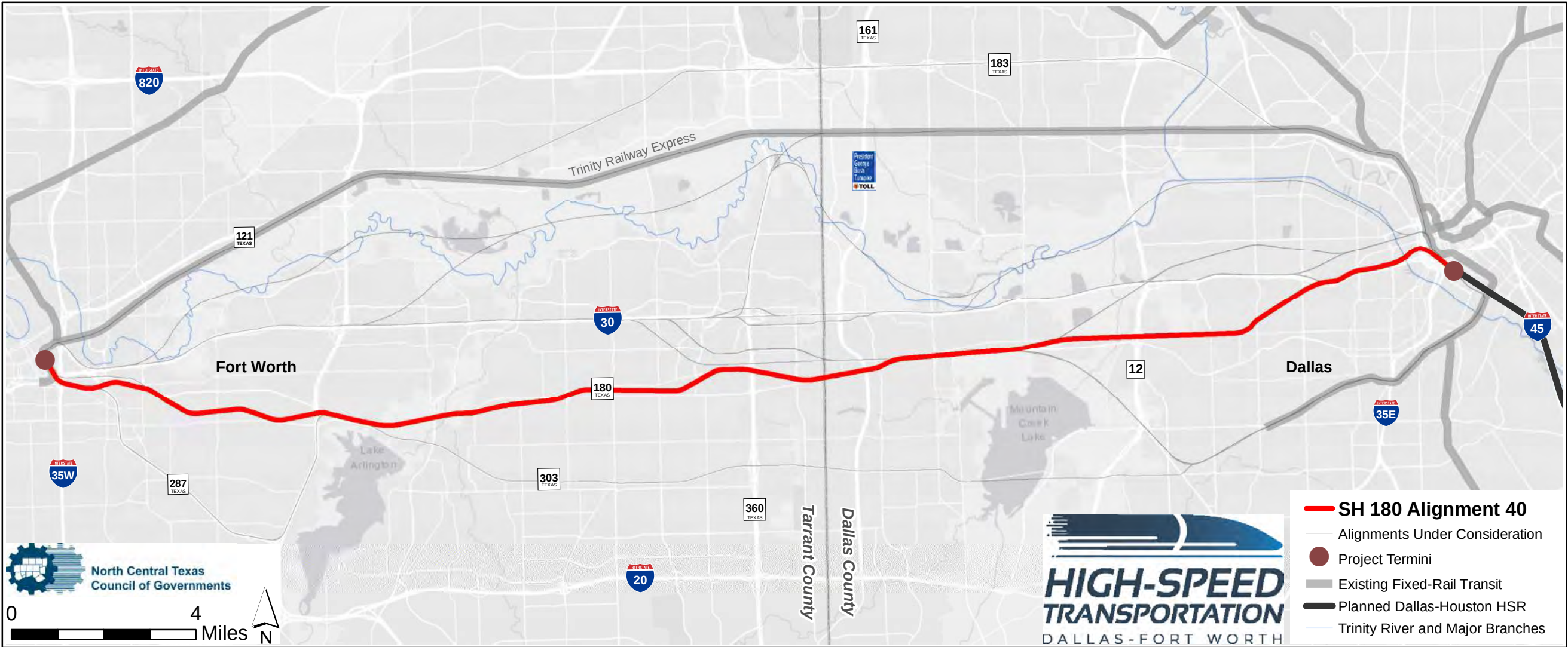


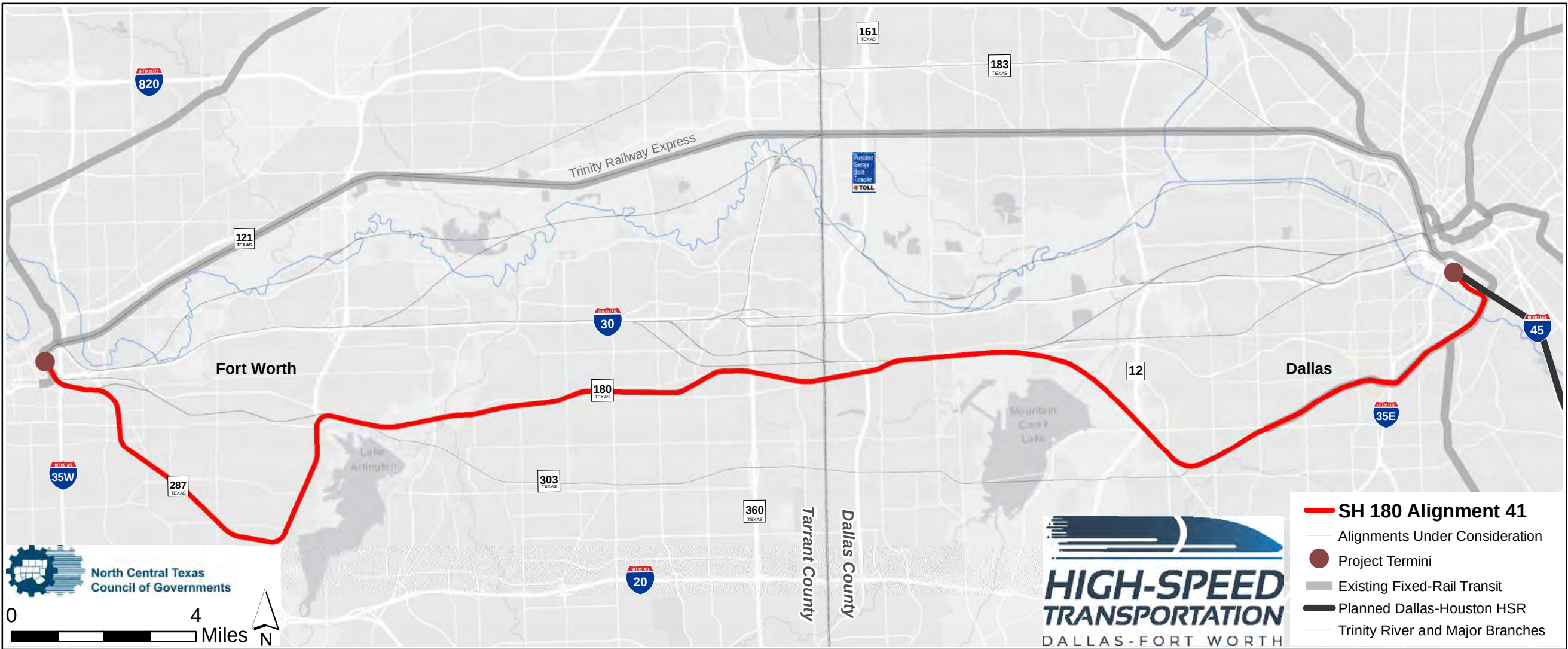


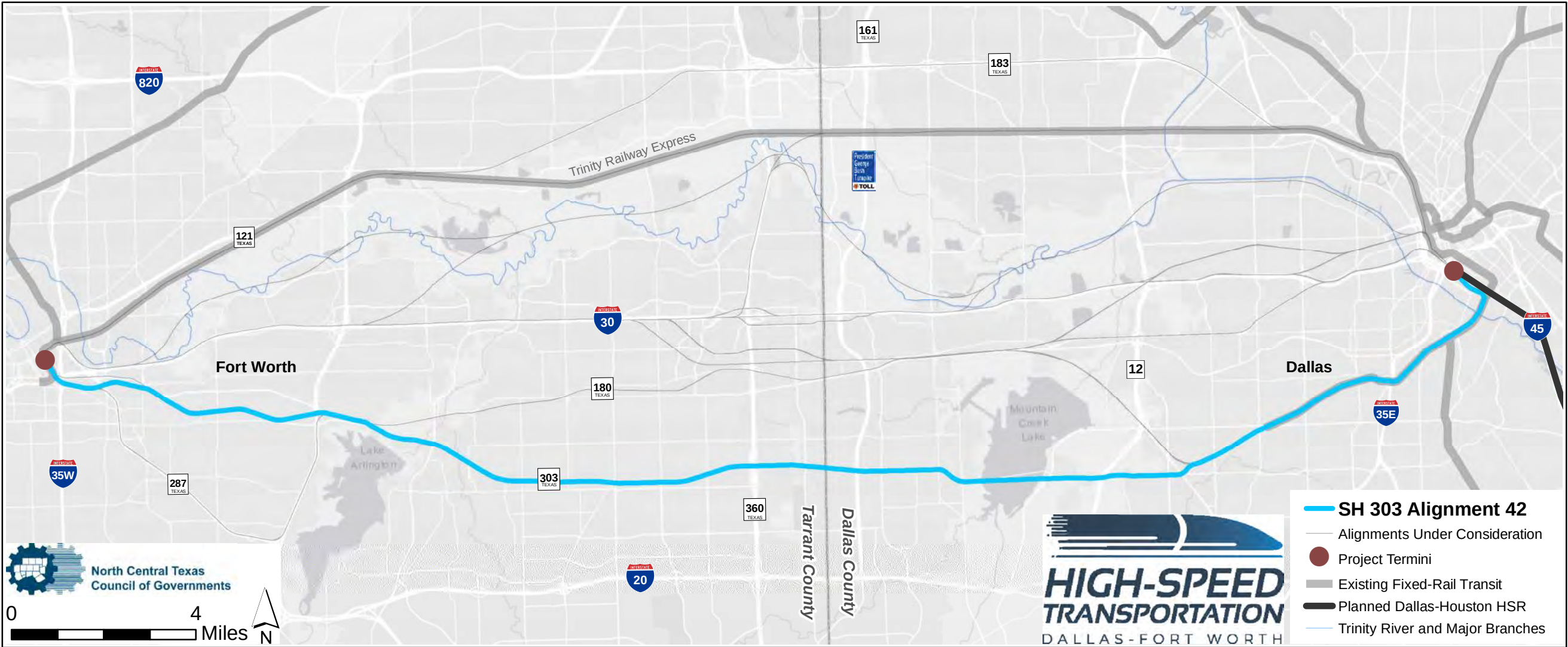


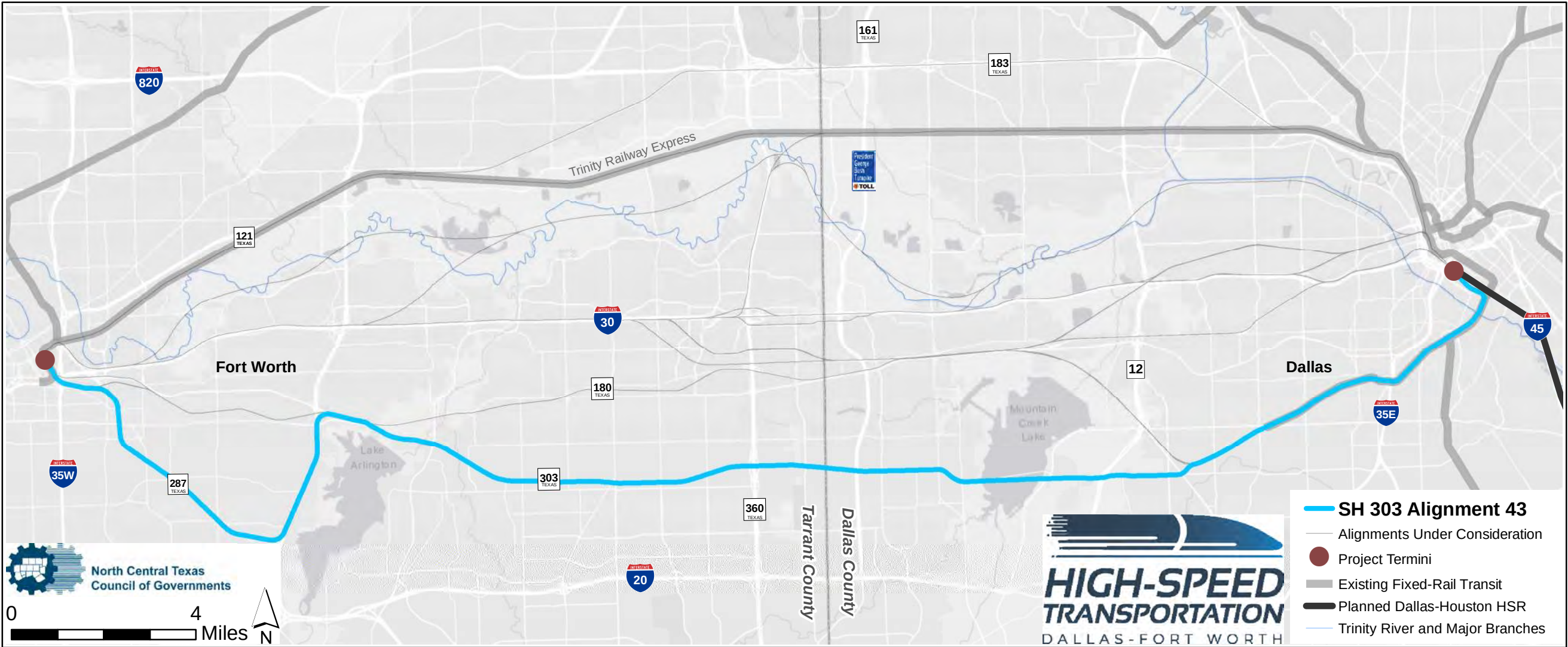
- SH 180 Alignment 39**
- Alignments Under Consideration
- Project Termini
- Existing Fixed-Rail Transit
- Planned Dallas-Houston HSR
- Trinity River and Major Branches







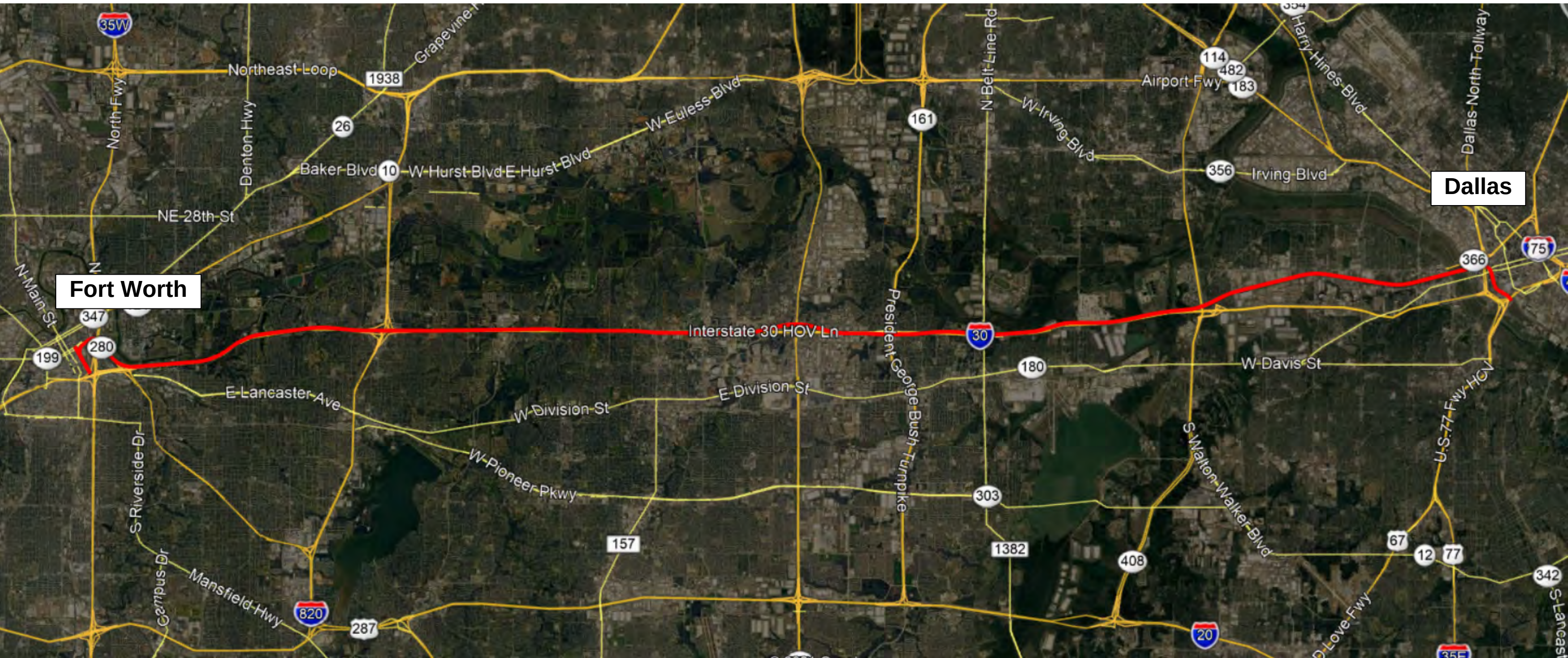




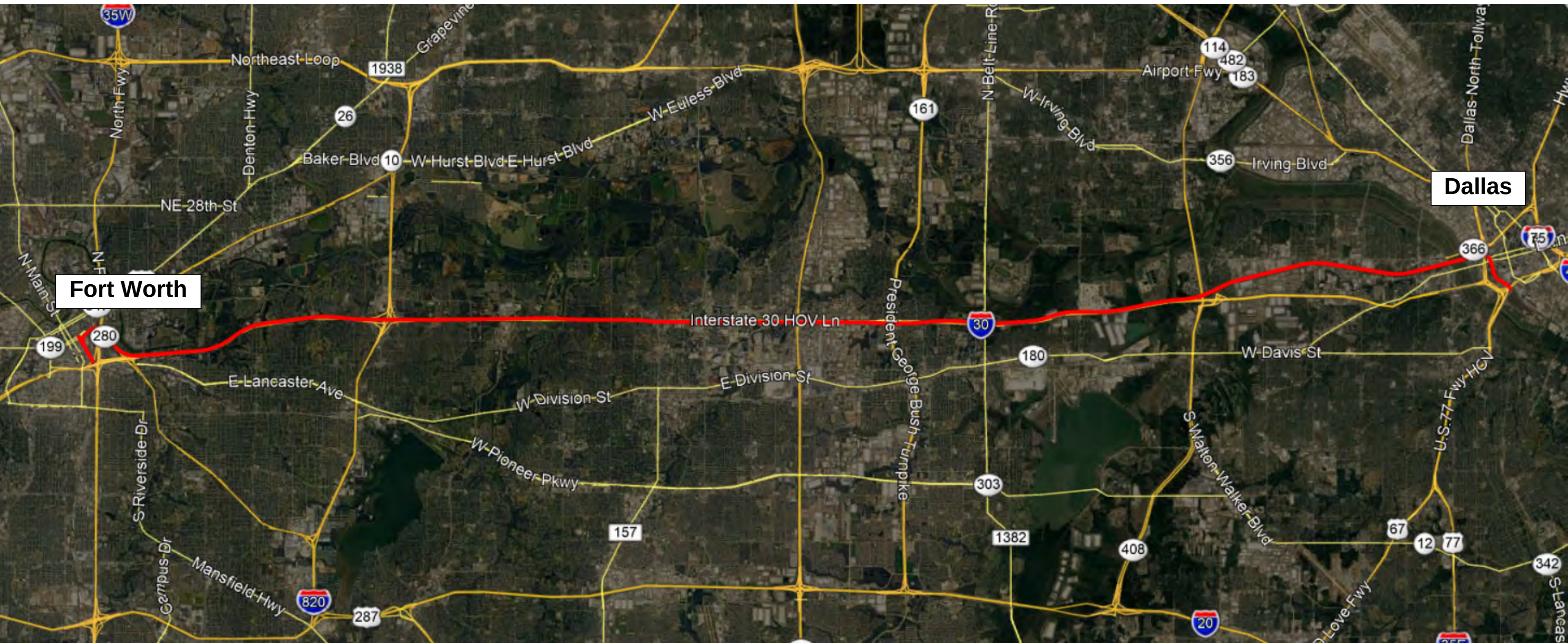
Appendix B

Level 3 Alignment Maps

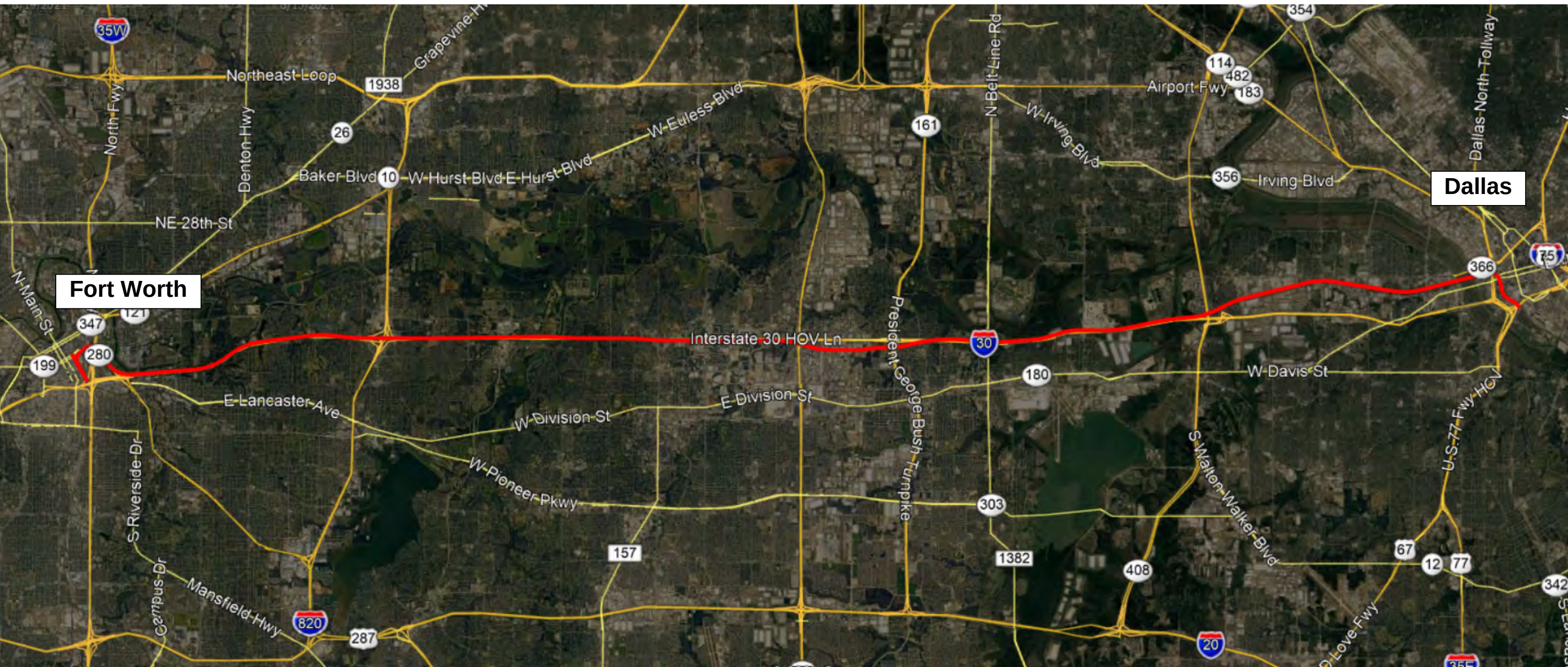
Alignment 12



Alignment 13



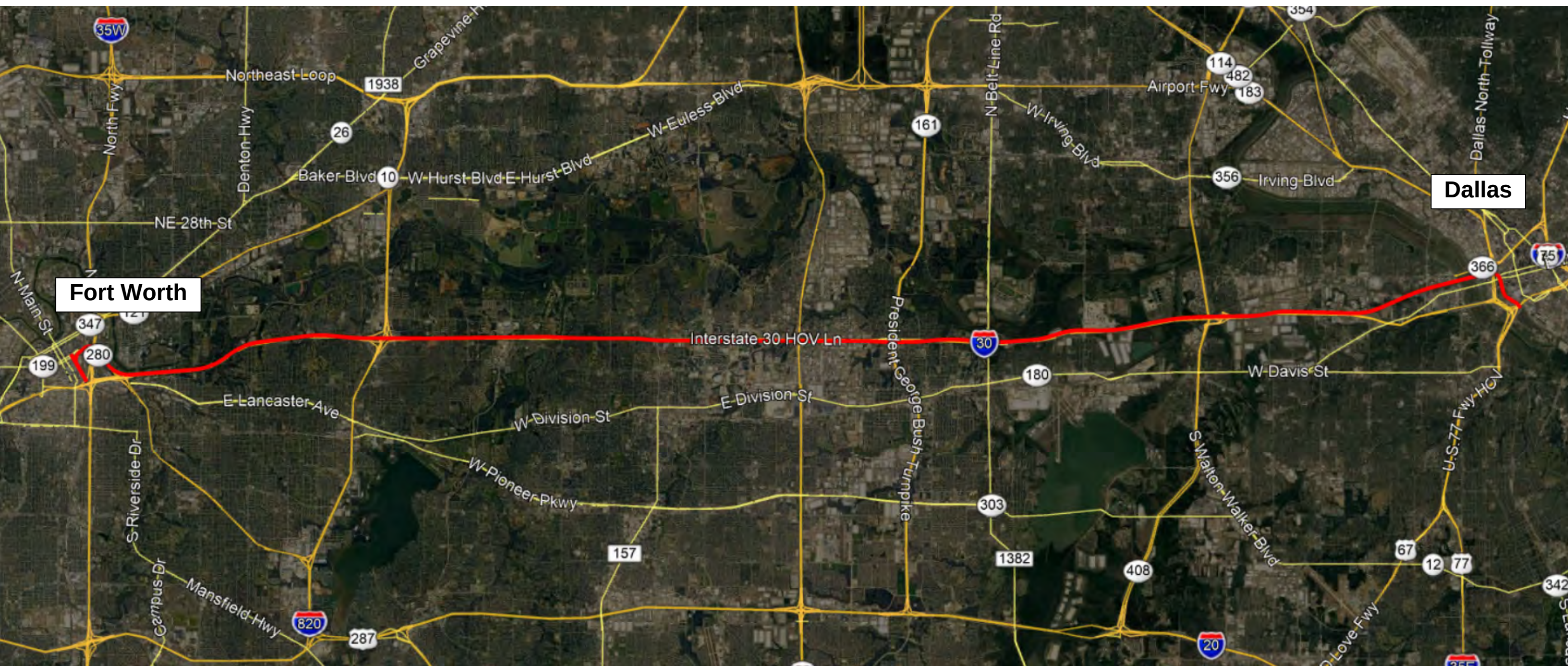
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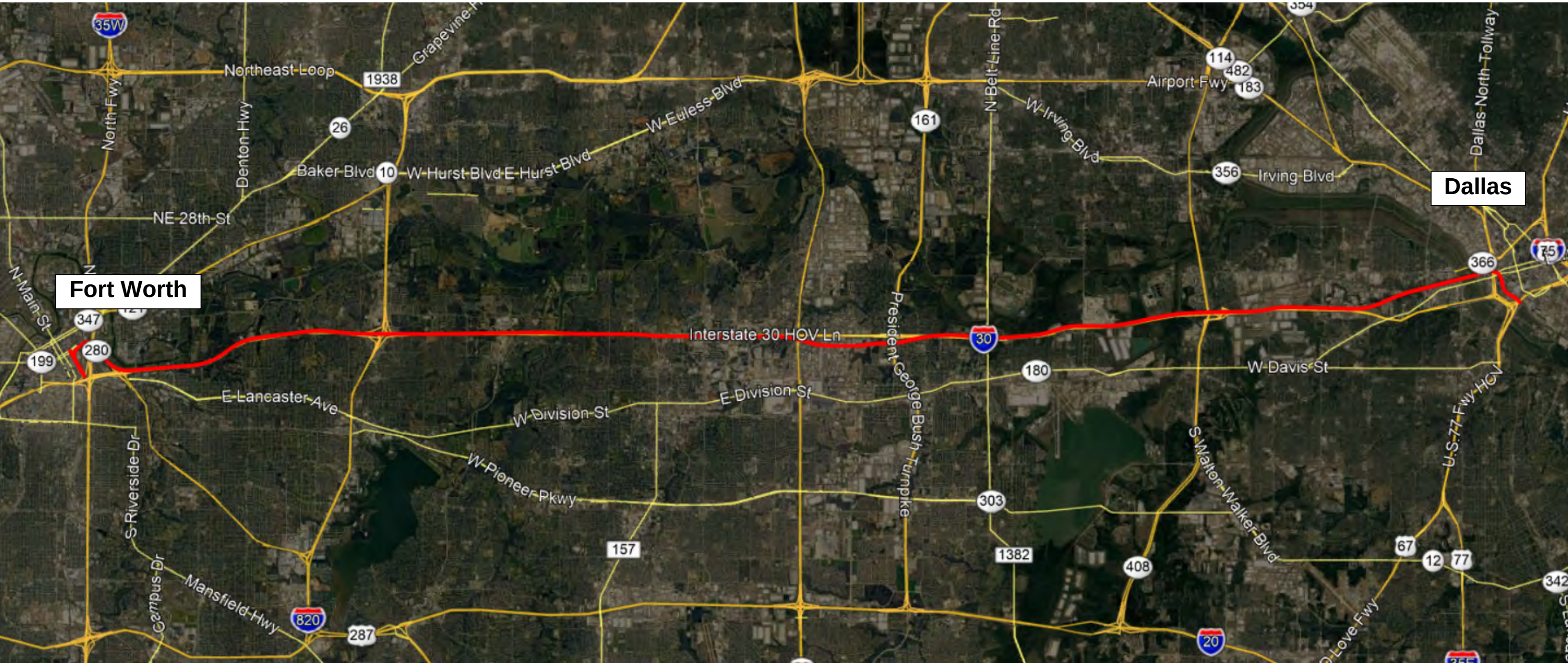
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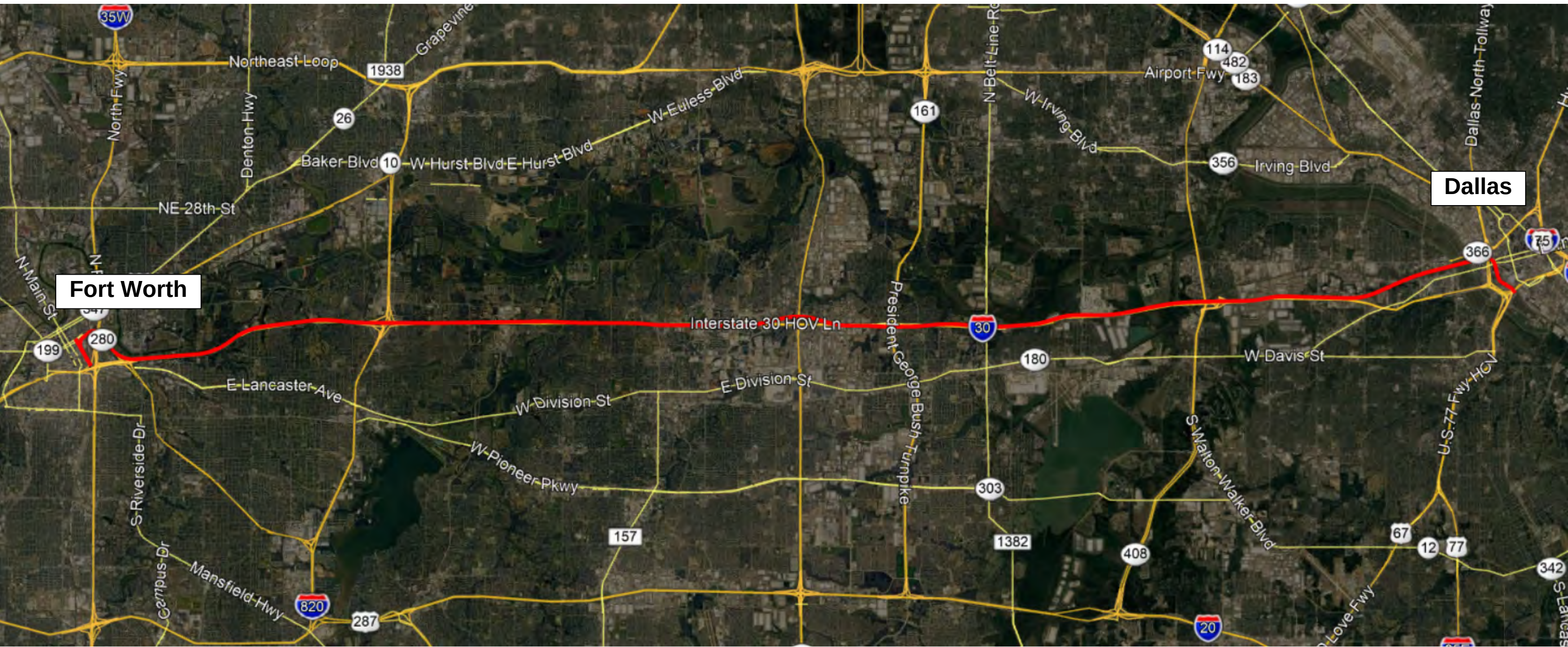
Dallas Fort-Worth High-Speed Transportation Connections Study



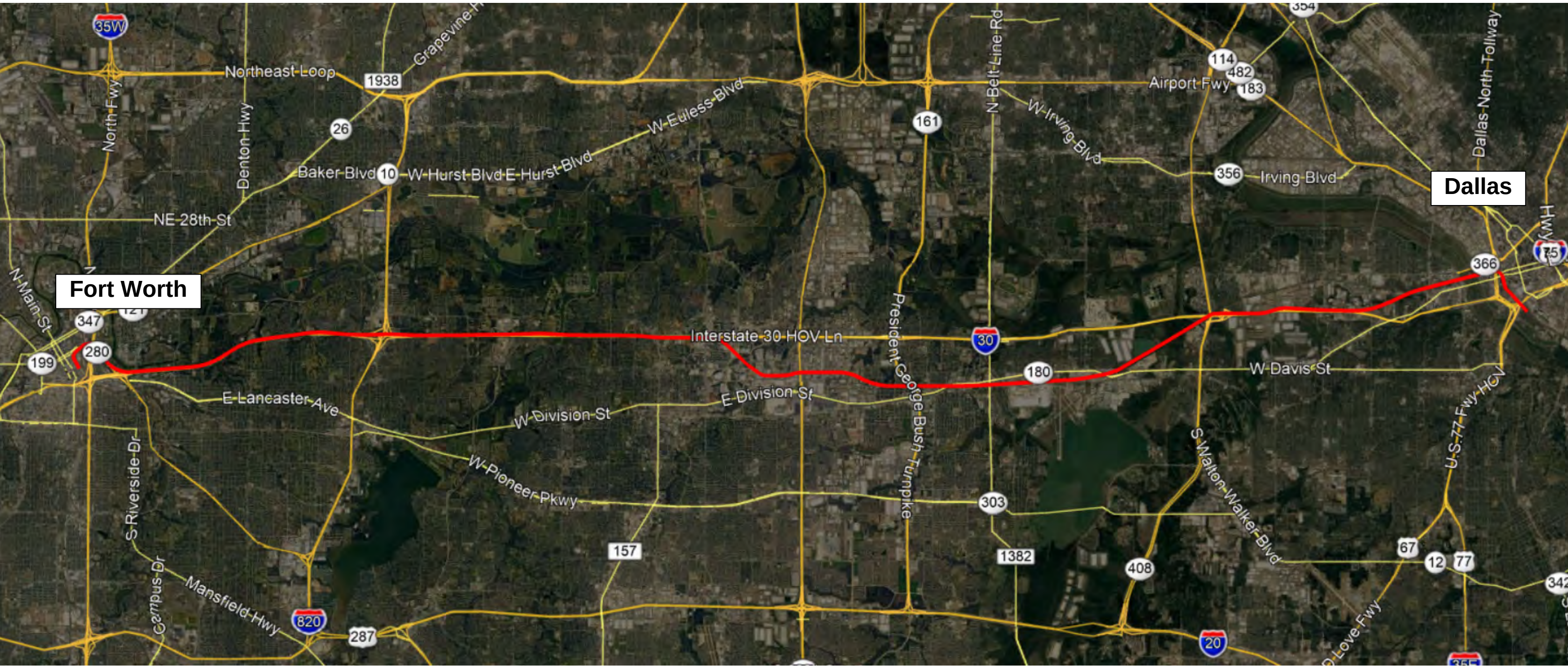
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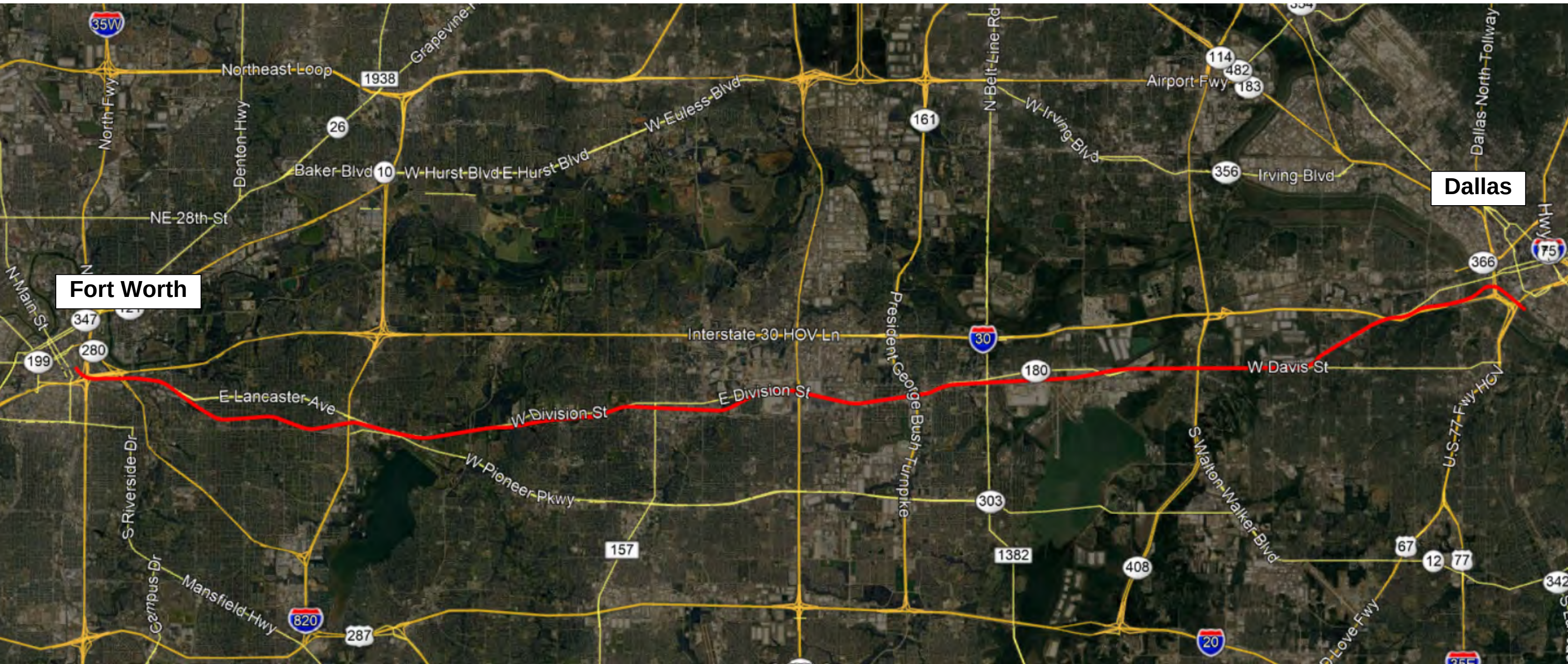
Alignment 18



Alignment 26



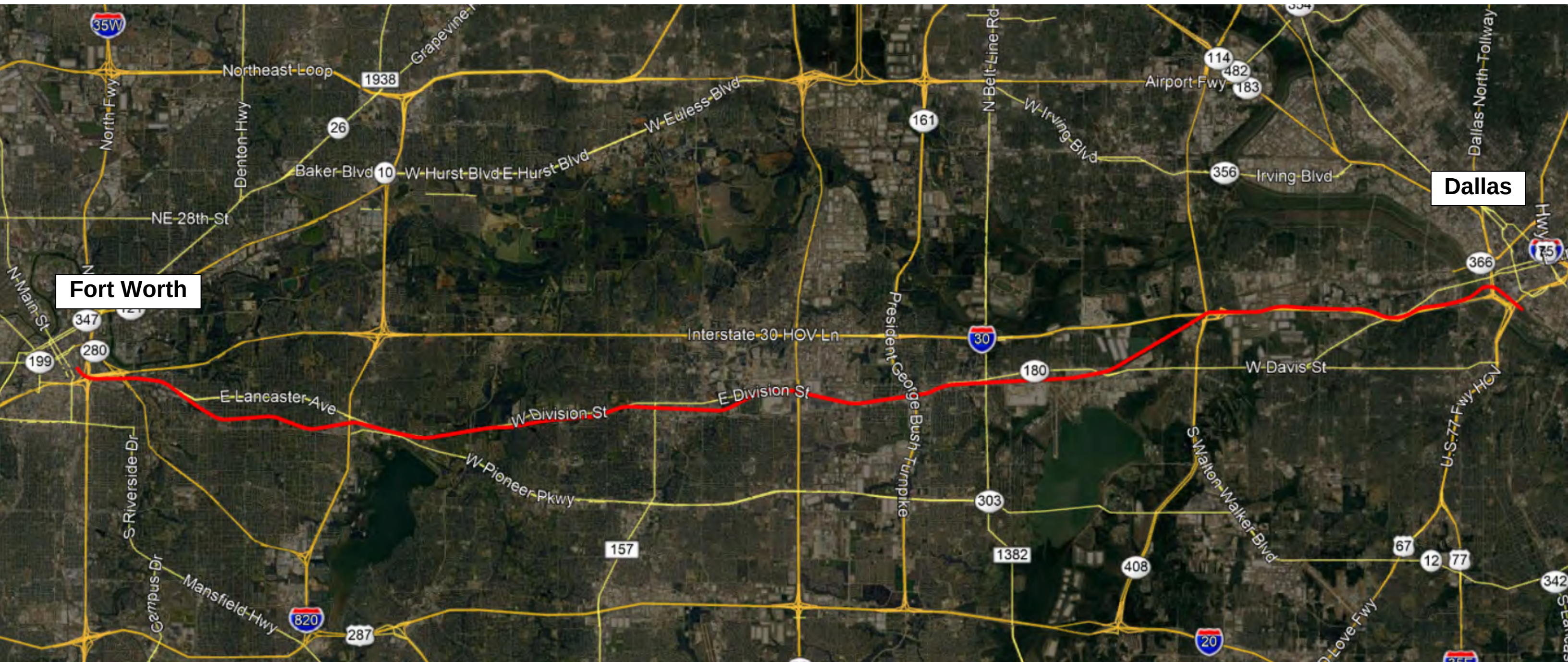
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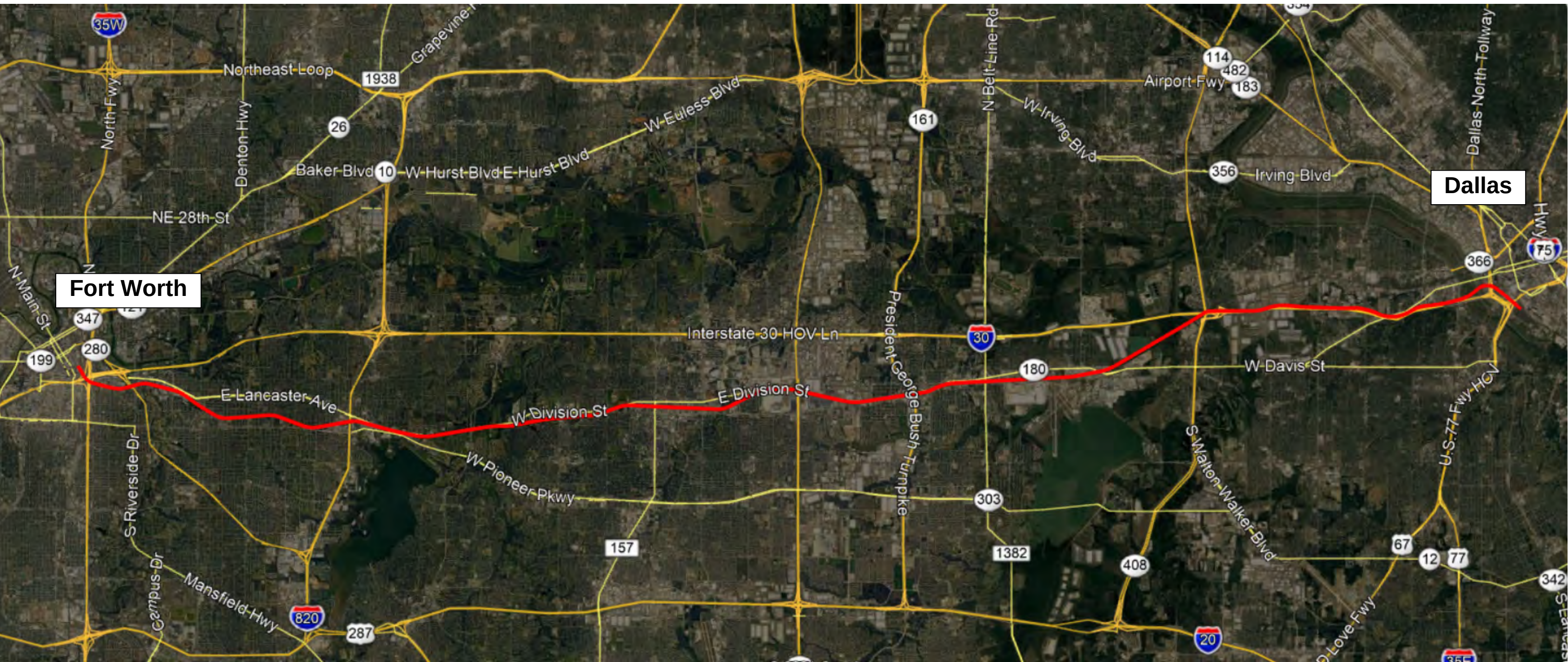
Alignment 32B



Dallas Fort-Worth High-Speed
Transportation Connections Study



Alignment 37



Appendix C

Level 3 Travel Time Tables

(Appendix C-1) Alignment 12

Alignment 12 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 12-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 12-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 12-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 12-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 12-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 12-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 12-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 12-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 12-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 12-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 12-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 12-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 12-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 12-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 12-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	225.72297	205.0 MPH	195 MPH	34.61	204.0596
	Alignment 12-16	0.5 miles	C	17,017 ft	150.0 MPH	195 MPH	209.19735	179.68436	195.1455	150.0 MPH	180 MPH	17.93	99.3567
	Alignment 12-17	0.8 miles	C	60,000 ft	250.0 MPH	180 MPH	202.86256	153.7751	180.09611	180.1 MPH	154 MPH	16.26	167.0958
	Alignment 12-18	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	177.28748	126.49565	154.20741	154.2 MPH	127 MPH	17.02	140.7058
	Alignment 12-19	0.4 miles	C	11,017 ft	125.0 MPH	127 MPH	142.71743	109.04006	127.41324	125.0 MPH	110 MPH	11.10	118.5937
	Alignment 12-20	0.1 miles	S	0,000 ft	205.0 MPH	110 MPH	114.81911	104.95986	110.49757	110.5 MPH	106 MPH	3.10	108.4480
	Alignment 12-21	0.4 miles	C	11,000 ft	125.0 MPH	106 MPH	124.32992	83.750046	106.49631	106.5 MPH	85 MPH	13.65	95.9851
BECKLEY AVE.	Alignment 12-22	0.6 miles	S	0,000 ft	205.0 MPH	85 MPH	120.47066	0	85.185623	85.2 MPH	0 MPH	53.00	42.6852
	Alignment 12-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 12-24	0.1 miles	S	0,000 ft	205.0 MPH	0 MPH	27.207126	0	27.207126	27.2 MPH	27 MPH	16.89	13.6036
	Alignment 12-25	0.2 miles	C	18,017 ft	125.0 MPH	27 MPH	55.708858	0	55.708858	55.7 MPH	56 MPH	17.70	41.4580
	Alignment 12-26	0.5 miles	C	18,000 ft	125.0 MPH	56 MPH	96.44317	0	96.44317	96.4 MPH	96 MPH	25.29	76.0760
	Alignment 12-27	0.5 miles	C	7,000 ft	125.0 MPH	96 MPH	123.4821	57.920118	123.4821	123.5 MPH	123 MPH	16.79	109.9626
	Alignment 12-28	0.3 miles	S	0,000 ft	205.0 MPH	123 MPH	137.65306	107.45834	131.47883	131.5 MPH	125 MPH	8.99	127.8202
	Alignment 12-29	0.9 miles	C	7,017 ft	125.0 MPH	125 MPH	161.99608	70.762065	144.6854	125.0 MPH	125 MPH	26.37	125.0000
	Alignment 12-30	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	128.21046	121.70488	126.61541	126.6 MPH	125 MPH	2.01	125.8077
	Alignment 12-31	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.61488	92.548145	138.4013	125.0 MPH	125 MPH	17.53	125.0000
	Alignment 12-32	0.5 miles	C	22,017 ft	150.0 MPH	125 MPH	146.42033	99.050934	146.42033	146.4 MPH	146 MPH	13.30	135.7102
	Alignment 12-33	0.4 miles	C	22,000 ft	150.0 MPH	146 MPH	160.00994	131.43304	155.08575	150.0 MPH	150 MPH	8.64	149.5398
	Alignment 12-34	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 12-35	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	159.72675	150.0 MPH	150 MPH	12.47	150.0000
	Alignment 12-36	1.0 miles	C	18,017 ft	150.0 MPH	150 MPH	183.46068	106.49967	176.3786	150.0 MPH	169 MPH	23.84	145.2990
	Alignment 12-37	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 12-38	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 12-39	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 12-40	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 12-41	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 12-42	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 12-43	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 12-44	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	166.97304	167.0 MPH	164 MPH	7.15	163.4192
	Alignment 12-45	0.2 miles	S	0,000 ft	205.0 MPH	164 MPH	170.56047	157.16592	164.40024	164.4 MPH	158 MPH	4.22	161.3767
	Alignment 12-46	0.6 miles	C	28,017 ft	250.0 MPH	158 MPH	180.22184	132.09121	158.38073	158.4 MPH	133 MPH	15.99	145.8751
	Alignment 12-47	0.2 miles	S	0,000 ft	205.0 MPH	133 MPH	140.74267	124.77781	133.10428	133.1 MPH	125 MPH	5.10	129.1030
	Alignment 12-48	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	159.49266	76.237077	143.28801	125.0 MPH	125 MPH	24.37	125.0000
	Alignment 12-49	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.34086	97.676365	136.62783	125.0 MPH	125 MPH	15.11	125.0000
	Alignment 12-50	1.2 miles	S	0,000 ft	205.0 MPH	125 MPH	171.69483	42.081902	150.17342	150.2 MPH	125 MPH	31.26	137.5867
	Alignment 12-51	0.8 miles	C	7,017 ft	125.0 MPH	125 MPH	156.41771	82.362	141.58302	125.0 MPH	125 MPH	21.96	125.0000
	Alignment 12-52	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	168.15971	54.518907	148.15986	148.2 MPH	125 MPH	28.76	136.5799
	Alignment 12-53	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	156.681	81.860037	141.7285	125.0 MPH	125 MPH	22.16	125.0000
	Alignment 12-54	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	177.72884	0	129.639	129.6 MPH	45 MPH	55.43	89.3980
	Alignment 12-55	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 12-56	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 12-57	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 12-58	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 12-59	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 12-60	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 12 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
											(sec)	
Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)		(mph)
Alignment 12-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
Alignment 12-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
Alignment 12-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
Alignment 12-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
Alignment 12-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
Alignment 12-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
Alignment 12-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
Alignment 12-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
Alignment 12-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
Alignment 12-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
Alignment 12-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
Alignment 12-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
Alignment 12-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	280.67367	280.7 MPH	270 MPH	16.05	262.7865
Alignment 12-14	0.4 miles	C	70,000 ft	311.0 MPH	270 MPH	288.45083	260.49257	275.06806	275.1 MPH	261 MPH	5.82	269.2258
Alignment 12-15	2.0 miles	S	0,000 ft	311.0 MPH	261 MPH	338.51729	213.00953	283.18718	283.2 MPH	214 MPH	27.77	254.2998
Alignment 12-16	0.5 miles	C	17,017 ft	249.7 MPH	214 MPH	239.83233	200.14362	221.26969	221.3 MPH	201 MPH	8.37	212.8507
Alignment 12-17	0.8 miles	C	60,000 ft	311.0 MPH	201 MPH	241.41958	177.89823	212.09362	212.1 MPH	178 MPH	13.73	197.8701
Alignment 12-18	0.7 miles	S	0,000 ft	311.0 MPH	178 MPH	217.8189	154.81973	189.03713	189.0 MPH	155 MPH	13.70	174.8345
Alignment 12-19	0.4 miles	C	11,017 ft	200.9 MPH	155 MPH	180.79164	140.66177	162.12128	162.1 MPH	141 MPH	8.58	153.3257
Alignment 12-20	0.1 miles	S	0,000 ft	311.0 MPH	141 MPH	148.64182	137.10424	143.41965	143.4 MPH	138 MPH	2.38	141.1728
Alignment 12-21	0.4 miles	C	11,000 ft	200.7 MPH	138 MPH	166.34062	121.74592	145.86501	145.9 MPH	122 MPH	9.64	135.9155
Alignment 12-22	0.6 miles	S	0,000 ft	311.0 MPH	122 MPH	172.54972	0	122.01108	122.0 MPH	0 MPH	37.08	61.0111
Alignment 12-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
Alignment 12-24	0.1 miles	S	0,000 ft	311.0 MPH	0 MPH	38.887658	0	38.887658	38.9 MPH	39 MPH	11.82	19.4438
Alignment 12-25	0.2 miles	C	18,017 ft	256.9 MPH	39 MPH	79.625721	0	79.625721	79.6 MPH	80 MPH	12.38	59.2567
Alignment 12-26	0.5 miles	C	18,000 ft	256.8 MPH	80 MPH	137.84804	0	137.84804	137.8 MPH	138 MPH	17.69	108.7369
Alignment 12-27	0.5 miles	C	7,000 ft	160.1 MPH	138 MPH	176.4953	114.26083	168.51752	160.1 MPH	160 MPH	12.00	153.8481
Alignment 12-28	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.22442	148.13907	171.62737	171.6 MPH	160 MPH	6.92	165.9319
Alignment 12-29	0.9 miles	C	7,017 ft	160.3 MPH	160 MPH	217.7101	122.83501	191.18559	160.3 MPH	160 MPH	20.56	160.3314
Alignment 12-30	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	165.42953	157.77594	162.80763	162.8 MPH	160 MPH	1.56	161.5206
Alignment 12-31	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.17152	136.33004	181.26549	160.1 MPH	160 MPH	13.69	160.1428
Alignment 12-32	0.5 miles	C	22,017 ft	284.0 MPH	160 MPH	193.70923	140.82545	193.70923	193.7 MPH	194 MPH	10.20	176.9260
Alignment 12-33	0.4 miles	C	22,000 ft	283.9 MPH	194 MPH	214.54759	182.64446	214.54759	214.5 MPH	215 MPH	6.33	204.1284
Alignment 12-34	0.2 miles	S	0,000 ft	311.0 MPH	215 MPH	226.70356	208.33899	226.70356	226.7 MPH	227 MPH	3.69	220.6256
Alignment 12-35	0.5 miles	C	18,000 ft	256.8 MPH	227 MPH	252.39619	213.00055	237.68449	237.7 MPH	222 MPH	8.10	230.8107
Alignment 12-36	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
Alignment 12-37	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
Alignment 12-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
Alignment 12-39	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
Alignment 12-40	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
Alignment 12-41	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
Alignment 12-42	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
Alignment 12-43	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	206.71525	206.7 MPH	201 MPH	6.40	200.3466
Alignment 12-44	0.3 miles	S	0,000 ft	311.0 MPH	201 MPH	219.29981	191.40572	206.10241	206.1 MPH	192 MPH	5.84	200.2468
Alignment 12-45	0.2 miles	S	0,000 ft	311.0 MPH	192 MPH	203.34214	186.19647	195.34204	195.3 MPH	187 MPH	3.55	191.8861
Alignment 12-46	0.6 miles	C	28,017 ft	311.0 MPH	187 MPH	224.32934	165.68973	197.33177	197.3 MPH	166 MPH	12.66	184.2697
Alignment 12-47	0.2 miles	S	0,000 ft	311.0 MPH	166 MPH	178.56662	159.48825	169.60506	169.6 MPH	160 MPH	3.97	165.6819
Alignment 12-48	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	213.75927	125.8285	188.86337	160.1 MPH	160 MPH	19.02	160.1428
Alignment 12-49	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.12999	139.86205	178.58035	160.3 MPH	160 MPH	11.78	160.3310
Alignment 12-50	1.2 miles	S	0,000 ft	311.0 MPH	160 MPH	232.39936	0	199.64423	199.6 MPH	160 MPH	23.89	179.9878
Alignment 12-51	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	209.21027	129.86404	186.38013	160.3 MPH	160 MPH	17.12	160.3314
Alignment 12-52	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	227.05729	0	196.46976	196.5 MPH	160 MPH	22.02	178.3533
Alignment 12-53	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	209.46812	129.31274	186.44384	160.1 MPH	160 MPH	17.30	160.1428
Alignment 12-54	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.36369	0	176.04056	176.0 MPH	61 MPH	39.78	124.5514
Alignment 12-55	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
Alignment 12-56	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
Alignment 12-57	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
Alignment 12-58	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
Alignment 12-59	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
Alignment 12-60	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 12 - Includes Mid-Point Station

Technology

Revised Hyperloop	Updates 12/11/2020	10.79545455
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Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 12-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 12-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 12-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 12-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 12-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 12-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 12-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 12-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 12-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 12-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 12-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 12-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 12-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 12-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	357.1627	357.2 MPH	354 MPH	4.44	352.3302
Alignment 12-15	2.0 miles	S	0,000 ft	621.0 MPH	354 MPH	414.4743	280.79	354.0833	354.1 MPH	281 MPH	22.24	317.5832
Alignment 12-16	0.5 miles	C	17,017 ft	339.3 MPH	281 MPH	301.1388	259.3019	281.3224	281.3 MPH	260 MPH	6.58	270.8176
Alignment 12-17	0.8 miles	C	60,000 ft	621.0 MPH	260 MPH	292.3738	222.9744	260.011	260.0 MPH	223 MPH	11.25	241.5110
Alignment 12-18	0.7 miles	S	0,000 ft	621.0 MPH	223 MPH	255.9103	184.3039	223.288	223.3 MPH	185 MPH	11.72	204.2859
Alignment 12-19	0.4 miles	C	11,017 ft	273.0 MPH	185 MPH	207.0884	159.8887	185.0481	185.0 MPH	160 MPH	7.63	172.5480
Alignment 12-20	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	166.7735	152.9268	160.035	160.0 MPH	153 MPH	2.15	156.5348
Alignment 12-21	0.4 miles	C	11,000 ft	272.8 MPH	153 MPH	178.981	121.5886	153.1636	153.2 MPH	122 MPH	9.52	137.6628
Alignment 12-22	0.6 miles	S	0,000 ft	621.0 MPH	122 MPH	172.5497	0	122.0111	122.0 MPH	0 MPH	37.08	61.0111
Alignment 12-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
Alignment 12-24	0.1 miles	S	0,000 ft	621.0 MPH	0 MPH	38.88766	0	38.88766	38.9 MPH	39 MPH	11.82	19.4438
Alignment 12-25	0.2 miles	C	18,017 ft	349.1 MPH	39 MPH	79.62572	0	79.62572	79.6 MPH	80 MPH	12.38	59.2567
Alignment 12-26	0.5 miles	C	18,000 ft	349.0 MPH	80 MPH	137.848	0	137.848	137.8 MPH	138 MPH	17.69	108.7369
Alignment 12-27	0.5 miles	C	7,000 ft	217.6 MPH	138 MPH	176.4953	82.78632	176.4953	176.5 MPH	176 MPH	11.75	157.1717
Alignment 12-28	0.3 miles	S	0,000 ft	621.0 MPH	176 MPH	196.7501	153.5922	196.7501	196.8 MPH	197 MPH	6.16	186.6227
Alignment 12-29	0.9 miles	C	7,017 ft	217.9 MPH	197 MPH	245.7684	130.4572	232.2425	217.9 MPH	218 MPH	15.44	213.4850
Alignment 12-30	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	221.657	214.0334	219.6489	219.6 MPH	218 MPH	1.15	218.6953
Alignment 12-31	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.5605	181.4842	233.6041	217.6 MPH	218 MPH	10.07	217.6222
Alignment 12-32	0.5 miles	C	22,017 ft	385.9 MPH	218 MPH	243.3865	188.3663	243.3865	243.4 MPH	243 MPH	7.83	230.5043
Alignment 12-33	0.4 miles	C	22,000 ft	385.8 MPH	243 MPH	260.2775	225.2323	260.2775	260.3 MPH	260 MPH	5.13	251.8320
Alignment 12-34	0.2 miles	S	0,000 ft	621.0 MPH	260 MPH	270.3853	249.7609	270.3853	270.4 MPH	270 MPH	3.07	265.3314
Alignment 12-35	0.5 miles	C	18,000 ft	349.0 MPH	270 MPH	292.2628	246.5743	292.2628	292.3 MPH	292 MPH	6.65	281.3240
Alignment 12-36	1.0 miles	C	18,017 ft	349.1 MPH	292 MPH	328.9566	250.2452	301.3747	301.4 MPH	271 MPH	12.00	288.6407
Alignment 12-37	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 12-38	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 12-39	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 12-40	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 12-41	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 12-42	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 12-43	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 12-44	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	269.5122	269.5 MPH	266 MPH	4.41	264.9164
Alignment 12-45	0.2 miles	S	0,000 ft	621.0 MPH	266 MPH	274.2992	257.4334	266.2743	266.3 MPH	258 MPH	2.60	262.2655
Alignment 12-46	0.6 miles	C	28,017 ft	435.4 MPH	258 MPH	286.2143	226.2948	258.3096	258.3 MPH	227 MPH	9.61	242.8065
Alignment 12-47	0.2 miles	S	0,000 ft	621.0 MPH	227 MPH	236.3452	217.2532	227.1766	227.2 MPH	218 MPH	2.96	222.4845
Alignment 12-48	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	259.6281	165.2638	239.5476	217.6 MPH	218 MPH	14.00	217.6222
Alignment 12-49	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.5187	186.8942	231.582	217.9 MPH	218 MPH	8.67	217.8774
Alignment 12-50	1.2 miles	S	0,000 ft	621.0 MPH	218 MPH	275.2714	138.4477	248.2392	248.2 MPH	218 MPH	18.45	233.0589
Alignment 12-51	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	255.9957	171.4885	237.7024	217.9 MPH	218 MPH	12.60	217.8785
Alignment 12-52	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	270.7765	147.0449	245.6413	245.6 MPH	218 MPH	16.95	231.6955
Alignment 12-53	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	256.1066	170.67	228.9046	217.6 MPH	198 MPH	13.00	213.1212
Alignment 12-54	1.4 miles	S	0,000 ft	621.0 MPH	198 MPH	267.9827	81.19906	198.3582	198.4 MPH	83 MPH	35.19	140.8218
Alignment 12-55	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 12-56	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 12-57	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
Alignment 12-58	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
Alignment 12-59	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 12-60	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 12 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horiz Curvr	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s²
5798 mphph	5798 mphph	301 fps			

= 1 acceleration of gravity [g]

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 12-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 12-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 12-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 12-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 12-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 12-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 12-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 12-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 12-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 12-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 12-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 12-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 12-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 12-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 12-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 12-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	159.27732	150.0 MPH	150 MPH	11.88	150.0000
	Alignment 12-17	0.8 miles	C	60,000 ft	250.0 MPH	150 MPH	176.7858	117.24666	164.85936	164.9 MPH	152 MPH	17.21	157.8936
	Alignment 12-18	0.7 miles	S	0,000 ft	205.0 MPH	152 MPH	175.55299	124.05301	152.38742	152.4 MPH	125 MPH	17.24	138.8820
	Alignment 12-19	0.4 miles	C	11,017 ft	125.0 MPH	125 MPH	140.94065	106.70396	133.20898	125.0 MPH	125 MPH	10.53	125.0000
	Alignment 12-20	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	129.26108	120.58844	127.14839	127.1 MPH	125 MPH	2.67	126.0742
	Alignment 12-21	0.4 miles	C	11,000 ft	125.0 MPH	125 MPH	140.87913	106.78516	133.17644	125.0 MPH	125 MPH	10.48	125.0000
	Alignment 12-22	0.6 miles	S	0,000 ft	205.0 MPH	125 MPH	151.371	91.306184	153.70293	153.7 MPH	156 MPH	16.39	138.0031
	Alignment 12-24	0.1 miles	S	0,000 ft	205.0 MPH	156 MPH	158.35475	153.60915	156.19255	156.2 MPH	154 MPH	1.48	155.1770
	Alignment 12-25	0.2 miles	C	18,017 ft	125.0 MPH	154 MPH	161.49071	146.1258	154.41543	125.0 MPH	147 MPH	9.16	80.0939
	Alignment 12-26	0.5 miles	C	18,000 ft	125.0 MPH	147 MPH	166.75374	124.14182	147.36317	125.0 MPH	125 MPH	16.59	115.9456
	Alignment 12-27	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	146.87255	98.379139	136.37548	125.0 MPH	125 MPH	14.77	125.0000
	Alignment 12-28	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.01631	109.1992	132.19405	132.2 MPH	125 MPH	8.93	128.5970
	Alignment 12-29	0.9 miles	C	7,017 ft	125.0 MPH	125 MPH	161.99608	70.762065	144.6854	125.0 MPH	125 MPH	26.37	125.0000
	Alignment 12-30	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	128.21046	121.70488	126.61541	126.6 MPH	125 MPH	2.01	125.8077
	Alignment 12-31	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.61488	92.548145	138.4013	125.0 MPH	125 MPH	17.53	125.0000
	Alignment 12-32	0.5 miles	C	22,017 ft	150.0 MPH	125 MPH	146.42033	99.050934	146.42033	146.4 MPH	146 MPH	13.30	135.7102
	Alignment 12-33	0.4 miles	C	22,000 ft	150.0 MPH	146 MPH	160.00994	131.43304	155.08575	150.0 MPH	150 MPH	8.64	149.5398
	Alignment 12-34	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 12-35	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	159.72675	150.0 MPH	150 MPH	12.47	150.0000
	Alignment 12-36	1.0 miles	C	18,017 ft	150.0 MPH	150 MPH	183.46068	106.49967	176.3786	150.0 MPH	169 MPH	23.84	145.2990
	Alignment 12-37	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 12-38	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 12-39	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 12-40	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 12-41	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 12-42	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 12-43	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 12-44	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	166.97304	167.0 MPH	164 MPH	7.15	163.4192
	Alignment 12-45	0.2 miles	S	0,000 ft	205.0 MPH	164 MPH	170.56047	157.16592	164.40024	164.4 MPH	158 MPH	4.22	161.3767
	Alignment 12-46	0.6 miles	C	28,017 ft	250.0 MPH	158 MPH	180.22184	132.09121	158.38073	158.4 MPH	133 MPH	15.99	145.8751
	Alignment 12-47	0.2 miles	S	0,000 ft	205.0 MPH	133 MPH	140.74267	124.77781	133.10428	133.1 MPH	125 MPH	5.10	129.1030
	Alignment 12-48	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	159.49266	76.237077	143.28801	125.0 MPH	125 MPH	24.37	125.0000
	Alignment 12-49	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.34086	97.676365	136.62783	125.0 MPH	125 MPH	15.11	125.0000
	Alignment 12-50	1.2 miles	S	0,000 ft	205.0 MPH	125 MPH	171.69483	42.081902	150.17342	150.2 MPH	125 MPH	31.26	137.5867
	Alignment 12-51	0.8 miles	C	7,017 ft	125.0 MPH	125 MPH	156.41771	82.362	141.58302	125.0 MPH	125 MPH	21.96	125.0000
	Alignment 12-52	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	168.15971	54.518907	148.15986	148.2 MPH	125 MPH	28.76	136.5799
	Alignment 12-53	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	156.681	81.860037	141.7285	125.0 MPH	125 MPH	22.16	125.0000
	BECKLEY AVE.	Alignment 12-54	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	177.72884	0	129.639	129.6 MPH	45 MPH	55.43
	Alignment 12-55	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 12-56	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 12-57	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 12-58	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 12-59	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 12-60	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 12 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curve	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s²
11846 mphph	11846 mphph	456 fps			= 1 acceleration of gravity [g]

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 12-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
	Alignment 12-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
	Alignment 12-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
	Alignment 12-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
	Alignment 12-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
	Alignment 12-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
	Alignment 12-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
BECKLEY AVE.	Alignment 12-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
	Alignment 12-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
	Alignment 12-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
	Alignment 12-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
	Alignment 12-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
	Alignment 12-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	290.95605	291.0 MPH	291 MPH	15.93	264.7483
	Alignment 12-14	0.4 miles	C	70,000 ft	311.0 MPH	291 MPH	308.15467	282.15563	299.7001	299.7 MPH	291 MPH	5.30	295.3390
	Alignment 12-15	2.0 miles	S	0,000 ft	311.0 MPH	291 MPH	362.15184	248.86354	311.0441	311.0 MPH	250 MPH	24.74	285.4514
	Alignment 12-16	0.5 miles	C	17,017 ft	249.7 MPH	250 MPH	272.15154	237.91675	255.64669	249.7 MPH	238 MPH	7.22	246.8108
	Alignment 12-17	0.8 miles	C	60,000 ft	311.0 MPH	238 MPH	272.99526	218.83962	247.47466	247.5 MPH	219 MPH	11.53	235.6092
	Alignment 12-18	0.7 miles	S	0,000 ft	311.0 MPH	219 MPH	252.43231	200.61443	228.126	228.1 MPH	201 MPH	11.05	216.7850
	Alignment 12-19	0.4 miles	C	11,017 ft	200.9 MPH	201 MPH	221.40796	190.05684	211.40288	200.9 MPH	201 MPH	6.55	200.9001
	Alignment 12-20	0.1 miles	S	0,000 ft	311.0 MPH	201 MPH	206.33531	198.18537	203.56163	203.6 MPH	201 MPH	1.66	202.1922
	Alignment 12-21	0.4 miles	C	11,000 ft	200.7 MPH	201 MPH	221.19136	189.94338	211.21794	200.7 MPH	201 MPH	6.53	200.7496
	Alignment 12-22	0.6 miles	S	0,000 ft	311.0 MPH	201 MPH	234.92514	181.6927	211.87947	211.9 MPH	186 MPH	11.25	201.1576
	Alignment 12-24	0.1 miles	S	0,000 ft	311.0 MPH	186 MPH	190.02171	183.99938	187.03509	187.0 MPH	184 MPH	1.24	185.7719
	Alignment 12-25	0.2 miles	C	18,017 ft	256.9 MPH	184 MPH	196.6825	177.46197	187.57399	187.6 MPH	178 MPH	4.00	183.6025
	Alignment 12-26	0.5 miles	C	18,000 ft	256.8 MPH	178 MPH	210.58449	159.64395	187.07157	187.1 MPH	160 MPH	10.94	175.8571
	Alignment 12-27	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	194.40738	140.35375	178.10102	160.1 MPH	160 MPH	11.53	160.1428
	Alignment 12-28	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.22442	148.13907	171.62737	171.6 MPH	160 MPH	6.92	165.9319
	Alignment 12-29	0.9 miles	C	7,017 ft	160.3 MPH	160 MPH	217.7101	122.83501	191.18559	160.3 MPH	160 MPH	20.56	160.3314
	Alignment 12-30	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	165.42953	157.77594	162.80763	162.8 MPH	160 MPH	1.56	161.5206
	Alignment 12-31	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.17152	136.33004	181.26549	160.1 MPH	160 MPH	13.69	160.1428
	Alignment 12-32	0.5 miles	C	22,017 ft	284.0 MPH	160 MPH	193.70923	140.82545	193.70923	193.7 MPH	194 MPH	10.20	176.9260
	Alignment 12-33	0.4 miles	C	22,000 ft	283.9 MPH	194 MPH	214.54759	182.64446	214.54759	214.5 MPH	215 MPH	6.33	204.1284
	Alignment 12-34	0.2 miles	S	0,000 ft	311.0 MPH	215 MPH	226.70356	208.33899	226.70356	226.7 MPH	227 MPH	3.69	220.6256
	Alignment 12-35	0.5 miles	C	18,000 ft	256.8 MPH	227 MPH	252.39619	213.00055	237.68449	237.7 MPH	222 MPH	8.10	230.8107
	Alignment 12-36	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
	Alignment 12-37	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
	Alignment 12-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
	Alignment 12-39	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
	Alignment 12-40	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
	Alignment 12-41	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
	Alignment 12-42	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
	Alignment 12-43	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	206.71525	206.7 MPH	201 MPH	6.40	200.3466
	Alignment 12-44	0.3 miles	S	0,000 ft	311.0 MPH	201 MPH	219.29981	191.40572	206.10241	206.1 MPH	192 MPH	5.84	200.2468
	Alignment 12-45	0.2 miles	S	0,000 ft	311.0 MPH	192 MPH	203.34214	186.19647	195.34204	195.3 MPH	187 MPH	3.55	191.8861
	Alignment 12-46	0.6 miles	C	28,017 ft	311.0 MPH	187 MPH	224.32934	165.68973	197.33177	197.3 MPH	166 MPH	12.66	184.2697
	Alignment 12-47	0.2 miles	S	0,000 ft	311.0 MPH	166 MPH	178.56662	159.48825	169.60506	169.6 MPH	160 MPH	3.97	165.6819
	Alignment 12-48	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	213.75927	125.8285	188.86337	160.1 MPH	160 MPH	19.02	160.1428
	Alignment 12-49	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.12999	139.86205	178.58035	160.3 MPH	160 MPH	11.78	160.3310
	Alignment 12-50	1.2 miles	S	0,000 ft	311.0 MPH	160 MPH	232.39936	0	199.64423	199.6 MPH	160 MPH	23.89	179.9878
	Alignment 12-51	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	209.21027	129.86404	186.38013	160.3 MPH	160 MPH	17.12	160.3314
	Alignment 12-52	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	227.05729	0	196.46976	196.5 MPH	160 MPH	22.02	178.3533
	Alignment 12-53	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	209.46812	129.31274	186.44384	160.1 MPH	160 MPH	17.30	160.1428
	Alignment 12-54	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.36369	0	176.04056	176.0 MPH	61 MPH	39.78	124.5514
	Alignment 12-55	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 12-56	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 12-57	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 12-58	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 12-59	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 12-60	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 12 - Excludes Mid-Point Station

Technology

Revised Hyperloop	Updates 12/11/2020	10.79545455
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Acceleration	Deceleration	Max Speed	Min Horizl Curve	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s ² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 12-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 12-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 12-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 12-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 12-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 12-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
BEACH ST. Alignment 12-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 12-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 12-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 12-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 12-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 12-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 12-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 12-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
Alignment 12-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	381.7164	381.7 MPH	339 MPH	19.40	364.0325
Alignment 12-16	0.5 miles	C	17,017 ft	339.3 MPH	339 MPH	356.1614	321.5646	342.3704	339.3 MPH	328 MPH	5.31	335.6457
Alignment 12-17	0.8 miles	C	60,000 ft	621.0 MPH	328 MPH	354.2124	299.5022	328.2274	328.2 MPH	300 MPH	8.65	314.2256
Alignment 12-18	0.7 miles	S	0,000 ft	621.0 MPH	300 MPH	325.2093	272.4682	300.2454	300.2 MPH	273 MPH	8.35	286.7474
Alignment 12-19	0.4 miles	C	11,017 ft	273.0 MPH	273 MPH	288.434	256.6573	280.8272	273.0 MPH	273 MPH	4.82	273.0084
Alignment 12-20	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	277.0324	268.9241	274.9263	274.9 MPH	273 MPH	1.23	273.9136
Alignment 12-21	0.4 miles	C	11,000 ft	272.8 MPH	273 MPH	288.179	256.5088	280.5968	272.8 MPH	273 MPH	4.80	272.8039
Alignment 12-22	0.6 miles	S	0,000 ft	621.0 MPH	273 MPH	298.8501	243.9929	277.7916	277.8 MPH	255 MPH	8.44	267.9941
Alignment 12-24	0.1 miles	S	0,000 ft	621.0 MPH	255 MPH	257.9482	252.0174	255.4861	255.5 MPH	253 MPH	0.90	254.4066
Alignment 12-25	0.2 miles	C	18,017 ft	349.1 MPH	253 MPH	262.3681	243.2714	253.3506	253.4 MPH	244 MPH	2.95	248.8379
Alignment 12-26	0.5 miles	C	18,000 ft	349.0 MPH	244 MPH	268.6965	216.5044	244.4967	244.5 MPH	218 MPH	8.32	231.2988
Alignment 12-27	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	243.9425	187.6457	231.1573	217.6 MPH	218 MPH	8.48	217.6222
Alignment 12-28	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.349	199.4979	226.2637	226.3 MPH	218 MPH	5.17	222.0061
Alignment 12-29	0.9 miles	C	7,017 ft	217.9 MPH	218 MPH	262.9878	160.5601	241.4887	217.9 MPH	218 MPH	15.13	217.8785
Alignment 12-30	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	221.657	214.0334	219.6489	219.6 MPH	218 MPH	1.15	218.6953
Alignment 12-31	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.5605	181.4842	233.6041	217.6 MPH	218 MPH	10.07	217.6222
Alignment 12-32	0.5 miles	C	22,017 ft	385.9 MPH	218 MPH	243.3865	188.3663	243.3865	243.4 MPH	243 MPH	7.83	230.5043
Alignment 12-33	0.4 miles	C	22,000 ft	385.8 MPH	243 MPH	260.2775	225.2323	260.2775	260.3 MPH	260 MPH	5.13	251.8320
Alignment 12-34	0.2 miles	S	0,000 ft	621.0 MPH	260 MPH	270.3853	249.7609	270.3853	270.4 MPH	270 MPH	3.07	265.3314
Alignment 12-35	0.5 miles	C	18,000 ft	349.0 MPH	270 MPH	292.2628	246.5743	292.2628	292.3 MPH	292 MPH	6.65	281.3240
Alignment 12-36	1.0 miles	C	18,017 ft	349.1 MPH	292 MPH	328.9566	250.2452	301.3747	301.4 MPH	271 MPH	12.00	288.6407
Alignment 12-37	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 12-38	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 12-39	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 12-40	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 12-41	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 12-42	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 12-43	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 12-44	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	269.5122	269.5 MPH	266 MPH	4.41	264.9164
Alignment 12-45	0.2 miles	S	0,000 ft	621.0 MPH	266 MPH	274.2992	257.4334	266.2743	266.3 MPH	258 MPH	2.60	262.2655
Alignment 12-46	0.6 miles	C	28,017 ft	435.4 MPH	258 MPH	286.2143	226.2948	258.3096	258.3 MPH	227 MPH	9.61	242.8065
Alignment 12-47	0.2 miles	S	0,000 ft	621.0 MPH	227 MPH	236.3452	217.2532	227.1766	227.2 MPH	218 MPH	2.96	222.4845
Alignment 12-48	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	259.6281	165.2638	239.5476	217.6 MPH	218 MPH	14.00	217.6222
Alignment 12-49	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.5187	186.8942	231.582	217.9 MPH	218 MPH	8.67	217.8774
Alignment 12-50	1.2 miles	S	0,000 ft	621.0 MPH	218 MPH	275.2714	138.4477	248.2392	248.2 MPH	218 MPH	18.45	233.0589
Alignment 12-51	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	255.9957	171.4885	237.7024	217.9 MPH	218 MPH	12.60	217.8785
Alignment 12-52	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	270.7765	147.0449	245.6413	245.6 MPH	218 MPH	16.95	231.6955
Alignment 12-53	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	256.1066	170.67	228.9046	217.6 MPH	198 MPH	13.00	213.1212
BECKLEY AVE. Alignment 12-54	1.4 miles	S	0,000 ft	621.0 MPH	198 MPH	267.9827	81.19906	198.3582	198.4 MPH	83 MPH	35.19	140.8218
Alignment 12-55	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 12-56	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 12-57	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
Alignment 12-58	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
Alignment 12-59	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 12-60	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-2) Alignment 13

Alignment 13 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 13-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 13-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 13-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 13-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 13-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 13-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 13-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 13-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 13-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 13-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 13-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 13-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 13-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 13-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 13-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	225.72297	205.0 MPH	195 MPH	34.61	204.0596
	Alignment 13-16	0.5 miles	C	17,017 ft	150.0 MPH	195 MPH	209.19735	179.68436	195.1455	150.0 MPH	180 MPH	17.93	99.3567
	Alignment 13-17	0.8 miles	C	60,000 ft	250.0 MPH	180 MPH	202.86256	153.7751	180.09611	180.1 MPH	154 MPH	16.26	167.0958
	Alignment 13-18	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	177.28748	126.49565	154.20741	154.2 MPH	127 MPH	17.02	140.7058
	Alignment 13-19	0.4 miles	C	11,017 ft	125.0 MPH	127 MPH	142.71743	109.04006	127.41324	125.0 MPH	110 MPH	11.10	118.5937
	Alignment 13-20	0.1 miles	S	0,000 ft	205.0 MPH	110 MPH	114.81911	104.95986	110.49757	110.5 MPH	106 MPH	3.10	108.4480
BECKLEY AVE.	Alignment 13-21	0.4 miles	C	11,000 ft	125.0 MPH	106 MPH	124.32992	83.750046	106.49631	106.5 MPH	85 MPH	13.65	95.9851
	Alignment 13-22	0.6 miles	S	0,000 ft	205.0 MPH	85 MPH	120.47066	0	85.185623	85.2 MPH	0 MPH	53.00	42.6852
	Alignment 13-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 13-24	0.1 miles	S	0,000 ft	205.0 MPH	0 MPH	27.207126	0	27.207126	27.2 MPH	27 MPH	16.89	13.6036
	Alignment 13-25	0.2 miles	C	18,017 ft	125.0 MPH	27 MPH	55.708858	0	55.708858	55.7 MPH	56 MPH	17.70	41.4580
	Alignment 13-26	0.4 miles	C	18,000 ft	125.0 MPH	56 MPH	86.416312	0	86.416312	86.4 MPH	86 MPH	19.06	71.0626
	Alignment 13-27	2.5 miles	S	0,000 ft	205.0 MPH	86 MPH	192.2706	0	172.43547	172.4 MPH	150 MPH	67.33	136.0025
	Alignment 13-28	0.5 miles	C	22,017 ft	150.0 MPH	150 MPH	168.26738	129.17464	159.3956	150.0 MPH	150 MPH	12.03	150.0000
	Alignment 13-29	0.4 miles	C	22,000 ft	150.0 MPH	150 MPH	163.29197	135.4095	156.78691	150.0 MPH	150 MPH	8.62	150.0000
	Alignment 13-30	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 13-31	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	184.562	150.0 MPH	199 MPH	17.44	107.2587
	Alignment 13-32	1.0 miles	C	18,017 ft	150.0 MPH	199 MPH	225.29718	168.65106	199.14796	150.0 MPH	169 MPH	28.81	120.2367
	Alignment 13-33	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 13-34	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 13-35	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 13-36	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 13-37	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 13-38	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 13-39	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 13-40	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	166.97304	167.0 MPH	164 MPH	7.15	163.4192
	Alignment 13-41	0.2 miles	S	0,000 ft	205.0 MPH	164 MPH	170.56047	157.16592	164.40024	164.4 MPH	158 MPH	4.22	161.3767
	Alignment 13-42	0.6 miles	C	28,017 ft	250.0 MPH	158 MPH	180.22184	132.09121	158.38073	158.4 MPH	133 MPH	15.99	145.8751
	Alignment 13-43	0.2 miles	S	0,000 ft	205.0 MPH	133 MPH	140.74267	124.77781	133.10428	133.1 MPH	125 MPH	5.10	129.1030
	Alignment 13-44	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	159.49266	76.237077	143.28801	125.0 MPH	125 MPH	24.37	125.0000
	Alignment 13-45	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.34086	97.676365	136.62783	125.0 MPH	125 MPH	15.11	125.0000
	Alignment 13-46	1.2 miles	S	0,000 ft	205.0 MPH	125 MPH	171.69483	42.081902	150.17342	150.2 MPH	125 MPH	31.26	137.5867
	Alignment 13-47	0.8 miles	C	7,017 ft	125.0 MPH	125 MPH	156.41771	82.362	141.58302	125.0 MPH	125 MPH	21.96	125.0000
	Alignment 13-48	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	168.15971	54.518907	148.15986	148.2 MPH	125 MPH	28.76	136.5799
	Alignment 13-49	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	156.681	81.860037	141.7285	125.0 MPH	125 MPH	22.16	125.0000
	Alignment 13-50	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	177.72884	0	129.639	129.6 MPH	45 MPH	55.43	89.3980
	Alignment 13-51	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 13-52	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 13-53	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 13-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 13-55	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 13-56	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 13 - Includes Mid-Point Station

Technology

Maglev

Acceleration	Deceleration	Max Speed	Min Horiz Curv	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
						(mph)	(mph)	(mph)			(sec)	
Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)		(mph)
Alignment 13-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
Alignment 13-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
Alignment 13-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
Alignment 13-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
Alignment 13-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
Alignment 13-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
Alignment 13-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
Alignment 13-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
Alignment 13-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
Alignment 13-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
Alignment 13-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
Alignment 13-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
Alignment 13-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	280.67367	280.7 MPH	270 MPH	16.05	262.7865
Alignment 13-14	0.4 miles	C	70,000 ft	311.0 MPH	270 MPH	288.45083	260.49257	275.06806	275.1 MPH	261 MPH	5.82	269.2258
Alignment 13-15	2.0 miles	S	0,000 ft	311.0 MPH	261 MPH	338.51729	213.00953	283.18718	283.2 MPH	214 MPH	27.77	254.2998
Alignment 13-16	0.5 miles	C	17,017 ft	249.7 MPH	214 MPH	239.83233	200.14362	221.26969	221.3 MPH	201 MPH	8.37	212.8507
Alignment 13-17	0.8 miles	C	60,000 ft	311.0 MPH	201 MPH	241.41958	177.89823	212.09362	212.1 MPH	178 MPH	13.73	197.8701
Alignment 13-18	0.7 miles	S	0,000 ft	311.0 MPH	178 MPH	217.8189	154.81973	189.03713	189.0 MPH	155 MPH	13.70	174.8345
Alignment 13-19	0.4 miles	C	11,017 ft	200.9 MPH	155 MPH	180.79164	140.66177	162.12128	162.1 MPH	141 MPH	8.58	153.3257
Alignment 13-20	0.1 miles	S	0,000 ft	311.0 MPH	141 MPH	148.64182	137.10424	143.41965	143.4 MPH	138 MPH	2.38	141.1728
Alignment 13-21	0.4 miles	C	11,000 ft	200.7 MPH	138 MPH	166.34062	121.74592	145.86501	145.9 MPH	122 MPH	9.64	135.9155
Alignment 13-22	0.6 miles	S	0,000 ft	311.0 MPH	122 MPH	172.54972	0	122.01108	122.0 MPH	0 MPH	37.08	61.0111
Alignment 13-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
Alignment 13-24	0.1 miles	S	0,000 ft	311.0 MPH	0 MPH	38.887658	0	38.887658	38.9 MPH	39 MPH	11.82	19.4438
Alignment 13-25	0.2 miles	C	18,017 ft	256.9 MPH	39 MPH	79.625721	0	79.625721	79.6 MPH	80 MPH	12.38	59.2567
Alignment 13-26	0.4 miles	C	18,000 ft	256.8 MPH	80 MPH	123.51646	0	123.51646	123.5 MPH	124 MPH	13.34	101.5711
Alignment 13-27	2.5 miles	S	0,000 ft	311.0 MPH	124 MPH	274.81599	0	267.02512	267.0 MPH	259 MPH	46.05	198.8583
Alignment 13-28	0.5 miles	C	22,017 ft	284.0 MPH	259 MPH	280.99563	247.52189	265.01184	265.0 MPH	248 MPH	7.00	257.9421
Alignment 13-29	0.4 miles	C	22,000 ft	283.9 MPH	248 MPH	264.59668	239.45716	252.5979	252.6 MPH	240 MPH	5.23	247.3685
Alignment 13-30	0.2 miles	S	0,000 ft	311.0 MPH	240 MPH	250.92596	234.46635	243.09343	243.1 MPH	235 MPH	3.40	239.7380
Alignment 13-31	0.5 miles	C	18,000 ft	256.8 MPH	235 MPH	259.87369	221.81013	241.67989	241.7 MPH	222 MPH	8.01	233.4871
Alignment 13-32	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
Alignment 13-33	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
Alignment 13-34	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
Alignment 13-35	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
Alignment 13-36	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
Alignment 13-37	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
Alignment 13-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
Alignment 13-39	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	206.71525	206.7 MPH	201 MPH	6.40	200.3466
Alignment 13-40	0.3 miles	S	0,000 ft	311.0 MPH	201 MPH	219.29981	191.40572	206.10241	206.1 MPH	192 MPH	5.84	200.2468
Alignment 13-41	0.2 miles	S	0,000 ft	311.0 MPH	192 MPH	203.34214	186.19647	195.34204	195.3 MPH	187 MPH	3.55	191.8861
Alignment 13-42	0.6 miles	C	28,017 ft	311.0 MPH	187 MPH	224.32934	165.68973	197.33177	197.3 MPH	166 MPH	12.66	184.2697
Alignment 13-43	0.2 miles	S	0,000 ft	311.0 MPH	166 MPH	178.56662	159.48825	169.60506	169.6 MPH	160 MPH	3.97	165.6819
Alignment 13-44	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	213.75927	125.8285	188.86337	160.1 MPH	160 MPH	19.02	160.1428
Alignment 13-45	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.12999	139.86205	178.58035	160.3 MPH	160 MPH	11.78	160.3310
Alignment 13-46	1.2 miles	S	0,000 ft	311.0 MPH	160 MPH	232.39936	0	199.64423	199.6 MPH	160 MPH	23.89	179.9878
Alignment 13-47	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	209.21027	129.86404	186.38013	160.3 MPH	160 MPH	17.12	160.3314
Alignment 13-48	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	227.05729	0	196.46976	196.5 MPH	160 MPH	22.02	178.3533
Alignment 13-49	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	209.46812	129.31274	186.44384	160.1 MPH	160 MPH	17.30	160.1428
Alignment 13-50	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.36369	0	176.04056	176.0 MPH	61 MPH	39.78	124.5514
Alignment 13-51	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
Alignment 13-52	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
Alignment 13-53	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
Alignment 13-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
Alignment 13-55	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
Alignment 13-56	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 13 - Includes Mid-Point Station

Technology

Revised Hyperloop Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 13-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 13-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 13-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 13-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 13-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 13-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 13-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 13-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 13-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 13-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 13-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 13-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 13-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 13-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	357.1627	357.2 MPH	354 MPH	4.44	352.3302
Alignment 13-15	2.0 miles	S	0,000 ft	621.0 MPH	354 MPH	414.4743	280.79	354.0833	354.1 MPH	281 MPH	22.24	317.5832
Alignment 13-16	0.5 miles	C	17,017 ft	339.3 MPH	281 MPH	301.1388	259.3019	281.3224	281.3 MPH	260 MPH	6.58	270.8176
Alignment 13-17	0.8 miles	C	60,000 ft	621.0 MPH	260 MPH	292.3738	222.9744	260.011	260.0 MPH	223 MPH	11.25	241.5110
Alignment 13-18	0.7 miles	S	0,000 ft	621.0 MPH	223 MPH	255.9103	184.3039	223.288	223.3 MPH	185 MPH	11.72	204.2859
Alignment 13-19	0.4 miles	C	11,017 ft	273.0 MPH	185 MPH	207.0884	159.8887	185.0481	185.0 MPH	160 MPH	7.63	172.5480
Alignment 13-20	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	166.7735	152.9268	160.035	160.0 MPH	153 MPH	2.15	156.5348
Alignment 13-21	0.4 miles	C	11,000 ft	272.8 MPH	153 MPH	178.981	121.5886	153.1636	153.2 MPH	122 MPH	9.52	137.6628
Alignment 13-22	0.6 miles	S	0,000 ft	621.0 MPH	122 MPH	172.5497	0	122.0111	122.0 MPH	0 MPH	37.08	61.0111
Alignment 13-23-Statio	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
Alignment 13-24	0.1 miles	S	0,000 ft	621.0 MPH	0 MPH	38.88766	0	38.88766	38.9 MPH	39 MPH	11.82	19.4438
Alignment 13-25	0.2 miles	C	18,017 ft	349.1 MPH	39 MPH	79.62572	0	79.62572	79.6 MPH	80 MPH	12.38	59.2567
Alignment 13-26	0.4 miles	C	18,000 ft	349.0 MPH	80 MPH	123.5165	0	123.5165	123.5 MPH	124 MPH	13.34	101.5711
Alignment 13-27	2.5 miles	S	0,000 ft	621.0 MPH	124 MPH	274.816	0	274.816	274.8 MPH	275 MPH	45.98	199.1662
Alignment 13-28	0.5 miles	C	22,017 ft	385.9 MPH	275 MPH	295.6372	252.2822	295.6372	295.6 MPH	296 MPH	6.33	285.2266
Alignment 13-29	0.4 miles	C	22,000 ft	385.8 MPH	296 MPH	309.6914	280.8807	309.6914	309.7 MPH	310 MPH	4.27	302.6643
Alignment 13-30	0.2 miles	S	0,000 ft	621.0 MPH	310 MPH	318.2336	300.9069	318.2336	318.2 MPH	318 MPH	2.60	313.9625
Alignment 13-31	0.5 miles	C	18,000 ft	349.0 MPH	318 MPH	337.0192	298.2671	323.7916	323.8 MPH	310 MPH	5.88	318.0783
Alignment 13-32	1.0 miles	C	18,017 ft	349.1 MPH	310 MPH	344.8114	270.7492	310.1096	310.1 MPH	271 MPH	11.92	290.6093
Alignment 13-33	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 13-34	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 13-35	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 13-36	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 13-37	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 13-38	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 13-39	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 13-40	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	269.5122	269.5 MPH	266 MPH	4.41	264.9164
Alignment 13-41	0.2 miles	S	0,000 ft	621.0 MPH	266 MPH	274.2992	257.4334	266.2743	266.3 MPH	258 MPH	2.60	262.2655
Alignment 13-42	0.6 miles	C	28,017 ft	435.4 MPH	258 MPH	286.2143	226.2948	258.3096	258.3 MPH	227 MPH	9.61	242.8065
Alignment 13-43	0.2 miles	S	0,000 ft	621.0 MPH	227 MPH	236.3452	217.2532	227.1766	227.2 MPH	218 MPH	2.96	222.4845
Alignment 13-44	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	259.6281	165.2638	239.5476	217.6 MPH	218 MPH	14.00	217.6222
Alignment 13-45	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.5187	186.8942	231.582	217.9 MPH	218 MPH	8.67	217.8774
Alignment 13-46	1.2 miles	S	0,000 ft	621.0 MPH	218 MPH	275.2714	138.4477	248.2392	248.2 MPH	218 MPH	18.45	233.0589
Alignment 13-47	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	255.9957	171.4885	237.7024	217.9 MPH	218 MPH	12.60	217.8785
Alignment 13-48	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	270.7765	147.0449	245.6413	245.6 MPH	218 MPH	16.95	231.6955
Alignment 13-49	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	256.1066	170.67	228.9046	217.6 MPH	198 MPH	13.00	213.1212
Alignment 13-50	1.4 miles	S	0,000 ft	621.0 MPH	198 MPH	267.9827	81.19906	198.3582	198.4 MPH	83 MPH	35.19	140.8218
Alignment 13-51	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 13-52	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 13-53	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
Alignment 13-54	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
Alignment 13-55	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 13-56	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 13 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 13-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 13-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 13-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 13-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 13-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 13-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 13-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 13-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 13-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 13-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 13-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 13-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 13-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 13-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 13-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 13-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	159.27732	150.0 MPH	150 MPH	11.88	150.0000
	Alignment 13-17	0.8 miles	C	60,000 ft	250.0 MPH	150 MPH	176.7858	117.24666	164.85936	164.9 MPH	152 MPH	17.21	157.8936
	Alignment 13-18	0.7 miles	S	0,000 ft	205.0 MPH	152 MPH	175.55299	124.05301	152.38742	152.4 MPH	125 MPH	17.24	138.8820
	Alignment 13-19	0.4 miles	C	11,017 ft	125.0 MPH	125 MPH	140.94065	106.70396	133.20898	125.0 MPH	125 MPH	10.53	125.0000
	Alignment 13-20	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	129.26108	120.58844	127.14839	127.1 MPH	125 MPH	2.67	126.0742
BECKLEY AVE.	Alignment 13-21	0.4 miles	C	11,000 ft	125.0 MPH	125 MPH	140.87913	106.78516	133.17644	125.0 MPH	125 MPH	10.48	125.0000
	Alignment 13-22	0.6 miles	S	0,000 ft	205.0 MPH	125 MPH	151.371	91.306184	139.7179	139.7 MPH	127 MPH	17.03	132.8225
	Alignment 13-24	0.1 miles	S	0,000 ft	205.0 MPH	127 MPH	129.88159	124.05149	127.46417	127.5 MPH	125 MPH	1.82	126.3906
	Alignment 13-25	0.2 miles	C	18,017 ft	125.0 MPH	125 MPH	134.12028	115.15968	129.64037	125.0 MPH	125 MPH	5.87	125.0000
	Alignment 13-26	0.4 miles	C	18,000 ft	125.0 MPH	125 MPH	141.38353	106.11644	133.44344	125.0 MPH	125 MPH	10.84	125.0000
	Alignment 13-27	2.5 miles	S	0,000 ft	205.0 MPH	125 MPH	212.42694	0	183.88203	183.9 MPH	150 MPH	57.59	159.0066
	Alignment 13-28	0.5 miles	C	22,017 ft	150.0 MPH	150 MPH	168.26738	129.17464	159.3956	150.0 MPH	150 MPH	12.03	150.0000
	Alignment 13-29	0.4 miles	C	22,000 ft	150.0 MPH	150 MPH	163.29197	135.4095	156.78691	150.0 MPH	150 MPH	8.62	150.0000
	Alignment 13-30	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 13-31	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	184.562	150.0 MPH	199 MPH	17.44	107.2587
	Alignment 13-32	1.0 miles	C	18,017 ft	150.0 MPH	199 MPH	225.29718	168.65106	199.14796	150.0 MPH	169 MPH	28.81	120.2367
	Alignment 13-33	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 13-34	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 13-35	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 13-36	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 13-37	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 13-38	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 13-39	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 13-40	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	166.97304	167.0 MPH	164 MPH	7.15	163.4192
	Alignment 13-41	0.2 miles	S	0,000 ft	205.0 MPH	164 MPH	170.56047	157.16592	164.40024	164.4 MPH	158 MPH	4.22	161.3767
	Alignment 13-42	0.6 miles	C	28,017 ft	250.0 MPH	158 MPH	180.22184	132.09121	158.38073	158.4 MPH	133 MPH	15.99	145.8751
	Alignment 13-43	0.2 miles	S	0,000 ft	205.0 MPH	133 MPH	140.74267	124.77781	133.10428	133.1 MPH	125 MPH	5.10	129.1030
	Alignment 13-44	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	159.49266	76.237077	143.28801	125.0 MPH	125 MPH	24.37	125.0000
	Alignment 13-45	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.34086	97.676365	136.62783	125.0 MPH	125 MPH	15.11	125.0000
	Alignment 13-46	1.2 miles	S	0,000 ft	205.0 MPH	125 MPH	171.69483	42.081902	150.17342	150.2 MPH	125 MPH	31.26	137.5867
	Alignment 13-47	0.8 miles	C	7,017 ft	125.0 MPH	125 MPH	156.41771	82.362	141.58302	125.0 MPH	125 MPH	21.96	125.0000
	Alignment 13-48	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	168.15971	54.518907	148.15986	148.2 MPH	125 MPH	28.76	136.5799
	Alignment 13-49	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	156.681	81.860037	141.7285	125.0 MPH	125 MPH	22.16	125.0000
	Alignment 13-50	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	177.72884	0	129.639	129.6 MPH	45 MPH	55.43	89.3980
	Alignment 13-51	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 13-52	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 13-53	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 13-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 13-55	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 13-56	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 13 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horiz Curv	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 13-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
	Alignment 13-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
	Alignment 13-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
	Alignment 13-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
	Alignment 13-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
	Alignment 13-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
	Alignment 13-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
	Alignment 13-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
	Alignment 13-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
	Alignment 13-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
	Alignment 13-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
	Alignment 13-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
	Alignment 13-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	290.95605	291.0 MPH	291 MPH	15.93	264.7483
	Alignment 13-14	0.4 miles	C	70,000 ft	311.0 MPH	291 MPH	308.15467	282.15563	299.7001	299.7 MPH	291 MPH	5.30	295.3390
	Alignment 13-15	2.0 miles	S	0,000 ft	311.0 MPH	291 MPH	362.15184	248.86354	311.0441	311.0 MPH	250 MPH	24.74	285.4514
	Alignment 13-16	0.5 miles	C	17,017 ft	249.7 MPH	250 MPH	272.15154	237.91675	255.64669	249.7 MPH	238 MPH	7.22	246.8108
	Alignment 13-17	0.8 miles	C	60,000 ft	311.0 MPH	238 MPH	272.99526	218.83962	247.47466	247.5 MPH	219 MPH	11.53	235.6092
	Alignment 13-18	0.7 miles	S	0,000 ft	311.0 MPH	219 MPH	252.43231	200.61443	228.126	228.1 MPH	201 MPH	11.05	216.7850
	Alignment 13-19	0.4 miles	C	11,017 ft	200.9 MPH	201 MPH	221.40796	190.05684	211.40288	200.9 MPH	201 MPH	6.55	200.9001
	Alignment 13-20	0.1 miles	S	0,000 ft	311.0 MPH	201 MPH	206.33531	198.18537	203.56163	203.6 MPH	201 MPH	1.66	202.1922
	Alignment 13-21	0.4 miles	C	11,000 ft	200.7 MPH	201 MPH	221.19136	189.94338	211.21794	200.7 MPH	201 MPH	6.53	200.7496
	Alignment 13-22	0.6 miles	S	0,000 ft	311.0 MPH	201 MPH	234.92514	181.6927	234.92514	234.9 MPH	235 MPH	10.39	217.8374
	Alignment 13-24	0.1 miles	S	0,000 ft	311.0 MPH	235 MPH	238.12197	233.34437	238.12197	238.1 MPH	238 MPH	0.97	236.5236
	Alignment 13-25	0.2 miles	C	18,017 ft	256.9 MPH	238 MPH	248.05257	233.10689	248.05257	248.1 MPH	248 MPH	3.02	243.0873
	Alignment 13-26	0.4 miles	C	18,000 ft	256.8 MPH	248 MPH	265.41692	239.09366	261.1439	256.8 MPH	257 MPH	5.32	254.6148
	Alignment 13-27	2.5 miles	S	0,000 ft	311.0 MPH	257 MPH	355.2656	190.90818	310.88153	310.9 MPH	259 MPH	32.20	284.3793
	Alignment 13-28	0.5 miles	C	22,017 ft	284.0 MPH	259 MPH	280.99563	247.52189	265.01184	265.0 MPH	248 MPH	7.00	257.9421
	Alignment 13-29	0.4 miles	C	22,000 ft	283.9 MPH	248 MPH	264.59668	239.45716	252.5979	252.6 MPH	240 MPH	5.23	247.3685
	Alignment 13-30	0.2 miles	S	0,000 ft	311.0 MPH	240 MPH	250.92596	234.46635	243.09343	243.1 MPH	235 MPH	3.40	239.7380
	Alignment 13-31	0.5 miles	C	18,000 ft	256.8 MPH	235 MPH	259.87369	221.81013	241.67989	241.7 MPH	222 MPH	8.01	233.4871
	Alignment 13-32	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
	Alignment 13-33	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
	Alignment 13-34	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
	Alignment 13-35	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
	Alignment 13-36	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
	Alignment 13-37	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
	Alignment 13-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
	Alignment 13-39	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	206.71525	206.7 MPH	201 MPH	6.40	200.3466
	Alignment 13-40	0.3 miles	S	0,000 ft	311.0 MPH	201 MPH	219.29981	191.40572	206.10241	206.1 MPH	192 MPH	5.84	200.2468
	Alignment 13-41	0.2 miles	S	0,000 ft	311.0 MPH	192 MPH	203.34214	186.19647	195.34204	195.3 MPH	187 MPH	3.55	191.8861
	Alignment 13-42	0.6 miles	C	28,017 ft	311.0 MPH	187 MPH	224.32934	165.68973	197.33177	197.3 MPH	166 MPH	12.66	184.2697
	Alignment 13-43	0.2 miles	S	0,000 ft	311.0 MPH	166 MPH	178.56662	159.48825	169.60506	169.6 MPH	160 MPH	3.97	165.6819
	Alignment 13-44	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	213.75927	125.8285	188.86337	160.1 MPH	160 MPH	19.02	160.1428
	Alignment 13-45	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.12999	139.86205	178.58035	160.3 MPH	160 MPH	11.78	160.3310
	Alignment 13-46	1.2 miles	S	0,000 ft	311.0 MPH	160 MPH	232.39936	0	199.64423	199.6 MPH	160 MPH	23.89	179.9878
	Alignment 13-47	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	209.21027	129.86404	186.38013	160.3 MPH	160 MPH	17.12	160.3314
	Alignment 13-48	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	227.05729	0	196.46976	196.5 MPH	160 MPH	22.02	178.3533
	Alignment 13-49	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	209.46812	129.31274	186.44384	160.1 MPH	160 MPH	17.30	160.1428
BECKLEY AVE.	Alignment 13-50	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.36369	0	176.04056	176.0 MPH	61 MPH	39.78	124.5514
	Alignment 13-51	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 13-52	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 13-53	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 13-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 13-55	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 13-56	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 13 - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 13-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 13-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 13-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 13-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 13-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 13-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 13-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 13-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 13-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 13-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 13-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 13-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 13-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 13-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
Alignment 13-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	381.7164	381.7 MPH	339 MPH	19.40	364.0325
Alignment 13-16	0.5 miles	C	17,017 ft	339.3 MPH	339 MPH	356.1614	321.5646	342.3704	339.3 MPH	328 MPH	5.31	335.6457
Alignment 13-17	0.8 miles	C	60,000 ft	621.0 MPH	328 MPH	354.2124	299.5022	328.2274	328.2 MPH	300 MPH	8.65	314.2256
Alignment 13-18	0.7 miles	S	0,000 ft	621.0 MPH	300 MPH	325.2093	272.4682	300.2454	300.2 MPH	273 MPH	8.35	286.7474
Alignment 13-19	0.4 miles	C	11,017 ft	273.0 MPH	273 MPH	288.434	256.6573	280.8272	273.0 MPH	273 MPH	4.82	273.0084
Alignment 13-20	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	277.0324	268.9241	274.9263	274.9 MPH	273 MPH	1.23	273.9136
Alignment 13-21	0.4 miles	C	11,000 ft	272.8 MPH	273 MPH	288.179	256.5088	280.5968	272.8 MPH	273 MPH	4.80	272.8039
Alignment 13-22	0.6 miles	S	0,000 ft	621.0 MPH	273 MPH	298.8501	243.9929	298.8501	298.9 MPH	299 MPH	7.92	285.8270
Alignment 13-24	0.1 miles	S	0,000 ft	621.0 MPH	299 MPH	301.3695	296.3091	301.3695	301.4 MPH	301 MPH	0.77	300.1098
Alignment 13-25	0.2 miles	C	18,017 ft	349.1 MPH	301 MPH	309.2759	293.2501	309.2759	309.3 MPH	309 MPH	2.40	305.3227
Alignment 13-26	0.4 miles	C	18,000 ft	349.0 MPH	309 MPH	323.3692	294.509	323.3692	323.4 MPH	323 MPH	4.28	316.3226
Alignment 13-27	2.5 miles	S	0,000 ft	621.0 MPH	323 MPH	405.999	210.476	386.0442	386.0 MPH	365 MPH	25.44	359.9390
Alignment 13-28	0.5 miles	C	22,017 ft	385.9 MPH	365 MPH	380.9233	348.3496	365.3105	365.3 MPH	349 MPH	5.05	357.3047
Alignment 13-29	0.4 miles	C	22,000 ft	385.8 MPH	349 MPH	360.9825	336.5911	349.1972	349.2 MPH	337 MPH	3.77	343.1941
Alignment 13-30	0.2 miles	S	0,000 ft	621.0 MPH	337 MPH	344.8664	328.9455	337.0266	337.0 MPH	329 MPH	2.45	333.0265
Alignment 13-31	0.5 miles	C	18,000 ft	349.0 MPH	329 MPH	347.2036	309.7284	329.1279	329.1 MPH	310 MPH	5.85	319.6270
Alignment 13-32	1.0 miles	C	18,017 ft	349.1 MPH	310 MPH	344.8114	270.7492	310.1096	310.1 MPH	271 MPH	11.92	290.6093
Alignment 13-33	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 13-34	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 13-35	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 13-36	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 13-37	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 13-38	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 13-39	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 13-40	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	269.5122	269.5 MPH	266 MPH	4.41	264.9164
Alignment 13-41	0.2 miles	S	0,000 ft	621.0 MPH	266 MPH	274.2992	257.4334	266.2743	266.3 MPH	258 MPH	2.60	262.2655
Alignment 13-42	0.6 miles	C	28,017 ft	435.4 MPH	258 MPH	286.2143	226.2948	258.3096	258.3 MPH	227 MPH	9.61	242.8065
Alignment 13-43	0.2 miles	S	0,000 ft	621.0 MPH	227 MPH	236.3452	217.2532	227.1766	227.2 MPH	218 MPH	2.96	222.4845
Alignment 13-44	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	259.6281	165.2638	239.5476	217.6 MPH	218 MPH	14.00	217.6222
Alignment 13-45	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.5187	186.8942	231.582	217.9 MPH	218 MPH	8.67	217.8774
Alignment 13-46	1.2 miles	S	0,000 ft	621.0 MPH	218 MPH	275.2714	138.4477	248.2392	248.2 MPH	218 MPH	18.45	233.0589
Alignment 13-47	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	255.9957	171.4885	237.7024	217.9 MPH	218 MPH	12.60	217.8785
Alignment 13-48	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	270.7765	147.0449	245.6413	245.6 MPH	218 MPH	16.95	231.6955
Alignment 13-49	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	256.1066	170.67	228.9046	217.6 MPH	198 MPH	13.00	213.1212
Alignment 13-50	1.4 miles	S	0,000 ft	621.0 MPH	198 MPH	267.9827	81.19906	198.3582	198.4 MPH	83 MPH	35.19	140.8218
Alignment 13-51	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 13-52	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 13-53	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
Alignment 13-54	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
Alignment 13-55	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 13-56	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-3) Alignment 14

Alignment - 14 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 14-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 14-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 14-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 14-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 14-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 14-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 14-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 14-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 14-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 14-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 14-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 14-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 14-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 14-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 14-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	225.72297	205.0 MPH	195 MPH	34.61	204.0596
	Alignment 14-16	0.5 miles	C	17,017 ft	150.0 MPH	195 MPH	209.19735	179.68436	195.1455	150.0 MPH	180 MPH	17.93	99.3567
	Alignment 14-17	0.8 miles	C	60,000 ft	250.0 MPH	180 MPH	202.86256	153.7751	180.09611	180.1 MPH	154 MPH	16.26	167.0958
	Alignment 14-18	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	177.28748	126.49565	154.20741	154.2 MPH	127 MPH	17.02	140.7058
	Alignment 14-19	0.4 miles	C	11,017 ft	125.0 MPH	127 MPH	142.71743	109.04006	127.41324	125.0 MPH	110 MPH	11.10	118.5937
	Alignment 14-20	0.1 miles	S	0,000 ft	205.0 MPH	110 MPH	114.81911	104.95986	110.49757	110.5 MPH	106 MPH	3.10	108.4480
BECKLEY AVE.	Alignment 14-21	0.4 miles	C	11,000 ft	125.0 MPH	106 MPH	124.32992	83.750046	106.49631	106.5 MPH	85 MPH	13.65	95.9851
	Alignment 14-22	0.6 miles	S	0,000 ft	205.0 MPH	85 MPH	120.47066	0	85.185623	85.2 MPH	0 MPH	53.00	42.6852
	Alignment 14-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 14-24	0.1 miles	S	0,000 ft	205.0 MPH	0 MPH	27.207126	0	27.207126	27.2 MPH	27 MPH	16.89	13.6036
	Alignment 14-25	0.2 miles	C	18,017 ft	125.0 MPH	27 MPH	55.708858	0	55.708858	55.7 MPH	56 MPH	17.70	41.4580
	Alignment 14-26	0.4 miles	C	18,000 ft	125.0 MPH	56 MPH	86.416312	0	86.416312	86.4 MPH	86 MPH	19.06	71.0626
	Alignment 14-27	0.9 miles	S	0,000 ft	205.0 MPH	86 MPH	133.57346	0	129.35778	129.4 MPH	125 MPH	29.37	109.6644
	Alignment 14-28	0.7 miles	C	7,017 ft	125.0 MPH	125 MPH	153.05526	88.453865	139.73352	125.0 MPH	125 MPH	19.37	125.0000
	Alignment 14-29	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.69844	92.412008	135.77743	125.0 MPH	119 MPH	17.68	124.3681
	Alignment 14-30	0.4 miles	S	0,000 ft	205.0 MPH	119 MPH	136.14714	98.923996	119.44882	119.4 MPH	100 MPH	12.35	109.9387
	Alignment 14-31	0.3 miles	C	7,000 ft	100.0 MPH	100 MPH	118.19399	77.654238	109.47561	100.0 MPH	100 MPH	12.32	100.0000
	Alignment 14-32	0.3 miles	C	7,017 ft	100.0 MPH	100 MPH	118.4649	77.24032	109.62193	100.0 MPH	100 MPH	12.52	100.0000
	Alignment 14-33	0.5 miles	C	7,000 ft	100.0 MPH	100 MPH	125.58507	65.02607	113.51566	100.0 MPH	100 MPH	17.92	100.0000
	Alignment 14-34	1.1 miles	C	18,017 ft	150.0 MPH	100 MPH	151.32698	0	165.20269	150.0 MPH	178 MPH	33.49	119.5623
	Alignment 14-35	0.3 miles	C	18,017 ft	150.0 MPH	178 MPH	187.33761	168.14464	178.40457	150.0 MPH	169 MPH	9.43	112.3056
	Alignment 14-36	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 14-37	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 14-38	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 14-39	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 14-40	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 14-41	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 14-42	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 14-43	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	166.97304	167.0 MPH	164 MPH	7.15	163.4192
	Alignment 14-44	0.2 miles	S	0,000 ft	205.0 MPH	164 MPH	170.56047	157.16592	164.40024	164.4 MPH	158 MPH	4.22	161.3767
	Alignment 14-45	0.6 miles	C	28,017 ft	250.0 MPH	158 MPH	180.22184	132.09121	158.38073	158.4 MPH	133 MPH	15.99	145.8751
	Alignment 14-46	0.2 miles	S	0,000 ft	205.0 MPH	133 MPH	140.74267	124.77781	133.10428	133.1 MPH	125 MPH	5.10	129.1030
	Alignment 14-47	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	159.49266	76.237077	143.28801	125.0 MPH	125 MPH	24.37	125.0000
	Alignment 14-48	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.34086	97.676365	136.62783	125.0 MPH	125 MPH	15.11	125.0000
	Alignment 14-49	1.2 miles	S	0,000 ft	205.0 MPH	125 MPH	171.69483	42.081902	150.17342	150.2 MPH	125 MPH	31.26	137.5867
	Alignment 14-50	0.8 miles	C	7,017 ft	125.0 MPH	125 MPH	156.41771	82.362	141.58302	125.0 MPH	125 MPH	21.96	125.0000
	Alignment 14-51	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	168.15971	54.518907	148.15986	148.2 MPH	125 MPH	28.76	136.5799
	Alignment 14-52	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	156.681	81.860037	141.7285	125.0 MPH	125 MPH	22.16	125.0000
	Alignment 14-53	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	177.72884	0	129.639	129.6 MPH	45 MPH	55.43	89.3980
	Alignment 14-54	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 14-55	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 14-56	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 14-57	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 14-58	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 14-59	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment - 14 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
											(sec)	
Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)		(mph)
Alignment 14-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
Alignment 14-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
Alignment 14-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
Alignment 14-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
Alignment 14-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
Alignment 14-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
Alignment 14-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
Alignment 14-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
Alignment 14-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
Alignment 14-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
Alignment 14-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
Alignment 14-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
Alignment 14-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	280.67367	280.7 MPH	270 MPH	16.05	262.7865
Alignment 14-14	0.4 miles	C	70,000 ft	311.0 MPH	270 MPH	288.45083	260.49257	275.06806	275.1 MPH	261 MPH	5.82	269.2258
Alignment 14-15	2.0 miles	S	0,000 ft	311.0 MPH	261 MPH	338.51729	213.00953	283.18718	283.2 MPH	214 MPH	27.77	254.2998
Alignment 14-16	0.5 miles	C	17,017 ft	249.7 MPH	214 MPH	239.83233	200.14362	221.26969	221.3 MPH	201 MPH	8.37	212.8507
Alignment 14-17	0.8 miles	C	60,000 ft	311.0 MPH	201 MPH	241.41958	177.89823	212.09362	212.1 MPH	178 MPH	13.73	197.8701
Alignment 14-18	0.7 miles	S	0,000 ft	311.0 MPH	178 MPH	217.8189	154.81973	189.03713	189.0 MPH	155 MPH	13.70	174.8345
Alignment 14-19	0.4 miles	C	11,017 ft	200.9 MPH	155 MPH	180.79164	140.66177	162.12128	162.1 MPH	141 MPH	8.58	153.3257
Alignment 14-20	0.1 miles	S	0,000 ft	311.0 MPH	141 MPH	148.64182	137.10424	143.41965	143.4 MPH	138 MPH	2.38	141.1728
Alignment 14-21	0.4 miles	C	11,000 ft	200.7 MPH	138 MPH	166.34062	121.74592	145.86501	145.9 MPH	122 MPH	9.64	135.9155
Alignment 14-22	0.6 miles	S	0,000 ft	311.0 MPH	122 MPH	172.54972	0	122.01108	122.0 MPH	0 MPH	37.08	61.0111
Alignment 14-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
Alignment 14-24	0.1 miles	S	0,000 ft	311.0 MPH	0 MPH	38.887658	0	38.887658	38.9 MPH	39 MPH	11.82	19.4438
Alignment 14-25	0.2 miles	C	18,017 ft	256.9 MPH	39 MPH	79.625721	0	79.625721	79.6 MPH	80 MPH	12.38	59.2567
Alignment 14-26	0.4 miles	C	18,000 ft	256.8 MPH	80 MPH	123.51646	0	123.51646	123.5 MPH	124 MPH	13.34	101.5711
Alignment 14-27	0.9 miles	S	0,000 ft	311.0 MPH	124 MPH	190.91907	0	176.2899	176.3 MPH	160 MPH	20.89	154.1771
Alignment 14-28	0.7 miles	C	7,017 ft	160.3 MPH	160 MPH	204.06633	133.81052	183.42408	160.3 MPH	160 MPH	15.10	160.3311
Alignment 14-29	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.29997	136.23766	181.33643	160.1 MPH	160 MPH	13.73	160.1428
Alignment 14-30	0.4 miles	S	0,000 ft	311.0 MPH	160 MPH	185.967	145.8447	173.53594	173.5 MPH	160 MPH	8.14	166.8394
Alignment 14-31	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	183.72771	147.22738	172.33919	160.1 MPH	160 MPH	7.70	160.1428
Alignment 14-32	0.3 miles	C	7,017 ft	160.3 MPH	160 MPH	184.08382	147.00948	172.52909	160.3 MPH	160 MPH	7.81	160.3301
Alignment 14-33	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	193.48603	140.97556	177.59865	160.1 MPH	160 MPH	11.19	160.1428
Alignment 14-34	1.1 miles	C	18,017 ft	256.9 MPH	160 MPH	228.03401	0	216.351	216.4 MPH	204 MPH	20.84	192.1974
Alignment 14-35	0.3 miles	C	18,017 ft	256.9 MPH	204 MPH	220.4207	195.46002	208.56808	208.6 MPH	196 MPH	5.21	203.3503
Alignment 14-36	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
Alignment 14-37	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
Alignment 14-38	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
Alignment 14-39	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
Alignment 14-40	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
Alignment 14-41	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
Alignment 14-42	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	206.71525	206.7 MPH	201 MPH	6.40	200.3466
Alignment 14-43	0.3 miles	S	0,000 ft	311.0 MPH	201 MPH	219.29981	191.40572	206.10241	206.1 MPH	192 MPH	5.84	200.2468
Alignment 14-44	0.2 miles	S	0,000 ft	311.0 MPH	192 MPH	203.34214	186.19647	195.34204	195.3 MPH	187 MPH	3.55	191.8861
Alignment 14-45	0.6 miles	C	28,017 ft	311.0 MPH	187 MPH	224.32934	165.68973	197.33177	197.3 MPH	166 MPH	12.66	184.2697
Alignment 14-46	0.2 miles	S	0,000 ft	311.0 MPH	166 MPH	178.56662	159.48825	169.60506	169.6 MPH	160 MPH	3.97	165.6819
Alignment 14-47	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	213.75927	125.8285	188.86337	160.1 MPH	160 MPH	19.02	160.1428
Alignment 14-48	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.12999	139.86205	178.58035	160.3 MPH	160 MPH	11.78	160.3310
Alignment 14-49	1.2 miles	S	0,000 ft	311.0 MPH	160 MPH	232.39936	0	199.64423	199.6 MPH	160 MPH	23.89	179.9878
Alignment 14-50	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	209.21027	129.86404	186.38013	160.3 MPH	160 MPH	17.12	160.3314
Alignment 14-51	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	227.05729	0	196.46976	196.5 MPH	160 MPH	22.02	178.3533
Alignment 14-52	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	209.46812	129.31274	186.44384	160.1 MPH	160 MPH	17.30	160.1428
Alignment 14-53	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.36369	0	176.04056	176.0 MPH	61 MPH	39.78	124.5514
Alignment 14-54	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
Alignment 14-55	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
Alignment 14-56	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
Alignment 14-57	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
Alignment 14-58	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
Alignment 14-59	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment - 14 - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 14-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 14-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 14-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 14-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 14-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 14-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 14-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 14-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 14-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 14-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 14-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 14-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 14-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 14-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	357.1627	357.2 MPH	354 MPH	4.44	352.3302
Alignment 14-15	2.0 miles	S	0,000 ft	621.0 MPH	354 MPH	414.4743	280.79	354.0833	354.1 MPH	281 MPH	22.24	317.5832
Alignment 14-16	0.5 miles	C	17,017 ft	339.3 MPH	281 MPH	301.1388	259.3019	281.3224	281.3 MPH	260 MPH	6.58	270.8176
Alignment 14-17	0.8 miles	C	60,000 ft	621.0 MPH	260 MPH	292.3738	222.9744	260.011	260.0 MPH	223 MPH	11.25	241.5110
Alignment 14-18	0.7 miles	S	0,000 ft	621.0 MPH	223 MPH	255.9103	184.3039	223.288	223.3 MPH	185 MPH	11.72	204.2859
Alignment 14-19	0.4 miles	C	11,017 ft	273.0 MPH	185 MPH	207.0884	159.8887	185.0481	185.0 MPH	160 MPH	7.63	172.5480
Alignment 14-20	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	166.7735	152.9268	160.035	160.0 MPH	153 MPH	2.15	156.5348
Alignment 14-21	0.4 miles	C	11,000 ft	272.8 MPH	153 MPH	178.981	121.5886	153.1636	153.2 MPH	122 MPH	9.52	137.6628
Alignment 14-22	0.6 miles	S	0,000 ft	621.0 MPH	122 MPH	172.5497	0	122.0111	122.0 MPH	0 MPH	37.08	61.0111
Alignment 14-23-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
Alignment 14-24	0.1 miles	S	0,000 ft	621.0 MPH	0 MPH	38.88766	0	38.88766	38.9 MPH	39 MPH	11.82	19.4438
Alignment 14-25	0.2 miles	C	18,017 ft	349.1 MPH	39 MPH	79.62572	0	79.62572	79.6 MPH	80 MPH	12.38	59.2567
Alignment 14-26	0.4 miles	C	18,000 ft	349.0 MPH	80 MPH	123.5165	0	123.5165	123.5 MPH	124 MPH	13.34	101.5711
Alignment 14-27	0.9 miles	S	0,000 ft	621.0 MPH	124 MPH	190.9191	0	190.9191	190.9 MPH	191 MPH	20.48	157.2178
Alignment 14-28	0.7 miles	C	7,017 ft	217.9 MPH	191 MPH	228.882	143.2243	223.3231	217.9 MPH	218 MPH	11.62	208.3746
Alignment 14-29	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.664	181.3424	233.6592	217.6 MPH	218 MPH	10.11	217.6222
Alignment 14-30	0.4 miles	S	0,000 ft	621.0 MPH	218 MPH	237.2708	196.0138	227.6586	227.7 MPH	218 MPH	6.10	222.6404
Alignment 14-31	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	235.5198	198.1143	226.7477	217.6 MPH	218 MPH	5.66	217.6222
Alignment 14-32	0.3 miles	C	7,017 ft	217.9 MPH	218 MPH	235.7977	197.7834	226.892	217.9 MPH	218 MPH	5.75	217.8751
Alignment 14-33	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	243.2089	188.5956	230.7704	217.6 MPH	218 MPH	8.23	217.6222
Alignment 14-34	1.1 miles	C	18,017 ft	349.1 MPH	218 MPH	271.5018	144.9332	271.5018	271.5 MPH	272 MPH	16.37	244.5620
Alignment 14-35	0.3 miles	C	18,017 ft	349.1 MPH	272 MPH	284.0466	258.3485	277.6	277.6 MPH	271 MPH	3.86	274.4205
Alignment 14-36	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 14-37	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 14-38	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 14-39	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 14-40	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 14-41	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 14-42	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 14-43	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	269.5122	269.5 MPH	266 MPH	4.41	264.9164
Alignment 14-44	0.2 miles	S	0,000 ft	621.0 MPH	266 MPH	274.2992	257.4334	266.2743	266.3 MPH	258 MPH	2.60	262.2655
Alignment 14-45	0.6 miles	C	28,017 ft	435.4 MPH	258 MPH	286.2143	226.2948	258.3096	258.3 MPH	227 MPH	9.61	242.8065
Alignment 14-46	0.2 miles	S	0,000 ft	621.0 MPH	227 MPH	236.3452	217.2532	227.1766	227.2 MPH	218 MPH	2.96	222.4845
Alignment 14-47	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	259.6281	165.2638	239.5476	217.6 MPH	218 MPH	14.00	217.6222
Alignment 14-48	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.5187	186.8942	231.582	217.9 MPH	218 MPH	8.67	217.8774
Alignment 14-49	1.2 miles	S	0,000 ft	621.0 MPH	218 MPH	275.2714	138.4477	248.2392	248.2 MPH	218 MPH	18.45	233.0589
Alignment 14-50	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	255.9957	171.4885	237.7024	217.9 MPH	218 MPH	12.60	217.8785
Alignment 14-51	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	270.7765	147.0449	245.6413	245.6 MPH	218 MPH	16.95	231.6955
Alignment 14-52	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	256.1066	170.67	228.9046	217.6 MPH	198 MPH	13.00	213.1212
Alignment 14-53	1.4 miles	S	0,000 ft	621.0 MPH	198 MPH	267.9827	81.19906	198.3582	198.4 MPH	83 MPH	35.19	140.8218
Alignment 14-54	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 14-55	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 14-56	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
Alignment 14-57	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
Alignment 14-58	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 14-59	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 14 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 14-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 14-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 14-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 14-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 14-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 14-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 14-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 14-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 14-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 14-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 14-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 14-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 14-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 14-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 14-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 14-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	159.27732	150.0 MPH	150 MPH	11.88	150.0000
	Alignment 14-17	0.8 miles	C	60,000 ft	250.0 MPH	150 MPH	176.7858	117.24666	164.85936	164.9 MPH	152 MPH	17.21	157.8936
	Alignment 14-18	0.7 miles	S	0,000 ft	205.0 MPH	152 MPH	175.55299	124.05301	152.38742	152.4 MPH	125 MPH	17.24	138.8820
	Alignment 14-19	0.4 miles	C	11,017 ft	125.0 MPH	125 MPH	140.94065	106.70396	133.20898	125.0 MPH	125 MPH	10.53	125.0000
	Alignment 14-20	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	129.26108	120.58844	127.14839	127.1 MPH	125 MPH	2.67	126.0742
BECKLEY AVE.	Alignment 14-21	0.4 miles	C	11,000 ft	125.0 MPH	125 MPH	140.87913	106.78516	133.17644	125.0 MPH	125 MPH	10.48	125.0000
	Alignment 14-22	0.6 miles	S	0,000 ft	205.0 MPH	125 MPH	151.371	91.306184	151.371	151.4 MPH	151 MPH	16.37	138.1855
	Alignment 14-24	0.1 miles	S	0,000 ft	205.0 MPH	151 MPH	153.79665	148.90585	167.41178	167.4 MPH	180 MPH	2.14	107.1999
	Alignment 14-25	0.2 miles	C	18,017 ft	125.0 MPH	180 MPH	186.44905	173.31114	180.33198	125.0 MPH	174 MPH	19.34	37.9249
	Alignment 14-26	0.4 miles	C	18,000 ft	125.0 MPH	174 MPH	186.11905	160.97111	174.01336	125.0 MPH	161 MPH	20.02	67.6737
	Alignment 14-27	0.9 miles	S	0,000 ft	205.0 MPH	161 MPH	190.5127	124.68725	161.12121	161.1 MPH	125 MPH	22.50	143.1208
	Alignment 14-28	0.7 miles	C	7,017 ft	125.0 MPH	125 MPH	153.05526	88.453865	139.73352	125.0 MPH	125 MPH	19.37	125.0000
	Alignment 14-29	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.69844	92.412008	135.77743	125.0 MPH	119 MPH	17.68	124.3681
	Alignment 14-30	0.4 miles	S	0,000 ft	205.0 MPH	119 MPH	136.14714	98.923996	119.44882	119.4 MPH	100 MPH	12.35	109.9387
	Alignment 14-31	0.3 miles	C	7,000 ft	100.0 MPH	100 MPH	118.19399	77.654238	109.47561	100.0 MPH	100 MPH	12.32	100.0000
	Alignment 14-32	0.3 miles	C	7,017 ft	100.0 MPH	100 MPH	118.4649	77.24032	109.62193	100.0 MPH	100 MPH	12.52	100.0000
	Alignment 14-33	0.5 miles	C	7,000 ft	100.0 MPH	100 MPH	125.58507	65.02607	113.51566	100.0 MPH	100 MPH	17.92	100.0000
	Alignment 14-34	1.1 miles	C	18,017 ft	150.0 MPH	100 MPH	151.32698	0	165.20269	150.0 MPH	178 MPH	33.49	119.5623
	Alignment 14-35	0.3 miles	C	18,017 ft	150.0 MPH	178 MPH	187.33761	168.14464	178.40457	150.0 MPH	169 MPH	9.43	112.3056
	Alignment 14-36	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 14-37	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 14-38	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 14-39	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 14-40	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 14-41	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 14-42	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 14-43	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	166.97304	167.0 MPH	164 MPH	7.15	163.4192
	Alignment 14-44	0.2 miles	S	0,000 ft	205.0 MPH	164 MPH	170.56047	157.16592	164.40024	164.4 MPH	158 MPH	4.22	161.3767
	Alignment 14-45	0.6 miles	C	28,017 ft	250.0 MPH	158 MPH	180.22184	132.09121	158.38073	158.4 MPH	133 MPH	15.99	145.8751
	Alignment 14-46	0.2 miles	S	0,000 ft	205.0 MPH	133 MPH	140.74267	124.77781	133.10428	133.1 MPH	125 MPH	5.10	129.1030
	Alignment 14-47	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	159.49266	76.237077	143.28801	125.0 MPH	125 MPH	24.37	125.0000
	Alignment 14-48	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.34086	97.676365	136.62783	125.0 MPH	125 MPH	15.11	125.0000
	Alignment 14-49	1.2 miles	S	0,000 ft	205.0 MPH	125 MPH	171.69483	42.081902	150.17342	150.2 MPH	125 MPH	31.26	137.5867
	Alignment 14-50	0.8 miles	C	7,017 ft	125.0 MPH	125 MPH	156.41771	82.362	141.58302	125.0 MPH	125 MPH	21.96	125.0000
	Alignment 14-51	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	168.15971	54.518907	148.15986	148.2 MPH	125 MPH	28.76	136.5799
	Alignment 14-52	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	156.681	81.860037	141.7285	125.0 MPH	125 MPH	22.16	125.0000
	Alignment 14-53	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	177.72884	0	129.639	129.6 MPH	45 MPH	55.43	89.3980
	Alignment 14-54	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 14-55	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 14-56	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 14-57	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 14-58	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 14-59	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 14 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
											(sec)	
Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)		(mph)
Alignment 14-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
Alignment 14-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
Alignment 14-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
Alignment 14-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
Alignment 14-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
Alignment 14-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
Alignment 14-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
Alignment 14-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
Alignment 14-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
Alignment 14-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
Alignment 14-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
Alignment 14-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
Alignment 14-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	290.95605	291.0 MPH	291 MPH	15.93	264.7483
Alignment 14-14	0.4 miles	C	70,000 ft	311.0 MPH	291 MPH	308.15467	282.15563	299.7001	299.7 MPH	291 MPH	5.30	295.3390
Alignment 14-15	2.0 miles	S	0,000 ft	311.0 MPH	291 MPH	362.15184	248.86354	311.0441	311.0 MPH	250 MPH	24.74	285.4514
Alignment 14-16	0.5 miles	C	17,017 ft	249.7 MPH	250 MPH	272.15154	237.91675	255.64669	249.7 MPH	238 MPH	7.22	246.8108
Alignment 14-17	0.8 miles	C	60,000 ft	311.0 MPH	238 MPH	272.99526	218.83962	247.47466	247.5 MPH	219 MPH	11.53	235.6092
Alignment 14-18	0.7 miles	S	0,000 ft	311.0 MPH	219 MPH	252.43231	200.61443	228.126	228.1 MPH	201 MPH	11.05	216.7850
Alignment 14-19	0.4 miles	C	11,017 ft	200.9 MPH	201 MPH	221.40796	190.05684	211.40288	200.9 MPH	201 MPH	6.55	200.9001
Alignment 14-20	0.1 miles	S	0,000 ft	311.0 MPH	201 MPH	206.33531	198.18537	203.56163	203.6 MPH	201 MPH	1.66	202.1922
Alignment 14-21	0.4 miles	C	11,000 ft	200.7 MPH	201 MPH	221.19136	189.94338	211.21794	200.7 MPH	201 MPH	6.53	200.7496
Alignment 14-22	0.6 miles	S	0,000 ft	311.0 MPH	201 MPH	234.92514	181.6927	220.93644	220.9 MPH	206 MPH	10.67	211.9594
Alignment 14-24	0.1 miles	S	0,000 ft	311.0 MPH	206 MPH	209.63838	204.19543	207.33216	207.3 MPH	205 MPH	1.11	206.3479
Alignment 14-25	0.2 miles	C	18,017 ft	256.9 MPH	205 MPH	216.45555	199.15258	208.39027	208.4 MPH	200 MPH	3.58	204.9146
Alignment 14-26	0.4 miles	C	18,000 ft	256.8 MPH	200 MPH	221.16976	188.7742	205.71468	205.7 MPH	189 MPH	6.82	198.7587
Alignment 14-27	0.9 miles	S	0,000 ft	311.0 MPH	189 MPH	238.56817	159.20713	203.24978	203.2 MPH	160 MPH	17.37	185.3636
Alignment 14-28	0.7 miles	C	7,017 ft	160.3 MPH	160 MPH	204.06633	133.81052	183.42408	160.3 MPH	160 MPH	15.10	160.3311
Alignment 14-29	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.29997	136.23766	181.33643	160.1 MPH	160 MPH	13.73	160.1428
Alignment 14-30	0.4 miles	S	0,000 ft	311.0 MPH	160 MPH	185.967	145.8447	173.53594	173.5 MPH	160 MPH	8.14	166.8394
Alignment 14-31	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	183.72771	147.22738	172.33919	160.1 MPH	160 MPH	7.70	160.1428
Alignment 14-32	0.3 miles	C	7,017 ft	160.3 MPH	160 MPH	184.08382	147.00948	172.52909	160.3 MPH	160 MPH	7.81	160.3301
Alignment 14-33	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	193.48603	140.97556	177.59865	160.1 MPH	160 MPH	11.19	160.1428
Alignment 14-34	1.1 miles	C	18,017 ft	256.9 MPH	160 MPH	228.03401	0	216.351	216.4 MPH	204 MPH	20.84	192.1974
Alignment 14-35	0.3 miles	C	18,017 ft	256.9 MPH	204 MPH	220.4207	195.46002	208.56808	208.6 MPH	196 MPH	5.21	203.3503
Alignment 14-36	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
Alignment 14-37	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
Alignment 14-38	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
Alignment 14-39	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
Alignment 14-40	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
Alignment 14-41	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
Alignment 14-42	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	206.71525	206.7 MPH	201 MPH	6.40	200.3466
Alignment 14-43	0.3 miles	S	0,000 ft	311.0 MPH	201 MPH	219.29981	191.40572	206.10241	206.1 MPH	192 MPH	5.84	200.2468
Alignment 14-44	0.2 miles	S	0,000 ft	311.0 MPH	192 MPH	203.34214	186.19647	195.34204	195.3 MPH	187 MPH	3.55	191.8861
Alignment 14-45	0.6 miles	C	28,017 ft	311.0 MPH	187 MPH	224.32934	165.68973	197.33177	197.3 MPH	166 MPH	12.66	184.2697
Alignment 14-46	0.2 miles	S	0,000 ft	311.0 MPH	166 MPH	178.56662	159.48825	169.60506	169.6 MPH	160 MPH	3.97	165.6819
Alignment 14-47	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	213.75927	125.8285	188.86337	160.1 MPH	160 MPH	19.02	160.1428
Alignment 14-48	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.12999	139.86205	178.58035	160.3 MPH	160 MPH	11.78	160.3310
Alignment 14-49	1.2 miles	S	0,000 ft	311.0 MPH	160 MPH	232.39936	0	199.64423	199.6 MPH	160 MPH	23.89	179.9878
Alignment 14-50	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	209.21027	129.86404	186.38013	160.3 MPH	160 MPH	17.12	160.3314
Alignment 14-51	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	227.05729	0	196.46976	196.5 MPH	160 MPH	22.02	178.3533
Alignment 14-52	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	209.46812	129.31274	186.44384	160.1 MPH	160 MPH	17.30	160.1428
Alignment 14-53	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.36369	0	176.04056	176.0 MPH	61 MPH	39.78	124.5514
Alignment 14-54	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
Alignment 14-55	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
Alignment 14-56	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
Alignment 14-57	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
Alignment 14-58	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
Alignment 14-59	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 14 - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	
							based on distance	based on distance	Speed (theo)			Segment	Avg. Speed
												Time	
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 14-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
	Alignment 14-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
	Alignment 14-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
	Alignment 14-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
	Alignment 14-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
	Alignment 14-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
	Alignment 14-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
BECKLEY AVE.	Alignment 14-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
	Alignment 14-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
	Alignment 14-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
	Alignment 14-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
	Alignment 14-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
	Alignment 14-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
	Alignment 14-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
	Alignment 14-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	381.7164	381.7 MPH	339 MPH	19.40	364.0325
	Alignment 14-16	0.5 miles	C	17,017 ft	339.3 MPH	339 MPH	356.1614	321.5646	342.3704	339.3 MPH	328 MPH	5.31	335.6457
	Alignment 14-17	0.8 miles	C	60,000 ft	621.0 MPH	328 MPH	354.2124	299.5022	328.2274	328.2 MPH	300 MPH	8.65	314.2256
	Alignment 14-18	0.7 miles	S	0,000 ft	621.0 MPH	300 MPH	325.2093	272.4682	300.2454	300.2 MPH	273 MPH	8.35	286.7474
	Alignment 14-19	0.4 miles	C	11,017 ft	273.0 MPH	273 MPH	288.434	256.6573	280.8272	273.0 MPH	273 MPH	4.82	273.0084
	Alignment 14-20	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	277.0324	268.9241	274.9263	274.9 MPH	273 MPH	1.23	273.9136
	Alignment 14-21	0.4 miles	C	11,000 ft	272.8 MPH	273 MPH	288.179	256.5088	280.5968	272.8 MPH	273 MPH	4.80	272.8039
	Alignment 14-22	0.6 miles	S	0,000 ft	621.0 MPH	273 MPH	298.8501	243.9929	293.4752	293.5 MPH	288 MPH	7.95	284.7306
	Alignment 14-24	0.1 miles	S	0,000 ft	621.0 MPH	288 MPH	290.6136	285.3625	288.316	288.3 MPH	286 MPH	0.80	287.2781
	Alignment 14-25	0.2 miles	C	18,017 ft	349.1 MPH	286 MPH	294.3196	277.4311	286.2761	286.3 MPH	278 MPH	2.60	282.2672
	Alignment 14-26	0.4 miles	C	18,000 ft	349.0 MPH	278 MPH	293.5985	261.4726	278.2481	278.2 MPH	262 MPH	5.01	270.2444
	Alignment 14-27	0.9 miles	S	0,000 ft	621.0 MPH	262 MPH	299.7295	217.8307	262.0199	262.0 MPH	218 MPH	13.42	239.9591
	Alignment 14-28	0.7 miles	C	7,017 ft	217.9 MPH	218 MPH	251.8094	177.5786	235.3374	217.9 MPH	218 MPH	11.11	217.8776
	Alignment 14-29	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.664	181.3424	233.6592	217.6 MPH	218 MPH	10.11	217.6222
	Alignment 14-30	0.4 miles	S	0,000 ft	621.0 MPH	218 MPH	237.2708	196.0138	227.6586	227.7 MPH	218 MPH	6.10	222.6404
	Alignment 14-31	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	235.5198	198.1143	226.7477	217.6 MPH	218 MPH	5.66	217.6222
	Alignment 14-32	0.3 miles	C	7,017 ft	217.9 MPH	218 MPH	235.7977	197.7834	226.892	217.9 MPH	218 MPH	5.75	217.8751
	Alignment 14-33	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	243.2089	188.5956	230.7704	217.6 MPH	218 MPH	8.23	217.6222
	Alignment 14-34	1.1 miles	C	18,017 ft	349.1 MPH	218 MPH	271.5018	144.9332	271.5018	271.5 MPH	272 MPH	16.37	244.5620
	Alignment 14-35	0.3 miles	C	18,017 ft	349.1 MPH	272 MPH	284.0466	258.3485	277.6	277.6 MPH	271 MPH	3.86	274.4205
	Alignment 14-36	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
	Alignment 14-37	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
	Alignment 14-38	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
	Alignment 14-39	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
	Alignment 14-40	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
	Alignment 14-41	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
	Alignment 14-42	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
	Alignment 14-43	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	269.5122	269.5 MPH	266 MPH	4.41	264.9164
	Alignment 14-44	0.2 miles	S	0,000 ft	621.0 MPH	266 MPH	274.2992	257.4334	266.2743	266.3 MPH	258 MPH	2.60	262.2655
	Alignment 14-45	0.6 miles	C	28,017 ft	435.4 MPH	258 MPH	286.2143	226.2948	258.3096	258.3 MPH	227 MPH	9.61	242.8065
	Alignment 14-46	0.2 miles	S	0,000 ft	621.0 MPH	227 MPH	236.3452	217.2532	227.1766	227.2 MPH	218 MPH	2.96	222.4845
	Alignment 14-47	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	259.6281	165.2638	239.5476	217.6 MPH	218 MPH	14.00	217.6222
	Alignment 14-48	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.5187	186.8942	231.582	217.9 MPH	218 MPH	8.67	217.8774
	Alignment 14-49	1.2 miles	S	0,000 ft	621.0 MPH	218 MPH	275.2714	138.4477	248.2392	248.2 MPH	218 MPH	18.45	233.0589
	Alignment 14-50	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	255.9957	171.4885	237.7024	217.9 MPH	218 MPH	12.60	217.8785
	Alignment 14-51	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	270.7765	147.0449	245.6413	245.6 MPH	218 MPH	16.95	231.6955
	Alignment 14-52	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	256.1066	170.67	228.9046	217.6 MPH	198 MPH	13.00	213.1212
	Alignment 14-53	1.4 miles	S	0,000 ft	621.0 MPH	198 MPH	267.9827	81.19906	198.3582	198.4 MPH	83 MPH	35.19	140.8218
	Alignment 14-54	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 14-55	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
	Alignment 14-56	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 14-57	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
	Alignment 14-58	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
	Alignment 14-59	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-4) Alignment 15

Alignment 15 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 15-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 15-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 15-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 15-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 15-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 15-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 15-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 15-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 15-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 15-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 15-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 15-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 15-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 15-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 15-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	225.72297	205.0 MPH	195 MPH	34.61	204.0596
	Alignment 15-16	0.5 miles	C	17,017 ft	150.0 MPH	195 MPH	209.19735	179.68436	195.1455	150.0 MPH	180 MPH	17.93	99.3567
	Alignment 15-17	0.8 miles	C	60,000 ft	250.0 MPH	180 MPH	202.86256	153.7751	180.09611	180.1 MPH	154 MPH	16.26	167.0958
	Alignment 15-18	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	177.28748	126.49565	154.20741	154.2 MPH	127 MPH	17.02	140.7058
	Alignment 15-19	0.4 miles	C	11,017 ft	125.0 MPH	127 MPH	142.71743	109.04006	127.41324	125.0 MPH	110 MPH	11.10	118.5937
	Alignment 15-20	0.1 miles	S	0,000 ft	205.0 MPH	110 MPH	114.81911	104.95986	110.49757	110.5 MPH	106 MPH	3.10	108.4480
	Alignment 15-21	0.4 miles	C	11,000 ft	125.0 MPH	106 MPH	124.32992	83.750046	106.49631	106.5 MPH	85 MPH	13.65	95.9851
	Alignment 15-22	0.6 miles	S	0,000 ft	205.0 MPH	85 MPH	120.47066	0	85.185623	85.2 MPH	0 MPH	53.00	42.6852
BECKLEY AVE.	Alignment 15-23-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 15-24	0.1 miles	S	0,000 ft	205.0 MPH	0 MPH	27.207126	0	27.207126	27.2 MPH	27 MPH	16.89	13.6036
	Alignment 15-25	0.2 miles	C	18,017 ft	125.0 MPH	27 MPH	55.708858	0	55.708858	55.7 MPH	56 MPH	17.70	41.4580
	Alignment 15-26	0.4 miles	C	18,000 ft	125.0 MPH	56 MPH	86.416312	0	86.416312	86.4 MPH	86 MPH	19.06	71.0626
	Alignment 15-27	2.5 miles	S	0,000 ft	205.0 MPH	86 MPH	192.2706	0	172.43547	172.4 MPH	150 MPH	67.33	136.0025
	Alignment 15-28	0.5 miles	C	22,017 ft	150.0 MPH	150 MPH	168.26738	129.17464	159.3956	150.0 MPH	150 MPH	12.03	150.0000
	Alignment 15-29	0.4 miles	C	22,000 ft	150.0 MPH	150 MPH	163.29197	135.4095	156.78691	150.0 MPH	150 MPH	8.62	150.0000
	Alignment 15-30	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 15-31	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	184.562	150.0 MPH	199 MPH	17.44	107.2587
	Alignment 15-32	1.0 miles	C	18,017 ft	150.0 MPH	199 MPH	225.29718	168.65106	199.14796	150.0 MPH	169 MPH	28.81	120.2367
	Alignment 15-33	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 15-34	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 15-35	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 15-36	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 15-37	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 15-38	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 15-39	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 15-40	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	169.89406	169.9 MPH	170 MPH	7.12	164.1606
	Alignment 15-41	0.1 miles	S	0,000 ft	205.0 MPH	170 MPH	172.46919	167.27928	172.46919	172.5 MPH	172 MPH	1.60	171.1816
	Alignment 15-42	1.5 miles	C	28,017 ft	250.0 MPH	172 MPH	217.06086	111.24671	188.19062	188.2 MPH	154 MPH	30.99	174.0040
	Alignment 15-43	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	178.48142	124.80538	154.0789	154.1 MPH	125 MPH	18.10	139.5787
	Alignment 15-44	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.9823	101.14412	135.36038	125.0 MPH	125 MPH	13.40	125.0000
	Alignment 15-45	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 15-46	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 15-47	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 15-48	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 15-49	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
	Alignment 15-50	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 15-51	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 15-52	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 15-53	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 15-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 15-55	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 15-56	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 15 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
											(sec)	
Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)		(mph)
Alignment 15-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
Alignment 15-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
Alignment 15-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
Alignment 15-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
Alignment 15-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
Alignment 15-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
Alignment 15-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
Alignment 15-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
Alignment 15-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
Alignment 15-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
Alignment 15-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
Alignment 15-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
Alignment 15-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	280.67367	280.7 MPH	270 MPH	16.05	262.7865
Alignment 15-14	0.4 miles	C	70,000 ft	311.0 MPH	270 MPH	288.45083	260.49257	275.06806	275.1 MPH	261 MPH	5.82	269.2258
Alignment 15-15	2.0 miles	S	0,000 ft	311.0 MPH	261 MPH	338.51729	213.00953	283.18718	283.2 MPH	214 MPH	27.77	254.2998
Alignment 15-16	0.5 miles	C	17,017 ft	249.7 MPH	214 MPH	239.83233	200.14362	221.26969	221.3 MPH	201 MPH	8.37	212.8507
Alignment 15-17	0.8 miles	C	60,000 ft	311.0 MPH	201 MPH	241.41958	177.89823	212.09362	212.1 MPH	178 MPH	13.73	197.8701
Alignment 15-18	0.7 miles	S	0,000 ft	311.0 MPH	178 MPH	217.8189	154.81973	189.03713	189.0 MPH	155 MPH	13.70	174.8345
Alignment 15-19	0.4 miles	C	11,017 ft	200.9 MPH	155 MPH	180.79164	140.66177	162.12128	162.1 MPH	141 MPH	8.58	153.3257
Alignment 15-20	0.1 miles	S	0,000 ft	311.0 MPH	141 MPH	148.64182	137.10424	143.41965	143.4 MPH	138 MPH	2.38	141.1728
Alignment 15-21	0.4 miles	C	11,000 ft	200.7 MPH	138 MPH	166.34062	121.74592	145.86501	145.9 MPH	122 MPH	9.64	135.9155
Alignment 15-22	0.6 miles	S	0,000 ft	311.0 MPH	122 MPH	172.54972	0	122.01108	122.0 MPH	0 MPH	37.08	61.0111
Alignment 15-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
Alignment 15-24	0.1 miles	S	0,000 ft	311.0 MPH	0 MPH	38.887658	0	38.887658	38.9 MPH	39 MPH	11.82	19.4438
Alignment 15-25	0.2 miles	C	18,017 ft	256.9 MPH	39 MPH	79.625721	0	79.625721	79.6 MPH	80 MPH	12.38	59.2567
Alignment 15-26	0.4 miles	C	18,000 ft	256.8 MPH	80 MPH	123.51646	0	123.51646	123.5 MPH	124 MPH	13.34	101.5711
Alignment 15-27	2.5 miles	S	0,000 ft	311.0 MPH	124 MPH	274.81599	0	267.02512	267.0 MPH	259 MPH	46.05	198.8583
Alignment 15-28	0.5 miles	C	22,017 ft	284.0 MPH	259 MPH	280.99563	247.52189	265.01184	265.0 MPH	248 MPH	7.00	257.9421
Alignment 15-29	0.4 miles	C	22,000 ft	283.9 MPH	248 MPH	264.59668	239.45716	252.5979	252.6 MPH	240 MPH	5.23	247.3685
Alignment 15-30	0.2 miles	S	0,000 ft	311.0 MPH	240 MPH	250.92596	234.46635	243.09343	243.1 MPH	235 MPH	3.40	239.7380
Alignment 15-31	0.5 miles	C	18,000 ft	256.8 MPH	235 MPH	259.87369	221.81013	241.67989	241.7 MPH	222 MPH	8.01	233.4871
Alignment 15-32	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
Alignment 15-33	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
Alignment 15-34	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
Alignment 15-35	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
Alignment 15-36	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
Alignment 15-37	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
Alignment 15-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
Alignment 15-39	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	212.27668	212.3 MPH	212 MPH	6.36	201.8202
Alignment 15-40	0.3 miles	S	0,000 ft	311.0 MPH	212 MPH	229.67977	203.2155	227.84732	227.8 MPH	226 MPH	5.29	220.7897
Alignment 15-41	0.1 miles	S	0,000 ft	311.0 MPH	226 MPH	229.95028	224.041	227.48861	227.5 MPH	225 MPH	1.21	226.4314
Alignment 15-42	1.5 miles	C	28,017 ft	311.0 MPH	225 MPH	293.44618	182.3601	244.54004	244.5 MPH	183 MPH	24.64	218.8310
Alignment 15-43	0.7 miles	S	0,000 ft	311.0 MPH	183 MPH	223.87016	159.21489	194.63244	194.6 MPH	160 MPH	14.02	180.2700
Alignment 15-44	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.48675	142.30549	176.51189	160.1 MPH	160 MPH	10.46	160.1428
Alignment 15-45	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
Alignment 15-46	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
Alignment 15-47	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
Alignment 15-48	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	182.9558	183.0 MPH	183 MPH	6.93	171.5493
Alignment 15-49	0.9 miles	C	18,017 ft	256.9 MPH	183 MPH	236.01029	150.30795	200.43684	200.4 MPH	157 MPH	18.51	182.4426
Alignment 15-50	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
Alignment 15-51	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
Alignment 15-52	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
Alignment 15-53	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
Alignment 15-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
Alignment 15-55	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
Alignment 15-56	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 15 - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 15-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 15-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 15-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 15-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 15-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 15-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 15-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 15-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 15-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 15-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 15-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 15-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 15-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 15-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	357.1627	357.2 MPH	354 MPH	4.44	352.3302
Alignment 15-15	2.0 miles	S	0,000 ft	621.0 MPH	354 MPH	414.4743	280.79	354.0833	354.1 MPH	281 MPH	22.24	317.5832
Alignment 15-16	0.5 miles	C	17,017 ft	339.3 MPH	281 MPH	301.1388	259.3019	281.3224	281.3 MPH	260 MPH	6.58	270.8176
Alignment 15-17	0.8 miles	C	60,000 ft	621.0 MPH	260 MPH	292.3738	222.9744	260.011	260.0 MPH	223 MPH	11.25	241.5110
Alignment 15-18	0.7 miles	S	0,000 ft	621.0 MPH	223 MPH	255.9103	184.3039	223.288	223.3 MPH	185 MPH	11.72	204.2859
Alignment 15-19	0.4 miles	C	11,017 ft	273.0 MPH	185 MPH	207.0884	159.8887	185.0481	185.0 MPH	160 MPH	7.63	172.5480
Alignment 15-20	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	166.7735	152.9268	160.035	160.0 MPH	153 MPH	2.15	156.5348
Alignment 15-21	0.4 miles	C	11,000 ft	272.8 MPH	153 MPH	178.981	121.5886	153.1636	153.2 MPH	122 MPH	9.52	137.6628
Alignment 15-22	0.6 miles	S	0,000 ft	621.0 MPH	122 MPH	172.5497	0	122.0111	122.0 MPH	0 MPH	37.08	61.0111
Alignment 15-23-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
Alignment 15-24	0.1 miles	S	0,000 ft	621.0 MPH	0 MPH	38.88766	0	38.88766	38.9 MPH	39 MPH	11.82	19.4438
Alignment 15-25	0.2 miles	C	18,017 ft	349.1 MPH	39 MPH	79.62572	0	79.62572	79.6 MPH	80 MPH	12.38	59.2567
Alignment 15-26	0.4 miles	C	18,000 ft	349.0 MPH	80 MPH	123.5165	0	123.5165	123.5 MPH	124 MPH	13.34	101.5711
Alignment 15-27	2.5 miles	S	0,000 ft	621.0 MPH	124 MPH	274.816	0	274.816	274.8 MPH	275 MPH	45.98	199.1662
Alignment 15-28	0.5 miles	C	22,017 ft	385.9 MPH	275 MPH	295.6372	252.2822	295.6372	295.6 MPH	296 MPH	6.33	285.2266
Alignment 15-29	0.4 miles	C	22,000 ft	385.8 MPH	296 MPH	309.6914	280.8807	309.6914	309.7 MPH	310 MPH	4.27	302.6643
Alignment 15-30	0.2 miles	S	0,000 ft	621.0 MPH	310 MPH	318.2336	300.9069	318.2336	318.2 MPH	318 MPH	2.60	313.9625
Alignment 15-31	0.5 miles	C	18,000 ft	349.0 MPH	318 MPH	337.0192	298.2671	323.7916	323.8 MPH	310 MPH	5.88	318.0783
Alignment 15-32	1.0 miles	C	18,017 ft	349.1 MPH	310 MPH	344.8114	270.7492	310.1096	310.1 MPH	271 MPH	11.92	290.6093
Alignment 15-33	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 15-34	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 15-35	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 15-36	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 15-37	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 15-38	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 15-39	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 15-40	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	272.9793	273.0 MPH	273 MPH	4.40	265.7435
Alignment 15-41	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	276.2586	269.6601	276.2586	276.3 MPH	276 MPH	1.00	274.6189
Alignment 15-42	1.5 miles	C	28,017 ft	435.4 MPH	276 MPH	334.3718	202.0721	296.0646	296.1 MPH	252 MPH	19.41	277.7935
Alignment 15-43	0.7 miles	S	0,000 ft	621.0 MPH	252 MPH	283.0775	216.5067	252.48	252.5 MPH	218 MPH	10.74	235.2846
Alignment 15-44	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.6213	190.6252	229.9351	217.6 MPH	218 MPH	7.70	217.6222
Alignment 15-45	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.8281	186.4887	231.7454	217.9 MPH	218 MPH	8.77	217.8774
Alignment 15-46	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
Alignment 15-47	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
Alignment 15-48	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	234.9181	234.9 MPH	235 MPH	5.26	226.2702
Alignment 15-49	0.9 miles	C	18,017 ft	349.1 MPH	235 MPH	278.2347	181.5448	252.1344	252.1 MPH	223 MPH	14.09	239.7806
Alignment 15-50	1.0 miles	S	0,000 ft	621.0 MPH	223 MPH	272.7595	158.3044	223.2473	223.2 MPH	159 MPH	19.60	191.2464
Alignment 15-51	0.3 miles	C	1,017 ft	82.9 MPH	159 MPH	180.1183	134.6083	159.166	82.9 MPH	135 MPH	28.69	37.9258
Alignment 15-52	0.3 miles	S	0,000 ft	621.0 MPH	135 MPH	157.2875	108.2158	135.3151	135.3 MPH	109 MPH	8.09	122.3114
Alignment 15-53	0.1 miles	C	1,000 ft	82.3 MPH	109 MPH	123.851	91.77646	109.0942	82.3 MPH	92 MPH	7.89	66.6375
Alignment 15-54	0.2 miles	S	0,000 ft	621.0 MPH	92 MPH	116.4834	57.96218	92.01192	92.0 MPH	58 MPH	10.34	75.0119
Alignment 15-55	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 15-56	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 15 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s² = 1 acceleration of gravity [g]
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 15-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 15-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 15-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 15-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 15-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 15-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 15-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 15-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 15-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 15-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 15-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 15-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 15-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 15-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 15-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 15-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	159.27732	150.0 MPH	150 MPH	11.88	150.0000
	Alignment 15-17	0.8 miles	C	60,000 ft	250.0 MPH	150 MPH	176.7858	117.24666	164.85936	164.9 MPH	152 MPH	17.21	157.8936
	Alignment 15-18	0.7 miles	S	0,000 ft	205.0 MPH	152 MPH	175.55299	124.05301	152.38742	152.4 MPH	125 MPH	17.24	138.8820
	Alignment 15-19	0.4 miles	C	11,017 ft	125.0 MPH	125 MPH	140.94065	106.70396	133.20898	125.0 MPH	125 MPH	10.53	125.0000
	Alignment 15-20	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	129.26108	120.58844	127.14839	127.1 MPH	125 MPH	2.67	126.0742
	Alignment 15-21	0.4 miles	C	11,000 ft	125.0 MPH	125 MPH	140.87913	106.78516	133.17644	125.0 MPH	125 MPH	10.48	125.0000
	Alignment 15-22	0.6 miles	S	0,000 ft	205.0 MPH	125 MPH	151.371	91.306184	139.7179	139.7 MPH	127 MPH	17.03	132.8225
	Alignment 15-24	0.1 miles	S	0,000 ft	205.0 MPH	127 MPH	129.88159	124.05149	127.46417	127.5 MPH	125 MPH	1.82	126.3906
	Alignment 15-25	0.2 miles	C	18,017 ft	125.0 MPH	125 MPH	134.12028	115.15968	129.64037	125.0 MPH	125 MPH	5.87	125.0000
	Alignment 15-26	0.4 miles	C	18,000 ft	125.0 MPH	125 MPH	141.38353	106.11644	133.44344	125.0 MPH	125 MPH	10.84	125.0000
	Alignment 15-27	2.5 miles	S	0,000 ft	205.0 MPH	125 MPH	212.42694	0	183.88203	183.9 MPH	150 MPH	57.59	159.0066
	Alignment 15-28	0.5 miles	C	22,017 ft	150.0 MPH	150 MPH	168.26738	129.17464	159.3956	150.0 MPH	150 MPH	12.03	150.0000
	Alignment 15-29	0.4 miles	C	22,000 ft	150.0 MPH	150 MPH	163.29197	135.4095	156.78691	150.0 MPH	150 MPH	8.62	150.0000
	Alignment 15-30	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 15-31	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	184.562	150.0 MPH	199 MPH	17.44	107.2587
	Alignment 15-32	1.0 miles	C	18,017 ft	150.0 MPH	199 MPH	225.29718	168.65106	199.14796	150.0 MPH	169 MPH	28.81	120.2367
	Alignment 15-33	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 15-34	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 15-35	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 15-36	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 15-37	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 15-38	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 15-39	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 15-40	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	169.89406	169.9 MPH	170 MPH	7.12	164.1606
	Alignment 15-41	0.1 miles	S	0,000 ft	205.0 MPH	170 MPH	172.46919	167.27928	172.46919	172.5 MPH	172 MPH	1.60	171.1816
	Alignment 15-42	1.5 miles	C	28,017 ft	250.0 MPH	172 MPH	217.06086	111.24671	188.19062	188.2 MPH	154 MPH	30.99	174.0040
	Alignment 15-43	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	178.48142	124.80538	154.0789	154.1 MPH	125 MPH	18.10	139.5787
	Alignment 15-44	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.9823	101.14412	135.36038	125.0 MPH	125 MPH	13.40	125.0000
	Alignment 15-45	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 15-46	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 15-47	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 15-48	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 15-49	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
BECKLEY AVE.	Alignment 15-50	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 15-51	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 15-52	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 15-53	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 15-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 15-55	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 15-56	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 15 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 15-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
	Alignment 15-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
	Alignment 15-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
	Alignment 15-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
	Alignment 15-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
	Alignment 15-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
	Alignment 15-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
	Alignment 15-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
	Alignment 15-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
	Alignment 15-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
	Alignment 15-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
	Alignment 15-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
	Alignment 15-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	290.95605	291.0 MPH	291 MPH	15.93	264.7483
	Alignment 15-14	0.4 miles	C	70,000 ft	311.0 MPH	291 MPH	308.15467	282.15563	299.7001	299.7 MPH	291 MPH	5.30	295.3390
	Alignment 15-15	2.0 miles	S	0,000 ft	311.0 MPH	291 MPH	362.15184	248.86354	311.0441	311.0 MPH	250 MPH	24.74	285.4514
	Alignment 15-16	0.5 miles	C	17,017 ft	249.7 MPH	250 MPH	272.15154	237.91675	255.64669	249.7 MPH	238 MPH	7.22	246.8108
	Alignment 15-17	0.8 miles	C	60,000 ft	311.0 MPH	238 MPH	272.99526	218.83962	247.47466	247.5 MPH	219 MPH	11.53	235.6092
	Alignment 15-18	0.7 miles	S	0,000 ft	311.0 MPH	219 MPH	252.43231	200.61443	228.126	228.1 MPH	201 MPH	11.05	216.7850
	Alignment 15-19	0.4 miles	C	11,017 ft	200.9 MPH	201 MPH	221.40796	190.05684	211.40288	200.9 MPH	201 MPH	6.55	200.9001
	Alignment 15-20	0.1 miles	S	0,000 ft	311.0 MPH	201 MPH	206.33531	198.18537	203.56163	203.6 MPH	201 MPH	1.66	202.1922
	Alignment 15-21	0.4 miles	C	11,000 ft	200.7 MPH	201 MPH	221.19136	189.94338	211.21794	200.7 MPH	201 MPH	6.53	200.7496
	Alignment 15-22	0.6 miles	S	0,000 ft	311.0 MPH	201 MPH	234.92514	181.6927	234.92514	234.9 MPH	235 MPH	10.39	217.8374
	Alignment 15-24	0.1 miles	S	0,000 ft	311.0 MPH	235 MPH	238.12197	233.34437	238.12197	238.1 MPH	238 MPH	0.97	236.5236
	Alignment 15-25	0.2 miles	C	18,017 ft	256.9 MPH	238 MPH	248.05257	233.10689	248.05257	248.1 MPH	248 MPH	3.02	243.0873
	Alignment 15-26	0.4 miles	C	18,000 ft	256.8 MPH	248 MPH	265.41692	239.09366	261.1439	256.8 MPH	257 MPH	5.32	254.6148
	Alignment 15-27	2.5 miles	S	0,000 ft	311.0 MPH	257 MPH	355.2656	190.90818	310.88153	310.9 MPH	259 MPH	32.20	284.3793
	Alignment 15-28	0.5 miles	C	22,017 ft	284.0 MPH	259 MPH	280.99563	247.52189	265.01184	265.0 MPH	248 MPH	7.00	257.9421
	Alignment 15-29	0.4 miles	C	22,000 ft	283.9 MPH	248 MPH	264.59668	239.45716	252.5979	252.6 MPH	240 MPH	5.23	247.3685
	Alignment 15-30	0.2 miles	S	0,000 ft	311.0 MPH	240 MPH	250.92596	234.46635	243.09343	243.1 MPH	235 MPH	3.40	239.7380
	Alignment 15-31	0.5 miles	C	18,000 ft	256.8 MPH	235 MPH	259.87369	221.81013	241.67989	241.7 MPH	222 MPH	8.01	233.4871
	Alignment 15-32	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
	Alignment 15-33	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
	Alignment 15-34	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
	Alignment 15-35	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
	Alignment 15-36	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
	Alignment 15-37	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
	Alignment 15-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
	Alignment 15-39	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	212.27668	212.3 MPH	212 MPH	6.36	201.8202
	Alignment 15-40	0.3 miles	S	0,000 ft	311.0 MPH	212 MPH	229.67977	203.2155	227.84732	227.8 MPH	226 MPH	5.29	220.7897
	Alignment 15-41	0.1 miles	S	0,000 ft	311.0 MPH	226 MPH	229.95028	224.041	227.48861	227.5 MPH	225 MPH	1.21	226.4314
	Alignment 15-42	1.5 miles	C	28,017 ft	311.0 MPH	225 MPH	293.44618	182.3601	244.54004	244.5 MPH	183 MPH	24.64	218.8310
	Alignment 15-43	0.7 miles	S	0,000 ft	311.0 MPH	183 MPH	223.87016	159.21489	194.63244	194.6 MPH	160 MPH	14.02	180.2700
	Alignment 15-44	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.48675	142.30549	176.51189	160.1 MPH	160 MPH	10.46	160.1428
	Alignment 15-45	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
	Alignment 15-46	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 15-47	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 15-48	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	182.9558	183.0 MPH	183 MPH	6.93	171.5493
	Alignment 15-49	0.9 miles	C	18,017 ft	256.9 MPH	183 MPH	236.01029	150.30795	200.43684	200.4 MPH	157 MPH	18.51	182.4426
BECKLEY AVE.	Alignment 15-50	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
	Alignment 15-51	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 15-52	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 15-53	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 15-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 15-55	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 15-56	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 15 - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 15-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 15-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 15-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 15-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 15-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 15-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 15-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 15-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 15-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 15-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 15-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 15-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 15-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 15-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
Alignment 15-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	381.7164	381.7 MPH	339 MPH	19.40	364.0325
Alignment 15-16	0.5 miles	C	17,017 ft	339.3 MPH	339 MPH	356.1614	321.5646	342.3704	339.3 MPH	328 MPH	5.31	335.6457
Alignment 15-17	0.8 miles	C	60,000 ft	621.0 MPH	328 MPH	354.2124	299.5022	328.2274	328.2 MPH	300 MPH	8.65	314.2256
Alignment 15-18	0.7 miles	S	0,000 ft	621.0 MPH	300 MPH	325.2093	272.4682	300.2454	300.2 MPH	273 MPH	8.35	286.7474
Alignment 15-19	0.4 miles	C	11,017 ft	273.0 MPH	273 MPH	288.434	256.6573	280.8272	273.0 MPH	273 MPH	4.82	273.0084
Alignment 15-20	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	277.0324	268.9241	274.9263	274.9 MPH	273 MPH	1.23	273.9136
Alignment 15-21	0.4 miles	C	11,000 ft	272.8 MPH	273 MPH	288.179	256.5088	280.5968	272.8 MPH	273 MPH	4.80	272.8039
Alignment 15-22	0.6 miles	S	0,000 ft	621.0 MPH	273 MPH	298.8501	243.9929	298.8501	298.9 MPH	299 MPH	7.92	285.8270
Alignment 15-24	0.1 miles	S	0,000 ft	621.0 MPH	299 MPH	301.3695	296.3091	301.3695	301.4 MPH	301 MPH	0.77	300.1098
Alignment 15-25	0.2 miles	C	18,017 ft	349.1 MPH	301 MPH	309.2759	293.2501	309.2759	309.3 MPH	309 MPH	2.40	305.3227
Alignment 15-26	0.4 miles	C	18,000 ft	349.0 MPH	309 MPH	323.3692	294.509	323.3692	323.4 MPH	323 MPH	4.28	316.3226
Alignment 15-27	2.5 miles	S	0,000 ft	621.0 MPH	323 MPH	405.999	210.476	385.1001	385.1 MPH	363 MPH	25.48	359.4585
Alignment 15-28	0.5 miles	C	22,017 ft	385.9 MPH	363 MPH	379.0073	346.2535	363.3563	363.4 MPH	347 MPH	5.08	355.3487
Alignment 15-29	0.4 miles	C	22,000 ft	385.8 MPH	347 MPH	359.0493	334.517	347.2329	347.2 MPH	335 MPH	3.79	341.2286
Alignment 15-30	0.2 miles	S	0,000 ft	621.0 MPH	335 MPH	342.9123	326.8963	335.0506	335.1 MPH	327 MPH	2.46	331.0503
Alignment 15-31	0.5 miles	C	18,000 ft	349.0 MPH	327 MPH	345.309	307.6031	328.1298	328.1 MPH	310 MPH	5.85	319.5635
Alignment 15-32	1.0 miles	C	18,017 ft	349.1 MPH	310 MPH	344.8114	270.7492	310.1096	310.1 MPH	271 MPH	11.92	290.6093
Alignment 15-33	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 15-34	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 15-35	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 15-36	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 15-37	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 15-38	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 15-39	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 15-40	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	272.9793	273.0 MPH	273 MPH	4.40	265.7435
Alignment 15-41	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	276.2586	269.6601	276.2586	276.3 MPH	276 MPH	1.00	274.6189
Alignment 15-42	1.5 miles	C	28,017 ft	435.4 MPH	276 MPH	334.3718	202.0721	296.0646	296.1 MPH	252 MPH	19.41	277.7935
Alignment 15-43	0.7 miles	S	0,000 ft	621.0 MPH	252 MPH	283.0775	216.5067	252.48	252.5 MPH	218 MPH	10.74	235.2846
Alignment 15-44	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.6213	190.6252	229.9351	217.6 MPH	218 MPH	7.70	217.6222
Alignment 15-45	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.8281	186.4887	231.7454	217.9 MPH	218 MPH	8.77	217.8774
Alignment 15-46	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
Alignment 15-47	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
Alignment 15-48	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	234.9181	234.9 MPH	235 MPH	5.26	226.2702
Alignment 15-49	0.9 miles	C	18,017 ft	349.1 MPH	235 MPH	278.2347	181.5448	252.1344	252.1 MPH	223 MPH	14.09	239.7806
Alignment 15-50	1.0 miles	S	0,000 ft	621.0 MPH	223 MPH	272.7595	158.3044	223.2473	223.2 MPH	159 MPH	19.60	191.2464
Alignment 15-51	0.3 miles	C	1,017 ft	82.9 MPH	159 MPH	180.1183	134.6083	159.166	82.9 MPH	135 MPH	28.69	37.9258
Alignment 15-52	0.3 miles	S	0,000 ft	621.0 MPH	135 MPH	157.2875	108.2158	135.3151	135.3 MPH	109 MPH	8.09	122.3114
Alignment 15-53	0.1 miles	C	1,000 ft	82.3 MPH	109 MPH	123.851	91.77646	109.0942	82.3 MPH	92 MPH	7.89	66.6375
Alignment 15-54	0.2 miles	S	0,000 ft	621.0 MPH	92 MPH	116.4834	57.96218	92.01192	92.0 MPH	58 MPH	10.34	75.0119
Alignment 15-55	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 15-56	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-5) Alignment 17

Alignment 17 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 17-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 17-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 17-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 17-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 17-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 17-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 17-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 17-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 17-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 17-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 17-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 17-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 17-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 17-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 17-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	225.72297	205.0 MPH	195 MPH	34.61	204.0596
	Alignment 17-16	0.5 miles	C	17,017 ft	150.0 MPH	195 MPH	209.19735	179.68436	195.1455	150.0 MPH	180 MPH	17.93	99.3567
	Alignment 17-17	0.8 miles	C	60,000 ft	250.0 MPH	180 MPH	202.86256	153.7751	180.09611	180.1 MPH	154 MPH	16.26	167.0958
	Alignment 17-18	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	177.28748	126.49565	154.20741	154.2 MPH	127 MPH	17.02	140.7058
	Alignment 17-19	0.4 miles	C	11,017 ft	125.0 MPH	127 MPH	142.71743	109.04006	127.41324	125.0 MPH	110 MPH	11.10	118.5937
	Alignment 17-20	0.1 miles	S	0,000 ft	205.0 MPH	110 MPH	114.81911	104.95986	110.49757	110.5 MPH	106 MPH	3.10	108.4480
BECKLEY AVE.	Alignment 17-21	0.4 miles	C	11,000 ft	125.0 MPH	106 MPH	124.32992	83.750046	106.49631	106.5 MPH	85 MPH	13.65	95.9851
	Alignment 17-22	0.6 miles	S	0,000 ft	205.0 MPH	85 MPH	120.47066	0	85.185623	85.2 MPH	0 MPH	53.00	42.6852
	Alignment 17-23-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 17-24	0.1 miles	S	0,000 ft	205.0 MPH	0 MPH	27.207126	0	27.207126	27.2 MPH	27 MPH	16.89	13.6036
	Alignment 17-25	0.2 miles	C	18,017 ft	125.0 MPH	27 MPH	55.708858	0	55.708858	55.7 MPH	56 MPH	17.70	41.4580
	Alignment 17-26	0.4 miles	C	18,000 ft	125.0 MPH	56 MPH	86.416312	0	86.416312	86.4 MPH	86 MPH	19.06	71.0626
	Alignment 17-27	0.9 miles	S	0,000 ft	205.0 MPH	86 MPH	133.57346	0	129.35778	129.4 MPH	125 MPH	29.37	109.6644
	Alignment 17-28	0.7 miles	C	7,017 ft	125.0 MPH	125 MPH	153.05526	88.453865	139.73352	125.0 MPH	125 MPH	19.37	125.0000
	Alignment 17-29	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.69844	92.412008	135.77743	125.0 MPH	119 MPH	17.68	124.3681
	Alignment 17-30	0.4 miles	S	0,000 ft	205.0 MPH	119 MPH	136.14714	98.923996	119.44882	119.4 MPH	100 MPH	12.35	109.9387
	Alignment 17-31	0.3 miles	C	7,000 ft	100.0 MPH	100 MPH	118.19399	77.654238	109.47561	100.0 MPH	100 MPH	12.32	100.0000
	Alignment 17-32	0.3 miles	C	7,017 ft	100.0 MPH	100 MPH	118.4649	77.24032	109.62193	100.0 MPH	100 MPH	12.52	100.0000
	Alignment 17-33	0.5 miles	C	7,000 ft	100.0 MPH	100 MPH	125.58507	65.02607	113.51566	100.0 MPH	100 MPH	17.92	100.0000
	Alignment 17-34	1.1 miles	C	18,017 ft	150.0 MPH	100 MPH	151.32698	0	150.66495	150.0 MPH	150 MPH	31.87	125.6491
	Alignment 17-35	0.3 miles	C	18,017 ft	150.0 MPH	150 MPH	160.97012	138.16158	165.0339	150.0 MPH	169 MPH	7.81	135.6457
	Alignment 17-36	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 17-37	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 17-38	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 17-39	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 17-40	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 17-41	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 17-42	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 17-43	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	169.89406	169.9 MPH	170 MPH	7.12	164.1606
	Alignment 17-44	0.2 miles	S	0,000 ft	205.0 MPH	170 MPH	176.23526	163.30682	176.23526	176.2 MPH	176 MPH	3.94	173.0647
	Alignment 17-45	1.4 miles	C	28,017 ft	250.0 MPH	176 MPH	217.06067	122.48428	188.19051	188.2 MPH	154 MPH	28.65	173.9756
	Alignment 17-46	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	178.48142	124.80538	154.0789	154.1 MPH	125 MPH	18.10	139.5787
	Alignment 17-47	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.15738	100.8927	135.45417	125.0 MPH	125 MPH	13.52	125.0000
	Alignment 17-48	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.41994	97.556966	136.67048	125.0 MPH	125 MPH	15.17	125.0000
	Alignment 17-49	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 17-50	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 17-51	0.7 miles	C	18,017 ft	200.0 MPH	125 MPH	154.33815	86.195914	148.77712	148.8 MPH	143 MPH	18.35	138.6478
	Alignment 17-52	1.6 miles	S	0,000 ft	205.0 MPH	143 MPH	197.42278	43.843406	143.17953	143.2 MPH	45 MPH	61.07	94.1792
	Alignment 17-53	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367472	0	61.463489	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 17-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	66.332014	0	56.678638	56.7 MPH	45 MPH	14.50	50.8393
	Alignment 17-55	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 17-56	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	51.790606	51.8 MPH	29 MPH	18.37	42.2318
	Alignment 17-57	0.1 miles	C	1,000 ft	45.0 MPH	29 MPH	41.294292	0	29.199474	29.2 MPH	0 MPH	18.25	14.6981

Alignment 17 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 17-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
	Alignment 17-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
	Alignment 17-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
	Alignment 17-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
	Alignment 17-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
	Alignment 17-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
	Alignment 17-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
	Alignment 17-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
	Alignment 17-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
	Alignment 17-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
	Alignment 17-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
	Alignment 17-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
	Alignment 17-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	280.67367	280.7 MPH	270 MPH	16.05	262.7865
	Alignment 17-14	0.4 miles	C	70,000 ft	311.0 MPH	270 MPH	288.45083	260.49257	275.06806	275.1 MPH	261 MPH	5.82	269.2258
	Alignment 17-15	2.0 miles	S	0,000 ft	311.0 MPH	261 MPH	338.51729	213.00953	283.18718	283.2 MPH	214 MPH	27.77	254.2998
	Alignment 17-16	0.5 miles	C	17,017 ft	249.7 MPH	214 MPH	239.83233	200.14362	221.26969	221.3 MPH	201 MPH	8.37	212.8507
	Alignment 17-17	0.8 miles	C	60,000 ft	311.0 MPH	201 MPH	241.41958	177.89823	212.09362	212.1 MPH	178 MPH	13.73	197.8701
	Alignment 17-18	0.7 miles	S	0,000 ft	311.0 MPH	178 MPH	217.8189	154.81973	189.03713	189.0 MPH	155 MPH	13.70	174.8345
	Alignment 17-19	0.4 miles	C	11,017 ft	200.9 MPH	155 MPH	180.79164	140.66177	162.12128	162.1 MPH	141 MPH	8.58	153.3257
	Alignment 17-20	0.1 miles	S	0,000 ft	311.0 MPH	141 MPH	148.64182	137.10424	143.41965	143.4 MPH	138 MPH	2.38	141.1728
BECKLEY AVE.	Alignment 17-21	0.4 miles	C	11,000 ft	200.7 MPH	138 MPH	166.34062	121.74592	145.86501	145.9 MPH	122 MPH	9.64	135.9155
	Alignment 17-22	0.6 miles	S	0,000 ft	311.0 MPH	122 MPH	172.54972	0	122.01108	122.0 MPH	0 MPH	37.08	61.0111
	Alignment 17-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 17-24	0.1 miles	S	0,000 ft	311.0 MPH	0 MPH	38.887658	0	38.887658	38.9 MPH	39 MPH	11.82	19.4438
	Alignment 17-25	0.2 miles	C	18,017 ft	256.9 MPH	39 MPH	79.625721	0	79.625721	79.6 MPH	80 MPH	12.38	59.2567
	Alignment 17-26	0.4 miles	C	18,000 ft	256.8 MPH	80 MPH	123.51646	0	123.51646	123.5 MPH	124 MPH	13.34	101.5711
	Alignment 17-27	0.9 miles	S	0,000 ft	311.0 MPH	124 MPH	190.91907	0	176.2899	176.3 MPH	160 MPH	20.89	154.1771
	Alignment 17-28	0.7 miles	C	7,017 ft	160.3 MPH	160 MPH	204.06633	133.81052	183.42408	160.3 MPH	160 MPH	15.10	160.3311
	Alignment 17-29	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.29997	136.23766	181.33643	160.1 MPH	160 MPH	13.73	160.1428
	Alignment 17-30	0.4 miles	S	0,000 ft	311.0 MPH	160 MPH	185.967	145.8447	173.53594	173.5 MPH	160 MPH	8.14	166.8394
	Alignment 17-31	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	183.72771	147.22738	172.33919	160.1 MPH	160 MPH	7.70	160.1428
	Alignment 17-32	0.3 miles	C	7,017 ft	160.3 MPH	160 MPH	184.08382	147.00948	172.52909	160.3 MPH	160 MPH	7.81	160.3301
	Alignment 17-33	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	193.48603	140.97556	177.59865	160.1 MPH	160 MPH	11.19	160.1428
	Alignment 17-34	1.1 miles	C	18,017 ft	256.9 MPH	160 MPH	228.03401	0	216.351	216.4 MPH	204 MPH	20.84	192.1974
	Alignment 17-35	0.3 miles	C	18,017 ft	256.9 MPH	204 MPH	220.4207	195.46002	208.56808	208.6 MPH	196 MPH	5.21	203.3503
	Alignment 17-36	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
	Alignment 17-37	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
	Alignment 17-38	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
	Alignment 17-39	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
	Alignment 17-40	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
	Alignment 17-41	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
	Alignment 17-42	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	212.27668	212.3 MPH	212 MPH	6.36	201.8202
	Alignment 17-43	0.3 miles	S	0,000 ft	311.0 MPH	212 MPH	229.67977	203.2155	227.84732	227.8 MPH	226 MPH	5.29	220.7897
	Alignment 17-44	0.2 miles	S	0,000 ft	311.0 MPH	226 MPH	235.71174	221.09076	228.95854	229.0 MPH	222 MPH	3.01	226.0759
	Alignment 17-45	1.4 miles	C	28,017 ft	311.0 MPH	222 MPH	286.50759	182.28421	240.39093	240.4 MPH	183 MPH	23.03	216.4278
	Alignment 17-46	0.7 miles	S	0,000 ft	311.0 MPH	183 MPH	223.87016	159.21489	194.63244	194.6 MPH	160 MPH	14.02	180.2700
	Alignment 17-47	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.75753	142.1269	176.65881	160.1 MPH	160 MPH	10.56	160.1428
	Alignment 17-48	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.25198	139.77869	178.647	160.3 MPH	160 MPH	11.83	160.3310
	Alignment 17-49	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 17-50	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 17-51	0.7 miles	C	18,017 ft	256.9 MPH	160 MPH	205.88408	132.10017	200.03032	200.0 MPH	194 MPH	13.95	182.3098
	Alignment 17-52	1.6 miles	S	0,000 ft	311.0 MPH	194 MPH	274.74585	0	199.0093	199.0 MPH	61 MPH	43.46	132.3466
	Alignment 17-53	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468889	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 17-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	92.606729	0	78.229408	78.2 MPH	61 MPH	10.61	69.5014
	Alignment 17-55	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 17-56	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	72.567416	72.6 MPH	42 MPH	12.95	59.9014
	Alignment 17-57	0.1 miles	C	1,000 ft	60.5 MPH	42 MPH	59.410077	0	42.009268	42.0 MPH	0 MPH	12.77	21.0093

Alignment 17 - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s²
11846 mphph	11846 mphph	911 fps			

= 1 acceleration of gravity [g]

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 17-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
	Alignment 17-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
	Alignment 17-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
	Alignment 17-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
	Alignment 17-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
	Alignment 17-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
	Alignment 17-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
	Alignment 17-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
	Alignment 17-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
	Alignment 17-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
	Alignment 17-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
	Alignment 17-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
	Alignment 17-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
	Alignment 17-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	357.1627	357.2 MPH	354 MPH	4.44	352.3302
	Alignment 17-15	2.0 miles	S	0,000 ft	621.0 MPH	354 MPH	414.4743	280.79	354.0833	354.1 MPH	281 MPH	22.24	317.5832
	Alignment 17-16	0.5 miles	C	17,017 ft	339.3 MPH	281 MPH	301.1388	259.3019	281.3224	281.3 MPH	260 MPH	6.58	270.8176
	Alignment 17-17	0.8 miles	C	60,000 ft	621.0 MPH	260 MPH	292.3738	222.9744	260.011	260.0 MPH	223 MPH	11.25	241.5110
	Alignment 17-18	0.7 miles	S	0,000 ft	621.0 MPH	223 MPH	255.9103	184.3039	223.288	223.3 MPH	185 MPH	11.72	204.2859
	Alignment 17-19	0.4 miles	C	11,017 ft	273.0 MPH	185 MPH	207.0884	159.8887	185.0481	185.0 MPH	160 MPH	7.63	172.5480
BECKLEY AVE.	Alignment 17-20	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	166.7735	152.9268	160.035	160.0 MPH	153 MPH	2.15	156.5348
	Alignment 17-21	0.4 miles	C	11,000 ft	272.8 MPH	153 MPH	178.981	121.5886	153.1636	153.2 MPH	122 MPH	9.52	137.6628
	Alignment 17-22	0.6 miles	S	0,000 ft	621.0 MPH	122 MPH	172.5497	0	122.0111	122.0 MPH	0 MPH	37.08	61.0111
	Alignment 17-23-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 17-24	0.1 miles	S	0,000 ft	621.0 MPH	0 MPH	38.88766	0	38.88766	38.9 MPH	39 MPH	11.82	19.4438
	Alignment 17-25	0.2 miles	C	18,017 ft	349.1 MPH	39 MPH	79.62572	0	79.62572	79.6 MPH	80 MPH	12.38	59.2567
	Alignment 17-26	0.4 miles	C	18,000 ft	349.0 MPH	80 MPH	123.5165	0	123.5165	123.5 MPH	124 MPH	13.34	101.5711
	Alignment 17-27	0.9 miles	S	0,000 ft	621.0 MPH	124 MPH	190.9191	0	190.9191	190.9 MPH	191 MPH	20.48	157.2178
	Alignment 17-28	0.7 miles	C	7,017 ft	217.9 MPH	191 MPH	228.882	143.2243	223.3231	217.9 MPH	218 MPH	11.62	208.3746
	Alignment 17-29	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.664	181.3424	233.6592	217.6 MPH	218 MPH	10.11	217.6222
	Alignment 17-30	0.4 miles	S	0,000 ft	621.0 MPH	218 MPH	237.2708	196.0138	227.6586	227.7 MPH	218 MPH	6.10	222.6404
	Alignment 17-31	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	235.5198	198.1143	226.7477	217.6 MPH	218 MPH	5.66	217.6222
	Alignment 17-32	0.3 miles	C	7,017 ft	217.9 MPH	218 MPH	235.7977	197.7834	226.892	217.9 MPH	218 MPH	5.75	217.8751
	Alignment 17-33	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	243.2089	188.5956	230.7704	217.6 MPH	218 MPH	8.23	217.6222
	Alignment 17-34	1.1 miles	C	18,017 ft	349.1 MPH	218 MPH	271.5018	144.9332	271.5018	271.5 MPH	272 MPH	16.37	244.5620
	Alignment 17-35	0.3 miles	C	18,017 ft	349.1 MPH	272 MPH	284.0466	258.3485	277.6	277.6 MPH	271 MPH	3.86	274.4205
	Alignment 17-36	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
	Alignment 17-37	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
	Alignment 17-38	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
	Alignment 17-39	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
	Alignment 17-40	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
	Alignment 17-41	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
	Alignment 17-42	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
	Alignment 17-43	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	272.9793	273.0 MPH	273 MPH	4.40	265.7435
	Alignment 17-44	0.2 miles	S	0,000 ft	621.0 MPH	273 MPH	281.0724	264.6387	281.0724	281.1 MPH	281 MPH	2.46	277.0258
	Alignment 17-45	1.4 miles	C	28,017 ft	435.4 MPH	281 MPH	334.3715	214.9398	296.0644	296.1 MPH	252 MPH	17.95	277.7224
	Alignment 17-46	0.7 miles	S	0,000 ft	621.0 MPH	252 MPH	283.0775	216.5067	252.48	252.5 MPH	218 MPH	10.74	235.2846
	Alignment 17-47	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.836	190.3528	230.0479	217.6 MPH	218 MPH	7.77	217.6222
	Alignment 17-48	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.6161	186.7667	231.6334	217.9 MPH	218 MPH	8.70	217.8774
	Alignment 17-49	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
	Alignment 17-50	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
	Alignment 17-51	0.7 miles	C	18,017 ft	349.1 MPH	218 MPH	253.1836	174.9768	233.0482	233.0 MPH	211 MPH	11.39	223.3871
	Alignment 17-52	1.6 miles	S	0,000 ft	621.0 MPH	211 MPH	287.0022	81.6806	211.2434	211.2 MPH	83 MPH	39.07	147.2076
	Alignment 17-53	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 17-54	0.2 miles	S	0,000 ft	621.0 MPH	83 MPH	108.3012	45.00426	96.16334	96.2 MPH	82 MPH	8.25	89.3731
	Alignment 17-55	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 17-56	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	82.56518	82.6 MPH	42 MPH	12.42	62.4361
	Alignment 17-57	0.1 miles	C	1,000 ft	82.3 MPH	42 MPH	59.41008	0	42.00927	42.0 MPH	0 MPH	12.77	21.0093

Alignment 17 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 17-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 17-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 17-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 17-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 17-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 17-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 17-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
BECKLEY AVE.	Alignment 17-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 17-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 17-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 17-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 17-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 17-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 17-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 17-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 17-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	159.27732	150.0 MPH	150 MPH	11.88	150.0000
	Alignment 17-17	0.8 miles	C	60,000 ft	250.0 MPH	150 MPH	176.7858	117.24666	164.85936	164.9 MPH	152 MPH	17.21	157.8936
	Alignment 17-18	0.7 miles	S	0,000 ft	205.0 MPH	152 MPH	175.55299	124.05301	152.38742	152.4 MPH	125 MPH	17.24	138.8820
	Alignment 17-19	0.4 miles	C	11,017 ft	125.0 MPH	125 MPH	140.94065	106.70396	133.20898	125.0 MPH	125 MPH	10.53	125.0000
	Alignment 17-20	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	129.26108	120.58844	127.14839	127.1 MPH	125 MPH	2.67	126.0742
	Alignment 17-21	0.4 miles	C	11,000 ft	125.0 MPH	125 MPH	140.87913	106.78516	133.17644	125.0 MPH	125 MPH	10.48	125.0000
	Alignment 17-22	0.6 miles	S	0,000 ft	205.0 MPH	125 MPH	151.371	91.306184	151.371	151.4 MPH	151 MPH	16.37	138.1855
	Alignment 17-24	0.1 miles	S	0,000 ft	205.0 MPH	151 MPH	153.79665	148.90585	167.41178	167.4 MPH	180 MPH	2.14	107.1999
	Alignment 17-25	0.2 miles	C	18,017 ft	125.0 MPH	180 MPH	186.44905	173.31114	180.33198	125.0 MPH	174 MPH	19.34	37.9249
	Alignment 17-26	0.4 miles	C	18,000 ft	125.0 MPH	174 MPH	186.11905	160.97111	174.01336	125.0 MPH	161 MPH	20.02	67.6737
	Alignment 17-27	0.9 miles	S	0,000 ft	205.0 MPH	161 MPH	190.5127	124.68725	161.12121	161.1 MPH	125 MPH	22.50	143.1208
	Alignment 17-28	0.7 miles	C	7,017 ft	125.0 MPH	125 MPH	153.05526	88.453865	139.73352	125.0 MPH	125 MPH	19.37	125.0000
	Alignment 17-29	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.69844	92.412008	135.77743	125.0 MPH	119 MPH	17.68	124.3681
	Alignment 17-30	0.4 miles	S	0,000 ft	205.0 MPH	119 MPH	136.14714	98.923996	119.44882	119.4 MPH	100 MPH	12.35	109.9387
	Alignment 17-31	0.3 miles	C	7,000 ft	100.0 MPH	100 MPH	118.19399	77.654238	109.47561	100.0 MPH	100 MPH	12.32	100.0000
	Alignment 17-32	0.3 miles	C	7,017 ft	100.0 MPH	100 MPH	118.4649	77.24032	109.62193	100.0 MPH	100 MPH	12.52	100.0000
	Alignment 17-33	0.5 miles	C	7,000 ft	100.0 MPH	100 MPH	125.58507	65.02607	113.51566	100.0 MPH	100 MPH	17.92	100.0000
	Alignment 17-34	1.1 miles	C	18,017 ft	150.0 MPH	100 MPH	151.32698	0	150.66495	150.0 MPH	150 MPH	31.87	125.6491
	Alignment 17-35	0.3 miles	C	18,017 ft	150.0 MPH	150 MPH	160.97012	138.16158	165.0339	150.0 MPH	169 MPH	7.81	135.6457
	Alignment 17-36	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 17-37	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 17-38	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 17-39	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 17-40	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 17-41	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 17-42	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 17-43	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	169.89406	169.9 MPH	170 MPH	7.12	164.1606
	Alignment 17-44	0.2 miles	S	0,000 ft	205.0 MPH	170 MPH	176.23526	163.30682	176.23526	176.2 MPH	176 MPH	3.94	173.0647
	Alignment 17-45	1.4 miles	C	28,017 ft	250.0 MPH	176 MPH	217.06067	122.48428	188.19051	188.2 MPH	154 MPH	28.65	173.9756
	Alignment 17-46	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	178.48142	124.80538	154.0789	154.1 MPH	125 MPH	18.10	139.5787
	Alignment 17-47	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.15738	100.8927	135.45417	125.0 MPH	125 MPH	13.52	125.0000
	Alignment 17-48	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.41994	97.556966	136.67048	125.0 MPH	125 MPH	15.17	125.0000
	Alignment 17-49	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 17-50	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 17-51	0.7 miles	C	18,017 ft	200.0 MPH	125 MPH	154.33815	86.195914	148.77712	148.8 MPH	143 MPH	18.35	138.6478
	Alignment 17-52	1.6 miles	S	0,000 ft	205.0 MPH	143 MPH	197.42278	43.843406	143.17953	143.2 MPH	45 MPH	61.07	94.1792
	Alignment 17-53	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367472	0	61.463489	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 17-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	66.332014	0	56.678638	56.7 MPH	45 MPH	14.50	50.8393
	Alignment 17-55	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 17-56	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	51.790606	51.8 MPH	29 MPH	18.37	42.2318
	Alignment 17-57	0.1 miles	C	1,000 ft	45.0 MPH	29 MPH	41.294292	0	29.199474	29.2 MPH	0 MPH	18.25	14.6981

Alignment 17 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 17-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
	Alignment 17-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
	Alignment 17-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
	Alignment 17-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
	Alignment 17-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
	Alignment 17-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
	Alignment 17-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
BECKLEY AVE.	Alignment 17-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
	Alignment 17-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
	Alignment 17-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
	Alignment 17-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
	Alignment 17-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
	Alignment 17-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	290.95605	291.0 MPH	291 MPH	15.93	264.7483
	Alignment 17-14	0.4 miles	C	70,000 ft	311.0 MPH	291 MPH	308.15467	282.15563	299.7001	299.7 MPH	291 MPH	5.30	295.3390
	Alignment 17-15	2.0 miles	S	0,000 ft	311.0 MPH	291 MPH	362.15184	248.86354	311.0441	311.0 MPH	250 MPH	24.74	285.4514
	Alignment 17-16	0.5 miles	C	17,017 ft	249.7 MPH	250 MPH	272.15154	237.91675	255.64669	249.7 MPH	238 MPH	7.22	246.8108
	Alignment 17-17	0.8 miles	C	60,000 ft	311.0 MPH	238 MPH	272.99526	218.83962	247.47466	247.5 MPH	219 MPH	11.53	235.6092
	Alignment 17-18	0.7 miles	S	0,000 ft	311.0 MPH	219 MPH	252.43231	200.61443	228.126	228.1 MPH	201 MPH	11.05	216.7850
	Alignment 17-19	0.4 miles	C	11,017 ft	200.9 MPH	201 MPH	221.40796	190.05684	211.40288	200.9 MPH	201 MPH	6.55	200.9001
	Alignment 17-20	0.1 miles	S	0,000 ft	311.0 MPH	201 MPH	206.33531	198.18537	203.56163	203.6 MPH	201 MPH	1.66	202.1922
	Alignment 17-21	0.4 miles	C	11,000 ft	200.7 MPH	201 MPH	221.19136	189.94338	211.21794	200.7 MPH	201 MPH	6.53	200.7496
	Alignment 17-22	0.6 miles	S	0,000 ft	311.0 MPH	201 MPH	234.92514	181.6927	220.93644	220.9 MPH	206 MPH	10.67	211.9594
	Alignment 17-24	0.1 miles	S	0,000 ft	311.0 MPH	206 MPH	209.63838	204.19543	207.33216	207.3 MPH	205 MPH	1.11	206.3479
	Alignment 17-25	0.2 miles	C	18,017 ft	256.9 MPH	205 MPH	216.45555	199.15258	208.39027	208.4 MPH	200 MPH	3.58	204.9146
	Alignment 17-26	0.4 miles	C	18,000 ft	256.8 MPH	200 MPH	221.16976	188.7742	205.71468	205.7 MPH	189 MPH	6.82	198.7587
	Alignment 17-27	0.9 miles	S	0,000 ft	311.0 MPH	189 MPH	238.56817	159.20713	203.24978	203.2 MPH	160 MPH	17.37	185.3636
	Alignment 17-28	0.7 miles	C	7,017 ft	160.3 MPH	160 MPH	204.06633	133.81052	183.42408	160.3 MPH	160 MPH	15.10	160.3311
	Alignment 17-29	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.29997	136.23766	181.33643	160.1 MPH	160 MPH	13.73	160.1428
	Alignment 17-30	0.4 miles	S	0,000 ft	311.0 MPH	160 MPH	185.967	145.8447	173.53594	173.5 MPH	160 MPH	8.14	166.8394
	Alignment 17-31	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	183.72771	147.22738	172.33919	160.1 MPH	160 MPH	7.70	160.1428
	Alignment 17-32	0.3 miles	C	7,017 ft	160.3 MPH	160 MPH	184.08382	147.00948	172.52909	160.3 MPH	160 MPH	7.81	160.3301
	Alignment 17-33	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	193.48603	140.97556	177.59865	160.1 MPH	160 MPH	11.19	160.1428
	Alignment 17-34	1.1 miles	C	18,017 ft	256.9 MPH	160 MPH	228.03401	0	216.351	216.4 MPH	204 MPH	20.84	192.1974
	Alignment 17-35	0.3 miles	C	18,017 ft	256.9 MPH	204 MPH	220.4207	195.46002	208.56808	208.6 MPH	196 MPH	5.21	203.3503
	Alignment 17-36	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
	Alignment 17-37	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
	Alignment 17-38	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
	Alignment 17-39	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
	Alignment 17-40	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
	Alignment 17-41	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
	Alignment 17-42	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	212.27668	212.3 MPH	212 MPH	6.36	201.8202
	Alignment 17-43	0.3 miles	S	0,000 ft	311.0 MPH	212 MPH	229.67977	203.2155	227.84732	227.8 MPH	226 MPH	5.29	220.7897
	Alignment 17-44	0.2 miles	S	0,000 ft	311.0 MPH	226 MPH	235.71174	221.09076	228.95854	229.0 MPH	222 MPH	3.01	226.0759
	Alignment 17-45	1.4 miles	C	28,017 ft	311.0 MPH	222 MPH	286.50759	182.28421	240.39093	240.4 MPH	183 MPH	23.03	216.4278
	Alignment 17-46	0.7 miles	S	0,000 ft	311.0 MPH	183 MPH	223.87016	159.21489	194.63244	194.6 MPH	160 MPH	14.02	180.2700
	Alignment 17-47	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.75753	142.1269	176.65881	160.1 MPH	160 MPH	10.56	160.1428
	Alignment 17-48	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.25198	139.77869	178.647	160.3 MPH	160 MPH	11.83	160.3310
	Alignment 17-49	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 17-50	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 17-51	0.7 miles	C	18,017 ft	256.9 MPH	160 MPH	205.88408	132.10017	200.03032	200.0 MPH	194 MPH	13.95	182.3098
	Alignment 17-52	1.6 miles	S	0,000 ft	311.0 MPH	194 MPH	274.74585	0	199.0093	199.0 MPH	61 MPH	43.46	132.3466
	Alignment 17-53	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468889	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 17-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	92.606729	0	78.229408	78.2 MPH	61 MPH	10.61	69.5014
	Alignment 17-55	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 17-56	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	72.567416	72.6 MPH	42 MPH	12.95	59.9014
	Alignment 17-57	0.1 miles	C	1,000 ft	60.5 MPH	42 MPH	59.410077	0	42.009268	42.0 MPH	0 MPH	12.77	21.0093

Alignment 17 - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curve	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 17-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
	Alignment 17-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
	Alignment 17-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
	Alignment 17-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
	Alignment 17-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
	Alignment 17-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
	Alignment 17-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
BECKLEY AVE.	Alignment 17-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
	Alignment 17-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
	Alignment 17-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
	Alignment 17-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
	Alignment 17-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
	Alignment 17-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
	Alignment 17-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
	Alignment 17-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	381.7164	381.7 MPH	339 MPH	19.40	364.0325
	Alignment 17-16	0.5 miles	C	17,017 ft	339.3 MPH	339 MPH	356.1614	321.5646	342.3704	339.3 MPH	328 MPH	5.31	335.6457
	Alignment 17-17	0.8 miles	C	60,000 ft	621.0 MPH	328 MPH	354.2124	299.5022	328.2274	328.2 MPH	300 MPH	8.65	314.2256
	Alignment 17-18	0.7 miles	S	0,000 ft	621.0 MPH	300 MPH	325.2093	272.4682	300.2454	300.2 MPH	273 MPH	8.35	286.7474
	Alignment 17-19	0.4 miles	C	11,017 ft	273.0 MPH	273 MPH	288.434	256.6573	280.8272	273.0 MPH	273 MPH	4.82	273.0084
	Alignment 17-20	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	277.0324	268.9241	274.9263	274.9 MPH	273 MPH	1.23	273.9136
	Alignment 17-21	0.4 miles	C	11,000 ft	272.8 MPH	273 MPH	288.179	256.5088	280.5968	272.8 MPH	273 MPH	4.80	272.8039
	Alignment 17-22	0.6 miles	S	0,000 ft	621.0 MPH	273 MPH	298.8501	243.9929	293.4752	293.5 MPH	288 MPH	7.95	284.7306
	Alignment 17-24	0.1 miles	S	0,000 ft	621.0 MPH	288 MPH	290.6136	285.3625	288.316	288.3 MPH	286 MPH	0.80	287.2781
	Alignment 17-25	0.2 miles	C	18,017 ft	349.1 MPH	286 MPH	294.3196	277.4311	286.2761	286.3 MPH	278 MPH	2.60	282.2672
	Alignment 17-26	0.4 miles	C	18,000 ft	349.0 MPH	278 MPH	293.5985	261.4726	278.2481	278.2 MPH	262 MPH	5.01	270.2444
	Alignment 17-27	0.9 miles	S	0,000 ft	621.0 MPH	262 MPH	299.7295	217.8307	262.0199	262.0 MPH	218 MPH	13.42	239.9591
	Alignment 17-28	0.7 miles	C	7,017 ft	217.9 MPH	218 MPH	251.8094	177.5786	235.3374	217.9 MPH	218 MPH	11.11	217.8776
	Alignment 17-29	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.664	181.3424	233.6592	217.6 MPH	218 MPH	10.11	217.6222
	Alignment 17-30	0.4 miles	S	0,000 ft	621.0 MPH	218 MPH	237.2708	196.0138	227.6586	227.7 MPH	218 MPH	6.10	222.6404
	Alignment 17-31	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	235.5198	198.1143	226.7477	217.6 MPH	218 MPH	5.66	217.6222
	Alignment 17-32	0.3 miles	C	7,017 ft	217.9 MPH	218 MPH	235.7977	197.7834	226.892	217.9 MPH	218 MPH	5.75	217.8751
	Alignment 17-33	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	243.2089	188.5956	230.7704	217.6 MPH	218 MPH	8.23	217.6222
	Alignment 17-34	1.1 miles	C	18,017 ft	349.1 MPH	218 MPH	271.5018	144.9332	271.5018	271.5 MPH	272 MPH	16.37	244.5620
	Alignment 17-35	0.3 miles	C	18,017 ft	349.1 MPH	272 MPH	284.0466	258.3485	277.6	277.6 MPH	271 MPH	3.86	274.4205
	Alignment 17-36	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
	Alignment 17-37	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
	Alignment 17-38	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
	Alignment 17-39	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
	Alignment 17-40	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
	Alignment 17-41	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
	Alignment 17-42	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
	Alignment 17-43	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	272.9793	273.0 MPH	273 MPH	4.40	265.7435
	Alignment 17-44	0.2 miles	S	0,000 ft	621.0 MPH	273 MPH	281.0724	264.6387	281.0724	281.1 MPH	281 MPH	2.46	277.0258
	Alignment 17-45	1.4 miles	C	28,017 ft	435.4 MPH	281 MPH	334.3715	214.9398	296.0644	296.1 MPH	252 MPH	17.95	277.7224
	Alignment 17-46	0.7 miles	S	0,000 ft	621.0 MPH	252 MPH	283.0775	216.5067	252.48	252.5 MPH	218 MPH	10.74	235.2846
	Alignment 17-47	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.836	190.3528	230.0479	217.6 MPH	218 MPH	7.77	217.6222
	Alignment 17-48	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.6161	186.7667	231.6334	217.9 MPH	218 MPH	8.70	217.8774
	Alignment 17-49	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
	Alignment 17-50	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
	Alignment 17-51	0.7 miles	C	18,017 ft	349.1 MPH	218 MPH	253.1836	174.9768	233.0482	233.0 MPH	211 MPH	11.39	223.3871
	Alignment 17-52	1.6 miles	S	0,000 ft	621.0 MPH	211 MPH	287.0022	81.6806	211.2434	211.2 MPH	83 MPH	39.07	147.2076
	Alignment 17-53	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 17-54	0.2 miles	S	0,000 ft	621.0 MPH	83 MPH	108.3012	45.00426	96.16334	96.2 MPH	82 MPH	8.25	89.3731
	Alignment 17-55	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 17-56	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	82.56518	82.6 MPH	42 MPH	12.42	62.4361
	Alignment 17-57	0.1 miles	C	1,000 ft	82.3 MPH	42 MPH	59.41008	0	42.00927	42.0 MPH	0 MPH	12.77	21.0093

(Appendix C-6) Alignment 18

Alignment 18 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s² = 1 acceleration of gravity [g]
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 18-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 18-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 18-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 18-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 18-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 18-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 18-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 18-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 18-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 18-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 18-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 18-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 18-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 18-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 18-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	225.72297	205.0 MPH	195 MPH	34.61	204.0596
	Alignment 18-16	0.5 miles	C	17,017 ft	150.0 MPH	195 MPH	209.19735	179.68436	195.1455	150.0 MPH	180 MPH	17.93	99.3567
	Alignment 18-17	0.8 miles	C	60,000 ft	250.0 MPH	180 MPH	202.86256	153.7751	180.09611	180.1 MPH	154 MPH	16.26	167.0958
	Alignment 18-18	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	177.28748	126.49565	154.20741	154.2 MPH	127 MPH	17.02	140.7058
	Alignment 18-19	0.4 miles	C	11,017 ft	125.0 MPH	127 MPH	142.71743	109.04006	127.41324	125.0 MPH	110 MPH	11.10	118.5937
	Alignment 18-20	0.1 miles	S	0,000 ft	205.0 MPH	110 MPH	114.81911	104.95986	110.49757	110.5 MPH	106 MPH	3.10	108.4480
BECKLEY AVE.	Alignment 18-21	0.4 miles	C	11,000 ft	125.0 MPH	106 MPH	124.32992	83.750046	106.49631	106.5 MPH	85 MPH	13.65	95.9851
	Alignment 18-22	0.6 miles	S	0,000 ft	205.0 MPH	85 MPH	120.47066	0	85.185623	85.2 MPH	0 MPH	53.00	42.6852
	Alignment 18-23-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 18-24	0.1 miles	S	0,000 ft	205.0 MPH	0 MPH	27.207126	0	27.207126	27.2 MPH	27 MPH	16.89	13.6036
	Alignment 18-25	0.2 miles	C	18,017 ft	125.0 MPH	27 MPH	55.708858	0	55.708858	55.7 MPH	56 MPH	17.70	41.4580
	Alignment 18-26	0.5 miles	C	18,000 ft	125.0 MPH	56 MPH	96.44317	0	96.44317	96.4 MPH	96 MPH	25.29	76.0760
	Alignment 18-27	0.5 miles	C	7,000 ft	125.0 MPH	96 MPH	123.4821	57.920118	123.4821	123.5 MPH	123 MPH	16.79	109.9626
	Alignment 18-28	0.3 miles	S	0,000 ft	205.0 MPH	123 MPH	137.65306	107.45834	131.47883	131.5 MPH	125 MPH	8.99	127.8202
	Alignment 18-29	0.9 miles	C	7,017 ft	125.0 MPH	125 MPH	161.99608	70.762065	144.6854	125.0 MPH	125 MPH	26.37	125.0000
	Alignment 18-30	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	128.21046	121.70488	126.61541	126.6 MPH	125 MPH	2.01	125.8077
	Alignment 18-31	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.61488	92.548145	138.4013	125.0 MPH	125 MPH	17.53	125.0000
	Alignment 18-32	0.5 miles	C	22,017 ft	150.0 MPH	125 MPH	146.42033	99.050934	146.42033	146.4 MPH	146 MPH	13.30	135.7102
	Alignment 18-33	0.4 miles	C	22,000 ft	150.0 MPH	146 MPH	160.00994	131.43304	155.08575	150.0 MPH	150 MPH	8.64	149.5398
	Alignment 18-34	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 18-35	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	159.72675	150.0 MPH	150 MPH	12.47	150.0000
	Alignment 18-36	1.0 miles	C	18,017 ft	150.0 MPH	150 MPH	183.46068	106.49967	176.3786	150.0 MPH	169 MPH	23.84	145.2990
	Alignment 18-37	0.8 miles	C	16,000 ft	175.0 MPH	169 MPH	195.25197	137.83566	169.06704	169.1 MPH	138 MPH	19.33	153.5669
	Alignment 18-38	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 18-39	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 18-40	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 18-41	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 18-42	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 18-43	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 18-44	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	169.89406	169.9 MPH	170 MPH	7.12	164.1606
	Alignment 18-45	0.2 miles	S	0,000 ft	205.0 MPH	170 MPH	176.23526	163.30682	176.23526	176.2 MPH	176 MPH	3.94	173.0647
	Alignment 18-46	1.4 miles	C	28,017 ft	250.0 MPH	176 MPH	217.06067	122.48427	188.19051	188.2 MPH	154 MPH	28.65	173.9756
	Alignment 18-47	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	178.48142	124.80538	154.0789	154.1 MPH	125 MPH	18.10	139.5787
	Alignment 18-48	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.9823	101.14412	135.36038	125.0 MPH	125 MPH	13.40	125.0000
	Alignment 18-49	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 18-50	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 18-51	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 18-52	1.3 miles	C	18,017 ft	200.0 MPH	125 MPH	174.1741	30.22221	148.76259	148.8 MPH	118 MPH	33.85	134.9066
	Alignment 18-53	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 18-54	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 18-55	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 18-56	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 18-57	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 18-58	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 18-59	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 18 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
											(sec)	
Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)		(mph)
Alignment 18-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
Alignment 18-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
Alignment 18-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
Alignment 18-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
Alignment 18-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
Alignment 18-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
Alignment 18-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
Alignment 18-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
Alignment 18-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
Alignment 18-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
Alignment 18-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
Alignment 18-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
Alignment 18-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	280.67367	280.7 MPH	270 MPH	16.05	262.7865
Alignment 18-14	0.4 miles	C	70,000 ft	311.0 MPH	270 MPH	288.45083	260.49257	275.06806	275.1 MPH	261 MPH	5.82	269.2258
Alignment 18-15	2.0 miles	S	0,000 ft	311.0 MPH	261 MPH	338.51729	213.00953	283.18718	283.2 MPH	214 MPH	27.77	254.2998
Alignment 18-16	0.5 miles	C	17,017 ft	249.7 MPH	214 MPH	239.83233	200.14362	221.26969	221.3 MPH	201 MPH	8.37	212.8507
Alignment 18-17	0.8 miles	C	60,000 ft	311.0 MPH	201 MPH	241.41958	177.89823	212.09362	212.1 MPH	178 MPH	13.73	197.8701
Alignment 18-18	0.7 miles	S	0,000 ft	311.0 MPH	178 MPH	217.8189	154.81973	189.03713	189.0 MPH	155 MPH	13.70	174.8345
Alignment 18-19	0.4 miles	C	11,017 ft	200.9 MPH	155 MPH	180.79164	140.66177	162.12128	162.1 MPH	141 MPH	8.58	153.3257
Alignment 18-20	0.1 miles	S	0,000 ft	311.0 MPH	141 MPH	148.64182	137.10424	143.41965	143.4 MPH	138 MPH	2.38	141.1728
Alignment 18-21	0.4 miles	C	11,000 ft	200.7 MPH	138 MPH	166.34062	121.74592	145.86501	145.9 MPH	122 MPH	9.64	135.9155
Alignment 18-22	0.6 miles	S	0,000 ft	311.0 MPH	122 MPH	172.54972	0	122.01108	122.0 MPH	0 MPH	37.08	61.0111
Alignment 18-23-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
Alignment 18-24	0.1 miles	S	0,000 ft	311.0 MPH	0 MPH	38.887658	0	38.887658	38.9 MPH	39 MPH	11.82	19.4438
Alignment 18-25	0.2 miles	C	18,017 ft	256.9 MPH	39 MPH	79.625721	0	79.625721	79.6 MPH	80 MPH	12.38	59.2567
Alignment 18-26	0.5 miles	C	18,000 ft	256.8 MPH	80 MPH	137.84804	0	137.84804	137.8 MPH	138 MPH	17.69	108.7369
Alignment 18-27	0.5 miles	C	7,000 ft	160.1 MPH	138 MPH	176.4953	114.26083	168.51752	160.1 MPH	160 MPH	12.00	153.8481
Alignment 18-28	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.22442	148.13907	171.62737	171.6 MPH	160 MPH	6.92	165.9319
Alignment 18-29	0.9 miles	C	7,017 ft	160.3 MPH	160 MPH	217.7101	122.83501	191.18559	160.3 MPH	160 MPH	20.56	160.3314
Alignment 18-30	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	165.42953	157.77594	162.80763	162.8 MPH	160 MPH	1.56	161.5206
Alignment 18-31	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.17152	136.33004	181.26549	160.1 MPH	160 MPH	13.69	160.1428
Alignment 18-32	0.5 miles	C	22,017 ft	284.0 MPH	160 MPH	193.70923	140.82545	193.70923	193.7 MPH	194 MPH	10.20	176.9260
Alignment 18-33	0.4 miles	C	22,000 ft	283.9 MPH	194 MPH	214.54759	182.64446	214.54759	214.5 MPH	215 MPH	6.33	204.1284
Alignment 18-34	0.2 miles	S	0,000 ft	311.0 MPH	215 MPH	226.70356	208.33899	226.70356	226.7 MPH	227 MPH	3.69	220.6256
Alignment 18-35	0.5 miles	C	18,000 ft	256.8 MPH	227 MPH	252.39619	213.00055	237.68449	237.7 MPH	222 MPH	8.10	230.8107
Alignment 18-36	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
Alignment 18-37	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
Alignment 18-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
Alignment 18-39	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
Alignment 18-40	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
Alignment 18-41	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
Alignment 18-42	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
Alignment 18-43	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	212.27668	212.3 MPH	212 MPH	6.36	201.8202
Alignment 18-44	0.3 miles	S	0,000 ft	311.0 MPH	212 MPH	229.67977	203.2155	227.84732	227.8 MPH	226 MPH	5.29	220.7897
Alignment 18-45	0.2 miles	S	0,000 ft	311.0 MPH	226 MPH	235.71174	221.09076	228.95854	229.0 MPH	222 MPH	3.01	226.0759
Alignment 18-46	1.4 miles	C	28,017 ft	311.0 MPH	222 MPH	286.50759	182.28421	240.39093	240.4 MPH	183 MPH	23.03	216.4278
Alignment 18-47	0.7 miles	S	0,000 ft	311.0 MPH	183 MPH	223.87016	159.21489	194.63244	194.6 MPH	160 MPH	14.02	180.2700
Alignment 18-48	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.48675	142.30549	176.51189	160.1 MPH	160 MPH	10.46	160.1428
Alignment 18-49	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
Alignment 18-50	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
Alignment 18-51	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
Alignment 18-52	1.3 miles	C	18,017 ft	256.9 MPH	160 MPH	236.01029	0	200.43684	200.4 MPH	157 MPH	25.45	179.4746
Alignment 18-53	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
Alignment 18-54	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
Alignment 18-55	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
Alignment 18-56	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
Alignment 18-57	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
Alignment 18-58	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
Alignment 18-59	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 18 - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 18-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 18-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 18-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 18-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 18-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 18-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 18-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 18-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 18-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 18-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 18-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 18-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 18-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 18-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	357.1627	357.2 MPH	354 MPH	4.44	352.3302
Alignment 18-15	2.0 miles	S	0,000 ft	621.0 MPH	354 MPH	414.4743	280.79	354.0833	354.1 MPH	281 MPH	22.24	317.5832
Alignment 18-16	0.5 miles	C	17,017 ft	339.3 MPH	281 MPH	301.1388	259.3019	281.3224	281.3 MPH	260 MPH	6.58	270.8176
Alignment 18-17	0.8 miles	C	60,000 ft	621.0 MPH	260 MPH	292.3738	222.9744	260.011	260.0 MPH	223 MPH	11.25	241.5110
Alignment 18-18	0.7 miles	S	0,000 ft	621.0 MPH	223 MPH	255.9103	184.3039	223.288	223.3 MPH	185 MPH	11.72	204.2859
Alignment 18-19	0.4 miles	C	11,017 ft	273.0 MPH	185 MPH	207.0884	159.8887	185.0481	185.0 MPH	160 MPH	7.63	172.5480
Alignment 18-20	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	166.7735	152.9268	160.035	160.0 MPH	153 MPH	2.15	156.5348
Alignment 18-21	0.4 miles	C	11,000 ft	272.8 MPH	153 MPH	178.981	121.5886	153.1636	153.2 MPH	122 MPH	9.52	137.6628
Alignment 18-22	0.6 miles	S	0,000 ft	621.0 MPH	122 MPH	172.5497	0	122.0111	122.0 MPH	0 MPH	37.08	61.0111
Alignment 18-23-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
Alignment 18-24	0.1 miles	S	0,000 ft	621.0 MPH	0 MPH	38.88766	0	38.88766	38.9 MPH	39 MPH	11.82	19.4438
Alignment 18-25	0.2 miles	C	18,017 ft	349.1 MPH	39 MPH	79.62572	0	79.62572	79.6 MPH	80 MPH	12.38	59.2567
Alignment 18-26	0.5 miles	C	18,000 ft	349.0 MPH	80 MPH	137.848	0	137.848	137.8 MPH	138 MPH	17.69	108.7369
Alignment 18-27	0.5 miles	C	7,000 ft	217.6 MPH	138 MPH	176.4953	82.78632	176.4953	176.5 MPH	176 MPH	11.75	157.1717
Alignment 18-28	0.3 miles	S	0,000 ft	621.0 MPH	176 MPH	196.7501	153.5922	196.7501	196.8 MPH	197 MPH	6.16	186.6227
Alignment 18-29	0.9 miles	C	7,017 ft	217.9 MPH	197 MPH	245.7684	130.4572	232.2425	217.9 MPH	218 MPH	15.44	213.4850
Alignment 18-30	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	221.657	214.0334	219.6489	219.6 MPH	218 MPH	1.15	218.6953
Alignment 18-31	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.5605	181.4842	233.6041	217.6 MPH	218 MPH	10.07	217.6222
Alignment 18-32	0.5 miles	C	22,017 ft	385.9 MPH	218 MPH	243.3865	188.3663	243.3865	243.4 MPH	243 MPH	7.83	230.5043
Alignment 18-33	0.4 miles	C	22,000 ft	385.8 MPH	243 MPH	260.2775	225.2323	260.2775	260.3 MPH	260 MPH	5.13	251.8320
Alignment 18-34	0.2 miles	S	0,000 ft	621.0 MPH	260 MPH	270.3853	249.7609	270.3853	270.4 MPH	270 MPH	3.07	265.3314
Alignment 18-35	0.5 miles	C	18,000 ft	349.0 MPH	270 MPH	292.2628	246.5743	292.2628	292.3 MPH	292 MPH	6.65	281.3240
Alignment 18-36	1.0 miles	C	18,017 ft	349.1 MPH	292 MPH	328.9566	250.2452	301.3747	301.4 MPH	271 MPH	12.00	288.6407
Alignment 18-37	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
Alignment 18-38	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
Alignment 18-39	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
Alignment 18-40	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
Alignment 18-41	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
Alignment 18-42	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
Alignment 18-43	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
Alignment 18-44	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	272.9793	273.0 MPH	273 MPH	4.40	265.7435
Alignment 18-45	0.2 miles	S	0,000 ft	621.0 MPH	273 MPH	281.0724	264.6387	281.0724	281.1 MPH	281 MPH	2.46	277.0258
Alignment 18-46	1.4 miles	C	28,017 ft	435.4 MPH	281 MPH	334.3715	214.9398	296.0644	296.1 MPH	252 MPH	17.95	277.7224
Alignment 18-47	0.7 miles	S	0,000 ft	621.0 MPH	252 MPH	283.0775	216.5067	252.48	252.5 MPH	218 MPH	10.74	235.2846
Alignment 18-48	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.6213	190.6252	229.9351	217.6 MPH	218 MPH	7.70	217.6222
Alignment 18-49	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.8281	186.4887	231.7454	217.9 MPH	218 MPH	8.77	217.8774
Alignment 18-50	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
Alignment 18-51	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
Alignment 18-52	1.3 miles	C	18,017 ft	349.1 MPH	218 MPH	278.2347	131.5458	252.1344	252.1 MPH	223 MPH	19.34	236.1092
Alignment 18-53	1.0 miles	S	0,000 ft	621.0 MPH	223 MPH	272.7595	158.3044	223.2473	223.2 MPH	159 MPH	19.60	191.2464
Alignment 18-54	0.3 miles	C	1,017 ft	82.9 MPH	159 MPH	180.1183	134.6083	159.166	82.9 MPH	135 MPH	28.69	37.9258
Alignment 18-55	0.3 miles	S	0,000 ft	621.0 MPH	135 MPH	157.2875	108.2158	135.3151	135.3 MPH	109 MPH	8.09	122.3114
Alignment 18-56	0.1 miles	C	1,000 ft	82.3 MPH	109 MPH	123.851	91.77646	109.0942	82.3 MPH	92 MPH	7.89	66.6375
Alignment 18-57	0.2 miles	S	0,000 ft	621.0 MPH	92 MPH	116.4834	57.96218	92.01192	92.0 MPH	58 MPH	10.34	75.0119
Alignment 18-58	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 18-59	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 18 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg
5798 mphph	5798 mphph	301 fps		32.2 ft/s² = 1 acceleration of gravity [g]

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 18-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 18-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 18-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 18-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 18-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 18-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 18-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 18-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 18-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 18-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 18-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 18-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 18-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 18-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 18-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 18-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	159.27732	150.0 MPH	150 MPH	11.88	150.0000
	Alignment 18-17	0.8 miles	C	60,000 ft	250.0 MPH	150 MPH	176.7858	117.24666	164.85936	164.9 MPH	152 MPH	17.21	157.8936
	Alignment 18-18	0.7 miles	S	0,000 ft	205.0 MPH	152 MPH	175.55299	124.05301	152.38742	152.4 MPH	125 MPH	17.24	138.8820
	Alignment 18-19	0.4 miles	C	11,017 ft	125.0 MPH	125 MPH	140.94065	106.70396	133.20898	125.0 MPH	125 MPH	10.53	125.0000
	Alignment 18-20	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	129.26108	120.58844	127.14839	127.1 MPH	125 MPH	2.67	126.0742
	Alignment 18-21	0.4 miles	C	11,000 ft	125.0 MPH	125 MPH	140.87913	106.78516	133.17644	125.0 MPH	125 MPH	10.48	125.0000
	Alignment 18-22	0.6 miles	S	0,000 ft	205.0 MPH	125 MPH	151.371	91.306184	153.70293	153.7 MPH	156 MPH	16.39	138.0031
	Alignment 18-24	0.1 miles	S	0,000 ft	205.0 MPH	156 MPH	158.35475	153.60915	156.19255	156.2 MPH	154 MPH	1.48	155.1770
	Alignment 18-25	0.2 miles	C	18,017 ft	125.0 MPH	154 MPH	161.49071	146.1258	154.41543	125.0 MPH	147 MPH	9.16	80.0939
	Alignment 18-26	0.5 miles	C	18,000 ft	125.0 MPH	147 MPH	166.75374	124.14182	147.36317	125.0 MPH	125 MPH	16.59	115.9456
	Alignment 18-27	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	146.87255	98.379139	136.37548	125.0 MPH	125 MPH	14.77	125.0000
	Alignment 18-28	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.01631	109.1992	132.19405	132.2 MPH	125 MPH	8.93	128.5970
	Alignment 18-29	0.9 miles	C	7,017 ft	125.0 MPH	125 MPH	161.99608	70.762065	144.6854	125.0 MPH	125 MPH	26.37	125.0000
	Alignment 18-30	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	128.21046	121.70488	126.61541	126.6 MPH	125 MPH	2.01	125.8077
	Alignment 18-31	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.61488	92.548145	138.4013	125.0 MPH	125 MPH	17.53	125.0000
	Alignment 18-32	0.5 miles	C	22,017 ft	150.0 MPH	125 MPH	146.42033	99.050934	146.42033	146.4 MPH	146 MPH	13.30	135.7102
	Alignment 18-33	0.4 miles	C	22,000 ft	150.0 MPH	146 MPH	160.00994	131.43304	155.08575	150.0 MPH	150 MPH	8.64	149.5398
	Alignment 18-34	0.2 miles	S	0,000 ft	205.0 MPH	150 MPH	158.51035	140.97684	154.31385	154.3 MPH	150 MPH	5.36	152.1569
	Alignment 18-35	0.5 miles	C	18,000 ft	150.0 MPH	150 MPH	168.89425	128.35394	159.72675	150.0 MPH	150 MPH	12.47	150.0000
	Alignment 18-36	1.0 miles	C	18,017 ft	150.0 MPH	150 MPH	183.46068	106.49967	175.90028	150.0 MPH	168 MPH	23.76	145.7672
	Alignment 18-37	0.8 miles	C	16,000 ft	175.0 MPH	168 MPH	194.38706	136.60772	168.56798	168.6 MPH	138 MPH	19.33	153.5576
	Alignment 18-38	0.3 miles	S	0,000 ft	205.0 MPH	138 MPH	149.99934	124.85271	138.06665	138.1 MPH	125 MPH	8.15	131.5663
	Alignment 18-39	0.6 miles	C	7,000 ft	125.0 MPH	125 MPH	150.39596	92.903477	138.28222	125.0 MPH	125 MPH	17.37	125.0000
	Alignment 18-40	0.6 miles	C	7,017 ft	125.0 MPH	125 MPH	151.78182	90.621627	139.03726	125.0 MPH	125 MPH	18.41	125.0000
	Alignment 18-41	0.1 miles	S	0,000 ft	205.0 MPH	125 MPH	131.15787	118.52263	131.15787	131.2 MPH	131 MPH	3.82	128.0789
	Alignment 18-42	0.3 miles	S	0,000 ft	205.0 MPH	131 MPH	144.80064	115.92042	144.80064	144.8 MPH	145 MPH	8.47	137.9793
	Alignment 18-43	0.4 miles	C	16,000 ft	175.0 MPH	145 MPH	158.42709	129.75096	158.42709	158.4 MPH	158 MPH	8.46	151.6139
	Alignment 18-44	0.3 miles	S	0,000 ft	205.0 MPH	158 MPH	169.89406	146.06263	169.89406	169.9 MPH	170 MPH	7.12	164.1606
	Alignment 18-45	0.2 miles	S	0,000 ft	205.0 MPH	170 MPH	176.23526	163.30682	176.23526	176.2 MPH	176 MPH	3.94	173.0647
	Alignment 18-46	1.4 miles	C	28,017 ft	250.0 MPH	176 MPH	217.06067	122.48427	188.19051	188.2 MPH	154 MPH	28.65	173.9756
	Alignment 18-47	0.7 miles	S	0,000 ft	205.0 MPH	154 MPH	178.48142	124.80538	154.0789	154.1 MPH	125 MPH	18.10	139.5787
	Alignment 18-48	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.9823	101.14412	135.36038	125.0 MPH	125 MPH	13.40	125.0000
	Alignment 18-49	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 18-50	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 18-51	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 18-52	1.3 miles	C	18,017 ft	200.0 MPH	125 MPH	174.1741	30.22221	148.76259	148.8 MPH	118 MPH	33.85	134.9066
BECKLEY AVE.	Alignment 18-53	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 18-54	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 18-55	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 18-56	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 18-57	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 18-58	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 18-59	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 18 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 18-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
	Alignment 18-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
	Alignment 18-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
	Alignment 18-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
	Alignment 18-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
	Alignment 18-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
	Alignment 18-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
BECKLEY AVE.	Alignment 18-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
	Alignment 18-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
	Alignment 18-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
	Alignment 18-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
	Alignment 18-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
	Alignment 18-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	290.95605	291.0 MPH	291 MPH	15.93	264.7483
	Alignment 18-14	0.4 miles	C	70,000 ft	311.0 MPH	291 MPH	308.15467	282.15563	299.7001	299.7 MPH	291 MPH	5.30	295.3390
	Alignment 18-15	2.0 miles	S	0,000 ft	311.0 MPH	291 MPH	362.15184	248.86354	311.0441	311.0 MPH	250 MPH	24.74	285.4514
	Alignment 18-16	0.5 miles	C	17,017 ft	249.7 MPH	250 MPH	272.15154	237.91675	255.64669	249.7 MPH	238 MPH	7.22	246.8108
	Alignment 18-17	0.8 miles	C	60,000 ft	311.0 MPH	238 MPH	272.99526	218.83962	247.47466	247.5 MPH	219 MPH	11.53	235.6092
	Alignment 18-18	0.7 miles	S	0,000 ft	311.0 MPH	219 MPH	252.43231	200.61443	228.126	228.1 MPH	201 MPH	11.05	216.7850
	Alignment 18-19	0.4 miles	C	11,017 ft	200.9 MPH	201 MPH	221.40796	190.05684	211.40288	200.9 MPH	201 MPH	6.55	200.9001
	Alignment 18-20	0.1 miles	S	0,000 ft	311.0 MPH	201 MPH	206.33531	198.18537	203.56163	203.6 MPH	201 MPH	1.66	202.1922
	Alignment 18-21	0.4 miles	C	11,000 ft	200.7 MPH	201 MPH	221.19136	189.94338	211.21794	200.7 MPH	201 MPH	6.53	200.7496
	Alignment 18-22	0.6 miles	S	0,000 ft	311.0 MPH	201 MPH	234.92514	181.6927	211.87947	211.9 MPH	186 MPH	11.25	201.1576
	Alignment 18-24	0.1 miles	S	0,000 ft	311.0 MPH	186 MPH	190.02171	183.99938	187.03509	187.0 MPH	184 MPH	1.24	185.7719
	Alignment 18-25	0.2 miles	C	18,017 ft	256.9 MPH	184 MPH	196.6825	177.46197	187.57399	187.6 MPH	178 MPH	4.00	183.6025
	Alignment 18-26	0.5 miles	C	18,000 ft	256.8 MPH	178 MPH	210.58449	159.64395	187.07157	187.1 MPH	160 MPH	10.94	175.8571
	Alignment 18-27	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	194.40738	140.35375	178.10102	160.1 MPH	160 MPH	11.53	160.1428
	Alignment 18-28	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.22442	148.13907	171.62737	171.6 MPH	160 MPH	6.92	165.9319
	Alignment 18-29	0.9 miles	C	7,017 ft	160.3 MPH	160 MPH	217.7101	122.83501	191.18559	160.3 MPH	160 MPH	20.56	160.3314
	Alignment 18-30	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	165.42953	157.77594	162.80763	162.8 MPH	160 MPH	1.56	161.5206
	Alignment 18-31	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	200.17152	136.33004	181.26549	160.1 MPH	160 MPH	13.69	160.1428
	Alignment 18-32	0.5 miles	C	22,017 ft	284.0 MPH	160 MPH	193.70923	140.82545	193.70923	193.7 MPH	194 MPH	10.20	176.9260
	Alignment 18-33	0.4 miles	C	22,000 ft	283.9 MPH	194 MPH	214.54759	182.64446	214.54759	214.5 MPH	215 MPH	6.33	204.1284
	Alignment 18-34	0.2 miles	S	0,000 ft	311.0 MPH	215 MPH	226.70356	208.33899	226.70356	226.7 MPH	227 MPH	3.69	220.6256
	Alignment 18-35	0.5 miles	C	18,000 ft	256.8 MPH	227 MPH	252.39619	213.00055	237.68449	237.7 MPH	222 MPH	8.10	230.8107
	Alignment 18-36	1.0 miles	C	18,017 ft	256.9 MPH	222 MPH	268.47513	195.25926	235.04776	235.0 MPH	196 MPH	15.83	218.7798
	Alignment 18-37	0.8 miles	C	16,000 ft	242.1 MPH	196 MPH	240.73094	169.86368	208.38832	208.4 MPH	170 MPH	15.43	192.3659
	Alignment 18-38	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	189.63132	159.51238	175.50749	175.5 MPH	160 MPH	6.34	169.1256
	Alignment 18-39	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	199.83497	136.5715	181.07973	160.1 MPH	160 MPH	13.56	160.1428
	Alignment 18-40	0.6 miles	C	7,017 ft	160.3 MPH	160 MPH	201.96424	135.02962	182.33996	160.3 MPH	160 MPH	14.35	160.3311
	Alignment 18-41	0.1 miles	S	0,000 ft	311.0 MPH	160 MPH	170.08437	155.33443	170.08437	170.1 MPH	170 MPH	2.96	165.2079
	Alignment 18-42	0.3 miles	S	0,000 ft	311.0 MPH	170 MPH	191.36375	158.63119	191.36375	191.4 MPH	191 MPH	6.47	180.7241
	Alignment 18-43	0.4 miles	C	16,000 ft	242.1 MPH	191 MPH	212.27668	180.24475	212.27668	212.3 MPH	212 MPH	6.36	201.8202
	Alignment 18-44	0.3 miles	S	0,000 ft	311.0 MPH	212 MPH	229.67977	203.2155	227.84732	227.8 MPH	226 MPH	5.29	220.7897
	Alignment 18-45	0.2 miles	S	0,000 ft	311.0 MPH	226 MPH	235.71174	221.09076	228.95854	229.0 MPH	222 MPH	3.01	226.0759
	Alignment 18-46	1.4 miles	C	28,017 ft	311.0 MPH	222 MPH	286.50759	182.28421	240.39093	240.4 MPH	183 MPH	23.03	216.4278
	Alignment 18-47	0.7 miles	S	0,000 ft	311.0 MPH	183 MPH	223.87016	159.21489	194.63244	194.6 MPH	160 MPH	14.02	180.2700
	Alignment 18-48	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.48675	142.30549	176.51189	160.1 MPH	160 MPH	10.46	160.1428
	Alignment 18-49	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
	Alignment 18-50	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 18-51	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 18-52	1.3 miles	C	18,017 ft	256.9 MPH	160 MPH	236.01029	0	200.43684	200.4 MPH	157 MPH	25.45	179.4746
	Alignment 18-53	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
	Alignment 18-54	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 18-55	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 18-56	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 18-57	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 18-58	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 18-59	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 18 - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total		
						based on distance	based on distance	Speed (theo)			Segment Time	Avg. Speed	
BEACH ST.	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)	
	Alignment 18-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
	Alignment 18-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
	Alignment 18-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
	Alignment 18-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
	Alignment 18-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
	Alignment 18-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 18-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322	
BECKLEY AVE.	Alignment 18-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
	Alignment 18-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
	Alignment 18-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
	Alignment 18-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
	Alignment 18-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
	Alignment 18-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
	Alignment 18-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
	Alignment 18-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	381.7164	381.7 MPH	339 MPH	19.40	364.0325
	Alignment 18-16	0.5 miles	C	17,017 ft	339.3 MPH	339 MPH	356.1614	321.5646	342.3704	339.3 MPH	328 MPH	5.31	335.6457
	Alignment 18-17	0.8 miles	C	60,000 ft	621.0 MPH	328 MPH	354.2124	299.5022	328.2274	328.2 MPH	300 MPH	8.65	314.2256
	Alignment 18-18	0.7 miles	S	0,000 ft	621.0 MPH	300 MPH	325.2093	272.4682	300.2454	300.2 MPH	273 MPH	8.35	286.7474
	Alignment 18-19	0.4 miles	C	11,017 ft	273.0 MPH	273 MPH	288.434	256.6573	280.8272	273.0 MPH	273 MPH	4.82	273.0084
	Alignment 18-20	0.1 miles	S	0,000 ft	621.0 MPH	273 MPH	277.0324	268.9241	274.9263	274.9 MPH	273 MPH	1.23	273.9136
	Alignment 18-21	0.4 miles	C	11,000 ft	272.8 MPH	273 MPH	288.179	256.5088	280.5968	272.8 MPH	273 MPH	4.80	272.8039
	Alignment 18-22	0.6 miles	S	0,000 ft	621.0 MPH	273 MPH	298.8501	243.9929	277.7916	277.8 MPH	255 MPH	8.44	267.9941
	Alignment 18-24	0.1 miles	S	0,000 ft	621.0 MPH	255 MPH	257.9482	252.0174	255.4861	255.5 MPH	253 MPH	0.90	254.4066
	Alignment 18-25	0.2 miles	C	18,017 ft	349.1 MPH	253 MPH	262.3681	243.2714	253.3506	253.4 MPH	244 MPH	2.95	248.8379
	Alignment 18-26	0.5 miles	C	18,000 ft	349.0 MPH	244 MPH	268.6965	216.5044	244.4967	244.5 MPH	218 MPH	8.32	231.2988
	Alignment 18-27	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	243.9425	187.6457	231.1573	217.6 MPH	218 MPH	8.48	217.6222
	Alignment 18-28	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.349	199.4979	226.2637	226.3 MPH	218 MPH	5.17	222.0061
	Alignment 18-29	0.9 miles	C	7,017 ft	217.9 MPH	218 MPH	262.9878	160.5601	241.4887	217.9 MPH	218 MPH	15.13	217.8785
	Alignment 18-30	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	221.657	214.0334	219.6489	219.6 MPH	218 MPH	1.15	218.6953
	Alignment 18-31	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.5605	181.4842	233.6041	217.6 MPH	218 MPH	10.07	217.6222
	Alignment 18-32	0.5 miles	C	22,017 ft	385.9 MPH	218 MPH	243.3865	188.3663	243.3865	243.4 MPH	243 MPH	7.83	230.5043
	Alignment 18-33	0.4 miles	C	22,000 ft	385.8 MPH	243 MPH	260.2775	225.2323	260.2775	260.3 MPH	260 MPH	5.13	251.8320
	Alignment 18-34	0.2 miles	S	0,000 ft	621.0 MPH	260 MPH	270.3853	249.7609	270.3853	270.4 MPH	270 MPH	3.07	265.3314
	Alignment 18-35	0.5 miles	C	18,000 ft	349.0 MPH	270 MPH	292.2628	246.5743	292.2628	292.3 MPH	292 MPH	6.65	281.3240
	Alignment 18-36	1.0 miles	C	18,017 ft	349.1 MPH	292 MPH	328.9566	250.2452	301.3747	301.4 MPH	271 MPH	12.00	288.6407
	Alignment 18-37	0.8 miles	C	16,000 ft	329.0 MPH	271 MPH	304.9203	232.1758	271.3534	271.4 MPH	233 MPH	11.76	252.3502
	Alignment 18-38	0.3 miles	S	0,000 ft	621.0 MPH	233 MPH	247.6874	217.3223	233.1399	233.1 MPH	218 MPH	4.76	225.4498
	Alignment 18-39	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	248.2896	181.8547	233.46	217.6 MPH	218 MPH	9.98	217.6222
	Alignment 18-40	0.6 miles	C	7,017 ft	217.9 MPH	218 MPH	250.0065	179.487	234.4934	217.9 MPH	218 MPH	10.56	217.8776
	Alignment 18-41	0.1 miles	S	0,000 ft	621.0 MPH	218 MPH	225.1523	210.3533	225.1523	225.2 MPH	225 MPH	2.21	221.5154
	Alignment 18-42	0.3 miles	S	0,000 ft	621.0 MPH	225 MPH	241.6298	207.3697	241.6298	241.6 MPH	242 MPH	5.01	233.3911
	Alignment 18-43	0.4 miles	C	16,000 ft	329.0 MPH	242 MPH	258.5078	223.4808	258.5078	258.5 MPH	259 MPH	5.13	250.0688
	Alignment 18-44	0.3 miles	S	0,000 ft	621.0 MPH	259 MPH	272.9793	243.1766	272.9793	273.0 MPH	273 MPH	4.40	265.7435
	Alignment 18-45	0.2 miles	S	0,000 ft	621.0 MPH	273 MPH	281.0724	264.6387	281.0724	281.1 MPH	281 MPH	2.46	277.0258
	Alignment 18-46	1.4 miles	C	28,017 ft	435.4 MPH	281 MPH	334.3715	214.9398	296.0644	296.1 MPH	252 MPH	17.95	277.7224
	Alignment 18-47	0.7 miles	S	0,000 ft	621.0 MPH	252 MPH	283.0775	216.5067	252.48	252.5 MPH	218 MPH	10.74	235.2846
	Alignment 18-48	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.6213	190.6252	229.9351	217.6 MPH	218 MPH	7.70	217.6222
	Alignment 18-49	0.5 miles	C	7,017 ft	217.9 MPH	218 MPH	244.8281	186.4887	231.7454	217.9 MPH	218 MPH	8.77	217.8774
	Alignment 18-50	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
	Alignment 18-51	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
	Alignment 18-52	1.3 miles	C	18,017 ft	349.1 MPH	218 MPH	278.2347	131.5458	252.1344	252.1 MPH	223 MPH	19.34	236.1092
	Alignment 18-53	1.0 miles	S	0,000 ft	621.0 MPH	223 MPH	272.7595	158.3044	223.2473	223.2 MPH	159 MPH	19.60	191.2464
	Alignment 18-54	0.3 miles	C	1,017 ft	82.9 MPH	159 MPH	180.1183	134.6083	159.166	82.9 MPH	135 MPH	28.69	37.9258
	Alignment 18-55	0.3 miles	S	0,000 ft	621.0 MPH	135 MPH	157.2875	108.2158	135.3151	135.3 MPH	109 MPH	8.09	122.3114
	Alignment 18-56	0.1 miles	C	1,000 ft	82.3 MPH	109 MPH	123.851	91.77646	109.0942	82.3 MPH	92 MPH	7.89	66.6375
	Alignment 18-57	0.2 miles	S	0,000 ft	621.0 MPH	92 MPH	116.4834	57.96218	92.01192	92.0 MPH	58 MPH	10.34	75.0119
	Alignment 18-58	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
	Alignment 18-59	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-7) Alignment 26

Alignment 26 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 26-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 26-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 26-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 26-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 26-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 26-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 26-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 26-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 26-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 26-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 26-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 26-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 26-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 26-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 26-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 26-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	185.25595	150.0 MPH	201 MPH	17.26	103.2168
	Alignment 26-17	0.8 miles	C	60,000 ft	250.0 MPH	201 MPH	221.70751	177.89823	201.48849	201.5 MPH	179 MPH	14.27	190.4781
	Alignment 26-18	0.7 miles	S	0,000 ft	205.0 MPH	179 MPH	199.38869	155.96842	179.01376	179.0 MPH	156 MPH	14.30	167.5137
	Alignment 26-19	0.4 miles	C	11,017 ft	125.0 MPH	156 MPH	169.0422	141.76295	156.10776	125.0 MPH	142 MPH	13.63	96.5354
	Alignment 26-20	0.1 miles	S	0,000 ft	205.0 MPH	142 MPH	145.76498	138.13244	142.42266	142.4 MPH	139 MPH	2.39	140.8762
BECKLEY AVE.	Alignment 26-21	0.4 miles	C	11,000 ft	125.0 MPH	139 MPH	153.43705	122.87827	139.49719	125.0 MPH	124 MPH	10.97	119.4274
	Alignment 26-22	0.9 miles	S	0,000 ft	205.0 MPH	124 MPH	161.18745	69.069563	124.29119	124.3 MPH	70 MPH	33.82	97.3439
	Alignment 26-23	0.3 miles	C	2,000 ft	70.1 MPH	70 MPH	94.523855	29.927416	83.216476	70.1 MPH	70 MPH	17.80	70.1085
	Alignment 26-24	0.8 miles	S	0,000 ft	205.0 MPH	70 MPH	117.96861	0	83.416401	83.4 MPH	0 MPH	60.05	46.5312
	Alignment 26-25-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 26-26	0.0 miles	S	0,000 ft	205.0 MPH	0 MPH	20.95886	0	20.95886	21.0 MPH	21 MPH	13.01	10.4794
	Alignment 26-27	0.1 miles	C	1,000 ft	49.6 MPH	21 MPH	45.314758	0	45.314758	45.3 MPH	45 MPH	15.12	33.1368
	Alignment 26-28	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.170039	0	79.170039	79.2 MPH	79 MPH	21.02	62.2424
	Alignment 26-29	0.1 miles	C	3,000 ft	85.9 MPH	79 MPH	88.85694	68.119266	87.373803	85.9 MPH	86 MPH	6.05	83.5638
	Alignment 26-30	0.1 miles	S	0,000 ft	205.0 MPH	86 MPH	94.645849	76.077442	90.362171	90.4 MPH	86 MPH	5.58	88.1136
	Alignment 26-31	0.1 miles	C	3,000 ft	85.9 MPH	86 MPH	94.931221	75.721049	90.511722	85.9 MPH	86 MPH	5.93	85.8651
	Alignment 26-32	0.7 miles	S	0,000 ft	205.0 MPH	86 MPH	125.41262	0	125.41262	125.4 MPH	125 MPH	24.55	105.6388
	Alignment 26-33	0.6 miles	C	7,000 ft	131.2 MPH	125 MPH	152.39593	90.731083	142.17548	131.2 MPH	131 MPH	17.82	130.5854
	Alignment 26-34	0.6 miles	C	7,000 ft	131.2 MPH	131 MPH	154.2356	103.04276	143.16396	131.2 MPH	131 MPH	15.59	131.1610
	Alignment 26-35	1.6 miles	S	0,000 ft	205.0 MPH	131 MPH	188.92069	0	188.92069	188.9 MPH	189 MPH	35.86	160.0409
	Alignment 26-36	2.1 miles	S	0,000 ft	205.0 MPH	189 MPH	245.54292	105.31255	194.82855	194.8 MPH	125 MPH	47.02	162.4074
	Alignment 26-37	0.3 miles	C	7,000 ft	125.0 MPH	125 MPH	136.26917	112.60867	130.75605	125.0 MPH	125 MPH	7.31	125.0000
	Alignment 26-38	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	146.05334	99.591277	135.93487	135.9 MPH	125 MPH	13.58	130.4674
	Alignment 26-39	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.59777	101.69309	135.15457	125.0 MPH	125 MPH	13.12	125.0000
	Alignment 26-40	2.1 miles	S	0,000 ft	205.0 MPH	125 MPH	200.08743	0	148.76152	148.8 MPH	65 MPH	66.76	113.5105
	Alignment 26-41	0.3 miles	C	2,000 ft	65.0 MPH	65 MPH	88.69906	24.134554	77.757711	65.0 MPH	65 MPH	17.40	65.0000
	Alignment 26-42	0.5 miles	S	0,000 ft	205.0 MPH	65 MPH	102.32686	0	102.32686	102.3 MPH	102 MPH	23.17	83.6634
	Alignment 26-43	0.5 miles	C	7,000 ft	125.0 MPH	102 MPH	125.95893	71.245492	125.48038	125.0 MPH	125 MPH	14.67	114.1251
	Alignment 26-44	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 26-45	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 26-46	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 26-47	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 26-48	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
	Alignment 26-49	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 26-50	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 26-51	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 26-52	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 26-53	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 26-54	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 26-55	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 26 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 26-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
	Alignment 26-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
	Alignment 26-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
	Alignment 26-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
	Alignment 26-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
	Alignment 26-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
	Alignment 26-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
	Alignment 26-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
	Alignment 26-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
	Alignment 26-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
	Alignment 26-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
	Alignment 26-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
	Alignment 26-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	286.51302	286.5 MPH	282 MPH	15.95	264.3952
	Alignment 26-14	0.4 miles	C	70,000 ft	311.0 MPH	282 MPH	299.71299	272.91093	286.66782	286.7 MPH	273 MPH	5.57	280.9795
	Alignment 26-15	2.0 miles	S	0,000 ft	311.0 MPH	273 MPH	347.85336	227.55452	294.09689	294.1 MPH	228 MPH	26.50	266.4924
	Alignment 26-16	0.5 miles	C	17,017 ft	249.7 MPH	228 MPH	252.40354	215.04759	234.90801	234.9 MPH	216 MPH	7.85	227.0595
	Alignment 26-17	0.8 miles	C	60,000 ft	311.0 MPH	216 MPH	254.04411	194.68636	226.45464	226.5 MPH	195 MPH	12.74	213.3466
	Alignment 26-18	0.7 miles	S	0,000 ft	311.0 MPH	195 MPH	231.91825	174.0981	205.43986	205.4 MPH	175 MPH	12.42	192.7737
	Alignment 26-19	0.4 miles	C	11,017 ft	200.9 MPH	175 MPH	198.206	162.43686	181.45884	181.5 MPH	163 MPH	7.57	173.7847
	Alignment 26-20	0.1 miles	S	0,000 ft	311.0 MPH	163 MPH	169.65374	159.64201	164.89753	164.9 MPH	160 MPH	2.07	162.8676
BECKLEY AVE.	Alignment 26-21	0.4 miles	C	11,000 ft	200.7 MPH	160 MPH	185.00054	146.21241	167.08411	167.1 MPH	147 MPH	8.26	158.7369
	Alignment 26-22	0.9 miles	S	0,000 ft	311.0 MPH	147 MPH	208.0272	0	159.06393	159.1 MPH	86 MPH	25.99	126.6622
	Alignment 26-23	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	124.65595	0	106.92627	85.6 MPH	86 MPH	14.58	85.5999
	Alignment 26-24	0.8 miles	S	0,000 ft	311.0 MPH	86 MPH	160.36444	0	113.39478	113.4 MPH	0 MPH	42.91	65.1231
	Alignment 26-25-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 26-26	0.0 miles	S	0,000 ft	311.0 MPH	0 MPH	29.956893	0	29.956893	30.0 MPH	30 MPH	9.10	14.9784
	Alignment 26-27	0.1 miles	C	1,000 ft	60.5 MPH	30 MPH	64.769239	0	62.684641	60.5 MPH	61 MPH	10.62	47.1618
	Alignment 26-28	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	110.78642	0	107.85327	107.9 MPH	105 MPH	15.30	85.5178
	Alignment 26-29	0.1 miles	C	3,000 ft	104.8 MPH	105 MPH	119.65056	96.764467	112.4884	104.8 MPH	105 MPH	4.82	104.8381
	Alignment 26-30	0.1 miles	S	0,000 ft	311.0 MPH	105 MPH	119.28606	96.984498	112.29467	112.3 MPH	105 MPH	4.53	108.5664
	Alignment 26-31	0.1 miles	C	3,000 ft	104.8 MPH	105 MPH	119.74843	96.705186	112.54046	104.8 MPH	105 MPH	4.85	104.8381
	Alignment 26-32	0.7 miles	S	0,000 ft	311.0 MPH	105 MPH	167.51402	0	163.86987	163.9 MPH	160 MPH	19.07	135.9962
	Alignment 26-33	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	202.38599	134.72017	182.49083	160.1 MPH	160 MPH	14.53	160.1428
	Alignment 26-34	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	197.73565	138.0591	179.92375	160.1 MPH	160 MPH	12.77	160.1428
	Alignment 26-35	1.6 miles	S	0,000 ft	311.0 MPH	160 MPH	251.82422	0	238.31853	238.3 MPH	224 MPH	28.11	204.1734
	Alignment 26-36	2.1 miles	S	0,000 ft	311.0 MPH	224 MPH	316.91203	0	251.07663	251.1 MPH	160 MPH	35.86	212.9355
	Alignment 26-37	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	177.9347	150.66994	169.27268	160.1 MPH	160 MPH	5.71	160.1428
	Alignment 26-38	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	193.1424	141.20603	177.41154	177.4 MPH	160 MPH	10.50	168.7772
	Alignment 26-39	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	190.89183	142.6962	176.1894	160.1 MPH	160 MPH	10.24	160.1428
	Alignment 26-40	2.1 miles	S	0,000 ft	311.0 MPH	160 MPH	274.79837	0	203.52087	203.5 MPH	86 MPH	49.02	154.5838
	Alignment 26-41	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	121.52716	0	105.10994	85.6 MPH	86 MPH	13.21	85.5999
	Alignment 26-42	0.5 miles	S	0,000 ft	311.0 MPH	86 MPH	141.72929	0	141.72929	141.7 MPH	142 MPH	17.06	113.6646
	Alignment 26-43	0.5 miles	C	7,000 ft	160.1 MPH	142 MPH	176.37644	121.21191	168.45529	160.1 MPH	160 MPH	10.78	155.3633
	Alignment 26-44	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
	Alignment 26-45	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 26-46	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 26-47	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	182.9558	183.0 MPH	183 MPH	6.93	171.5493
	Alignment 26-48	0.9 miles	C	18,017 ft	256.9 MPH	183 MPH	236.01029	150.30795	200.43684	200.4 MPH	157 MPH	18.51	182.4426
	Alignment 26-49	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
	Alignment 26-50	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 26-51	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 26-52	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 26-53	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 26-54	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 26-55	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 26 - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s²
11846 mphph	11846 mphph	911 fps			

= 1 acceleration of gravity [g]

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 26-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 26-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 26-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 26-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 26-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 26-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 26-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 26-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 26-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 26-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 26-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 26-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 26-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 26-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
Alignment 26-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	370.7313	370.7 MPH	314 MPH	20.41	345.9617
Alignment 26-16	0.5 miles	C	17,017 ft	339.3 MPH	314 MPH	332.1439	294.7413	314.1214	314.1 MPH	295 MPH	5.85	304.6207
Alignment 26-17	0.8 miles	C	60,000 ft	621.0 MPH	295 MPH	323.8941	262.9498	295.0224	295.0 MPH	263 MPH	9.74	279.0224
Alignment 26-18	0.7 miles	S	0,000 ft	621.0 MPH	263 MPH	291.4276	231.1016	263.3952	263.4 MPH	232 MPH	9.66	247.8903
Alignment 26-19	0.4 miles	C	11,017 ft	273.0 MPH	232 MPH	249.9692	212.5168	232.2215	232.2 MPH	213 MPH	5.91	222.7189
Alignment 26-20	0.1 miles	S	0,000 ft	621.0 MPH	213 MPH	218.1339	207.7393	213.1272	213.1 MPH	208 MPH	1.60	210.6241
Alignment 26-21	0.4 miles	C	11,000 ft	272.8 MPH	208 MPH	227.792	186.115	208.3965	208.4 MPH	187 MPH	6.62	197.8893
Alignment 26-22	0.9 miles	S	0,000 ft	621.0 MPH	187 MPH	237.9818	115.3373	187.3053	187.3 MPH	116 MPH	21.66	151.9660
Alignment 26-23	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	147.4552	72.93494	132.8049	116.3 MPH	116 MPH	10.73	116.3240
Alignment 26-24	0.8 miles	S	0,000 ft	621.0 MPH	116 MPH	178.6636	0	126.3342	126.3 MPH	0 MPH	41.44	67.4373
Alignment 26-25-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
Alignment 26-26	0.0 miles	S	0,000 ft	621.0 MPH	0 MPH	29.95689	0	29.95689	30.0 MPH	30 MPH	9.10	14.9784
Alignment 26-27	0.1 miles	C	1,000 ft	82.3 MPH	30 MPH	64.76924	0	64.76924	64.8 MPH	65 MPH	10.58	47.3631
Alignment 26-28	0.4 miles	S	0,000 ft	621.0 MPH	65 MPH	113.1592	0	113.1592	113.2 MPH	113 MPH	14.71	88.9642
Alignment 26-29	0.1 miles	C	3,000 ft	142.5 MPH	113 MPH	127.0049	97.36415	127.0049	127.0 MPH	127 MPH	4.21	120.0821
Alignment 26-30	0.1 miles	S	0,000 ft	621.0 MPH	127 MPH	139.1703	113.5434	139.1703	139.2 MPH	139 MPH	3.70	133.0876
Alignment 26-31	0.1 miles	C	3,000 ft	142.5 MPH	139 MPH	150.7218	126.569	146.6526	142.5 MPH	142 MPH	3.58	142.0062
Alignment 26-32	0.7 miles	S	0,000 ft	621.0 MPH	142 MPH	193.305	56.80643	193.305	193.3 MPH	193 MPH	15.45	167.8861
Alignment 26-33	0.6 miles	C	7,000 ft	217.6 MPH	193 MPH	229.5238	148.5007	223.6522	217.6 MPH	218 MPH	11.11	209.5316
Alignment 26-34	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	246.6031	184.1351	232.5645	217.6 MPH	218 MPH	9.39	217.6222
Alignment 26-35	1.6 miles	S	0,000 ft	621.0 MPH	218 MPH	291.769	97.92702	291.769	291.8 MPH	292 MPH	22.53	254.6956
Alignment 26-36	2.1 miles	S	0,000 ft	621.0 MPH	292 MPH	367.9489	186.7402	302.2795	302.3 MPH	218 MPH	28.92	264.0453
Alignment 26-37	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	231.0291	203.3332	224.4258	217.6 MPH	218 MPH	4.20	217.6222
Alignment 26-38	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	242.9356	188.9475	230.6264	230.6 MPH	218 MPH	7.90	224.1243
Alignment 26-39	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.1501	191.2209	229.6876	217.6 MPH	218 MPH	7.54	217.6222
Alignment 26-40	2.1 miles	S	0,000 ft	621.0 MPH	218 MPH	311.8138	0	235.3286	235.3 MPH	116 MPH	41.55	182.3862
Alignment 26-41	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	144.8198	78.03692	131.3469	116.3 MPH	116 MPH	9.72	116.3240
Alignment 26-42	0.5 miles	S	0,000 ft	621.0 MPH	116 MPH	162.1453	27.77443	162.1453	162.1 MPH	162 MPH	13.93	139.2346
Alignment 26-43	0.5 miles	C	7,000 ft	217.6 MPH	162 MPH	193.1646	123.5704	193.1646	193.2 MPH	193 MPH	9.43	177.6550
Alignment 26-44	0.5 miles	C	7,017 ft	217.9 MPH	193 MPH	223.3695	157.2615	220.6411	217.9 MPH	218 MPH	9.20	207.7911
Alignment 26-45	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
Alignment 26-46	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
Alignment 26-47	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	232.9673	233.0 MPH	231 MPH	5.26	226.0548
Alignment 26-48	0.9 miles	C	18,017 ft	349.1 MPH	231 MPH	274.9346	176.4454	231.2121	231.2 MPH	177 MPH	16.54	204.2112
Alignment 26-49	1.0 miles	S	0,000 ft	621.0 MPH	177 MPH	236.6384	81.6105	177.3062	177.3 MPH	83 MPH	28.77	130.2699
Alignment 26-50	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 26-51	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 26-52	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	96.66363	82.3 MPH	92 MPH	6.56	80.0543
Alignment 26-53	0.2 miles	S	0,000 ft	621.0 MPH	92 MPH	116.4834	57.96218	92.01192	92.0 MPH	58 MPH	10.34	75.0119
Alignment 26-54	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 26-55	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 26 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 26-1	0.4 miles	S	0,000 ft	205.0 MPH	0 MPH	71.156521	0	59.532556	59.5 MPH	45 MPH	45.98	34.1811
	Alignment 26-2	0.3 miles	C	1,000 ft	45.0 MPH	45 MPH	70.399579	0	59.08088	45.0 MPH	45 MPH	20.22	45.0000
	Alignment 26-3	0.1 miles	S	0,000 ft	205.0 MPH	45 MPH	60.656186	19.256872	53.404929	53.4 MPH	45 MPH	10.44	49.2025
	Alignment 26-4	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	75.306749	0	62.032679	45.0 MPH	45 MPH	25.15	45.0000
	Alignment 26-5	0.4 miles	S	0,000 ft	205.0 MPH	45 MPH	79.241668	0	79.241668	79.2 MPH	79 MPH	21.26	62.1208
	Alignment 26-6	0.6 miles	C	3,000 ft	80.0 MPH	79 MPH	113.64848	0	98.275068	80.0 MPH	80 MPH	25.76	79.9931
	Alignment 26-7	1.2 miles	S	0,000 ft	205.0 MPH	80 MPH	144.20202	0	124.0851	124.1 MPH	100 MPH	42.32	105.5756
	Alignment 26-8	0.9 miles	C	7,000 ft	100.0 MPH	100 MPH	142.49124	0	123.09296	100.0 MPH	100 MPH	31.99	100.0000
	Alignment 26-9	0.8 miles	C	7,017 ft	100.0 MPH	100 MPH	139.23231	24.786359	121.21394	100.0 MPH	100 MPH	29.14	100.0000
	Alignment 26-10	0.8 miles	S	0,000 ft	205.0 MPH	100 MPH	138.68056	27.707443	138.68056	138.7 MPH	139 MPH	24.02	119.3403
	Alignment 26-11	0.7 miles	C	11,237 ft	150.0 MPH	139 MPH	166.99284	102.84934	158.72399	150.0 MPH	150 MPH	18.18	147.8116
	Alignment 26-12	0.7 miles	C	16,000 ft	150.0 MPH	150 MPH	173.78709	121.64723	162.32984	150.0 MPH	150 MPH	15.94	150.0000
	Alignment 26-13	1.2 miles	S	0,000 ft	205.0 MPH	150 MPH	189.96093	94.418461	189.96093	190.0 MPH	190 MPH	24.81	169.9805
	Alignment 26-14	0.4 miles	C	70,000 ft	250.0 MPH	190 MPH	202.80231	176.18607	202.80231	202.8 MPH	203 MPH	7.97	196.3816
	Alignment 26-15	2.0 miles	S	0,000 ft	205.0 MPH	203 MPH	252.73843	135.57594	207.81809	205.0 MPH	150 MPH	39.03	180.9050
	Alignment 26-16	0.5 miles	C	17,017 ft	150.0 MPH	150 MPH	168.04325	129.46609	185.25595	150.0 MPH	201 MPH	17.26	103.2168
	Alignment 26-17	0.8 miles	C	60,000 ft	250.0 MPH	201 MPH	221.70751	177.89823	201.48849	201.5 MPH	179 MPH	14.27	190.4781
	Alignment 26-18	0.7 miles	S	0,000 ft	205.0 MPH	179 MPH	199.38869	155.96842	179.01376	179.0 MPH	156 MPH	14.30	167.5137
	Alignment 26-19	0.4 miles	C	11,017 ft	125.0 MPH	156 MPH	169.0422	141.76295	156.10776	125.0 MPH	142 MPH	13.63	96.5354
	Alignment 26-20	0.1 miles	S	0,000 ft	205.0 MPH	142 MPH	145.76498	138.13244	142.42266	142.4 MPH	139 MPH	2.39	140.8762
BECKLEY AVE.	Alignment 26-21	0.4 miles	C	11,000 ft	125.0 MPH	139 MPH	153.43705	122.87827	139.49719	125.0 MPH	124 MPH	10.97	119.4274
	Alignment 26-22	0.9 miles	S	0,000 ft	205.0 MPH	124 MPH	161.18745	69.069563	124.29119	124.3 MPH	70 MPH	33.82	97.3439
	Alignment 26-23	0.3 miles	C	2,000 ft	70.1 MPH	70 MPH	94.523855	29.927416	83.216476	70.1 MPH	70 MPH	17.80	70.1085
	Alignment 26-24	0.8 miles	S	0,000 ft	205.0 MPH	70 MPH	117.96861	0	91.448324	91.4 MPH	53 MPH	37.12	75.2774
	Alignment 26-26	0.0 miles	S	0,000 ft	205.0 MPH	53 MPH	56.993629	48.679834	53.412902	53.4 MPH	50 MPH	2.64	51.6599
	Alignment 26-27	0.1 miles	C	1,000 ft	49.6 MPH	50 MPH	63.810312	29.04219	57.13737	49.6 MPH	50 MPH	10.11	49.5742
	Alignment 26-28	0.4 miles	S	0,000 ft	205.0 MPH	50 MPH	81.682741	0	81.682741	81.7 MPH	82 MPH	19.93	65.6285
	Alignment 26-29	0.1 miles	C	3,000 ft	85.9 MPH	82 MPH	91.102859	71.024006	88.522703	85.9 MPH	86 MPH	5.95	84.9521
	Alignment 26-30	0.1 miles	S	0,000 ft	205.0 MPH	86 MPH	94.645849	76.077442	90.362171	90.4 MPH	86 MPH	5.58	88.1136
	Alignment 26-31	0.1 miles	C	3,000 ft	85.9 MPH	86 MPH	94.931221	75.721049	90.511722	85.9 MPH	86 MPH	5.93	85.8651
	Alignment 26-32	0.7 miles	S	0,000 ft	205.0 MPH	86 MPH	125.41262	0	125.41262	125.4 MPH	125 MPH	24.55	105.6388
	Alignment 26-33	0.6 miles	C	7,000 ft	131.2 MPH	125 MPH	152.39593	90.731083	142.17548	131.2 MPH	131 MPH	17.82	130.5854
	Alignment 26-34	0.6 miles	C	7,000 ft	131.2 MPH	131 MPH	154.2356	103.04276	143.16396	131.2 MPH	131 MPH	15.59	131.1610
	Alignment 26-35	1.6 miles	S	0,000 ft	205.0 MPH	131 MPH	188.92069	0	188.92069	188.9 MPH	189 MPH	35.86	160.0409
	Alignment 26-36	2.1 miles	S	0,000 ft	205.0 MPH	189 MPH	245.54292	105.31255	194.82855	194.8 MPH	125 MPH	47.02	162.4074
	Alignment 26-37	0.3 miles	C	7,000 ft	125.0 MPH	125 MPH	136.26917	112.60867	130.75605	125.0 MPH	125 MPH	7.31	125.0000
	Alignment 26-38	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	146.05334	99.591277	135.93487	135.9 MPH	125 MPH	13.58	130.4674
	Alignment 26-39	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.59777	101.69309	135.15457	125.0 MPH	125 MPH	13.12	125.0000
	Alignment 26-40	2.1 miles	S	0,000 ft	205.0 MPH	125 MPH	200.08743	0	148.76152	148.8 MPH	65 MPH	66.76	113.5105
	Alignment 26-41	0.3 miles	C	2,000 ft	65.0 MPH	65 MPH	88.69906	24.134554	77.757711	65.0 MPH	65 MPH	17.40	65.0000
	Alignment 26-42	0.5 miles	S	0,000 ft	205.0 MPH	65 MPH	102.32686	0	102.32686	102.3 MPH	102 MPH	23.17	83.6634
	Alignment 26-43	0.5 miles	C	7,000 ft	125.0 MPH	102 MPH	125.95893	71.245492	125.48038	125.0 MPH	125 MPH	14.67	114.1251
	Alignment 26-44	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 26-45	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 26-46	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 26-47	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 26-48	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
	Alignment 26-49	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 26-50	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 26-51	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 26-52	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 26-53	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 26-54	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 26-55	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 26 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	456 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
											(sec)	
Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)		(mph)
Alignment 26-1	0.4 miles	S	0,000 ft	311.0 MPH	0 MPH	101.70536	0	83.68887	83.7 MPH	61 MPH	32.47	48.4045
Alignment 26-2	0.3 miles	C	1,000 ft	60.5 MPH	61 MPH	98.24344	0	81.594876	60.5 MPH	61 MPH	15.03	60.5283
Alignment 26-3	0.1 miles	S	0,000 ft	311.0 MPH	61 MPH	83.923005	44.827462	73.373004	73.4 MPH	61 MPH	7.66	67.0725
Alignment 26-4	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	105.70216	0	86.304901	61.0 MPH	61 MPH	18.55	61.0256
Alignment 26-5	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	111.42414	0	108.18124	108.2 MPH	105 MPH	15.35	86.0537
Alignment 26-6	0.6 miles	C	3,000 ft	104.8 MPH	105 MPH	156.68299	0	133.30525	104.8 MPH	105 MPH	19.65	104.8381
Alignment 26-7	1.2 miles	S	0,000 ft	311.0 MPH	105 MPH	200.99187	0	181.71881	181.7 MPH	160 MPH	29.92	149.3382
Alignment 26-8	0.9 miles	C	7,000 ft	160.1 MPH	160 MPH	216.0921	123.86269	190.18612	160.1 MPH	160 MPH	19.97	160.1428
Alignment 26-9	0.8 miles	C	7,017 ft	160.3 MPH	160 MPH	211.70765	127.51503	187.78485	160.3 MPH	160 MPH	18.17	160.3311
Alignment 26-10	0.8 miles	S	0,000 ft	311.0 MPH	160 MPH	211.10972	128.35059	207.0437	207.0 MPH	203 MPH	15.46	185.4231
Alignment 26-11	0.7 miles	C	11,237 ft	202.9 MPH	203 MPH	242.58446	180.31241	223.62256	202.9 MPH	203 MPH	13.24	202.8962
Alignment 26-12	0.7 miles	C	16,000 ft	242.1 MPH	203 MPH	238.54056	182.93421	238.54056	238.5 MPH	239 MPH	10.83	220.7184
Alignment 26-13	1.2 miles	S	0,000 ft	311.0 MPH	239 MPH	290.95605	208.12603	286.51302	286.5 MPH	282 MPH	15.95	264.3952
Alignment 26-14	0.4 miles	C	70,000 ft	311.0 MPH	282 MPH	299.71299	272.91093	286.66782	286.7 MPH	273 MPH	5.57	280.9795
Alignment 26-15	2.0 miles	S	0,000 ft	311.0 MPH	273 MPH	347.85336	227.55452	294.09689	294.1 MPH	228 MPH	26.50	266.4924
Alignment 26-16	0.5 miles	C	17,017 ft	249.7 MPH	228 MPH	252.40354	215.04759	234.90801	234.9 MPH	216 MPH	7.85	227.0595
Alignment 26-17	0.8 miles	C	60,000 ft	311.0 MPH	216 MPH	254.04411	194.68636	226.45464	226.5 MPH	195 MPH	12.74	213.3466
Alignment 26-18	0.7 miles	S	0,000 ft	311.0 MPH	195 MPH	231.91825	174.0981	205.43986	205.4 MPH	175 MPH	12.42	192.7737
Alignment 26-19	0.4 miles	C	11,017 ft	200.9 MPH	175 MPH	198.206	162.43686	181.45884	181.5 MPH	163 MPH	7.57	173.7847
Alignment 26-20	0.1 miles	S	0,000 ft	311.0 MPH	163 MPH	169.65374	159.64201	164.89753	164.9 MPH	160 MPH	2.07	162.8676
Alignment 26-21	0.4 miles	C	11,000 ft	200.7 MPH	160 MPH	185.00054	146.21241	167.08411	167.1 MPH	147 MPH	8.26	158.7369
Alignment 26-22	0.9 miles	S	0,000 ft	311.0 MPH	147 MPH	208.0272	0	159.06393	159.1 MPH	86 MPH	25.99	126.6622
Alignment 26-23	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	124.65595	0	106.92627	85.6 MPH	86 MPH	14.58	85.5999
Alignment 26-24	0.8 miles	S	0,000 ft	311.0 MPH	86 MPH	160.36444	0	122.09167	122.1 MPH	64 MPH	28.74	97.2126
Alignment 26-26	0.0 miles	S	0,000 ft	311.0 MPH	64 MPH	70.664103	60.470871	65.791678	65.8 MPH	61 MPH	2.14	63.6008
Alignment 26-27	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	83.434484	45.271632	72.886855	60.5 MPH	61 MPH	8.28	60.5283
Alignment 26-28	0.4 miles	S	0,000 ft	311.0 MPH	61 MPH	110.78642	0	107.85327	107.9 MPH	105 MPH	15.30	85.5178
Alignment 26-29	0.1 miles	C	3,000 ft	104.8 MPH	105 MPH	119.65056	96.764467	112.4884	104.8 MPH	105 MPH	4.82	104.8381
Alignment 26-30	0.1 miles	S	0,000 ft	311.0 MPH	105 MPH	119.28606	96.984498	112.29467	112.3 MPH	105 MPH	4.53	108.5664
Alignment 26-31	0.1 miles	C	3,000 ft	104.8 MPH	105 MPH	119.74843	96.705186	112.54046	104.8 MPH	105 MPH	4.85	104.8381
Alignment 26-32	0.7 miles	S	0,000 ft	311.0 MPH	105 MPH	167.51402	0	163.86987	163.9 MPH	160 MPH	19.07	135.9962
Alignment 26-33	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	202.38599	134.72017	182.49083	160.1 MPH	160 MPH	14.53	160.1428
Alignment 26-34	0.6 miles	C	7,000 ft	160.1 MPH	160 MPH	197.73565	138.0591	179.92375	160.1 MPH	160 MPH	12.77	160.1428
Alignment 26-35	1.6 miles	S	0,000 ft	311.0 MPH	160 MPH	251.82422	0	238.31853	238.3 MPH	224 MPH	28.11	204.1734
Alignment 26-36	2.1 miles	S	0,000 ft	311.0 MPH	224 MPH	316.91203	0	251.07663	251.1 MPH	160 MPH	35.86	212.9355
Alignment 26-37	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	177.9347	150.66994	169.27268	160.1 MPH	160 MPH	5.71	160.1428
Alignment 26-38	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	193.1424	141.20603	177.41154	177.4 MPH	160 MPH	10.50	168.7772
Alignment 26-39	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	190.89183	142.6962	176.1894	160.1 MPH	160 MPH	10.24	160.1428
Alignment 26-40	2.1 miles	S	0,000 ft	311.0 MPH	160 MPH	274.79837	0	203.52087	203.5 MPH	86 MPH	49.02	154.5838
Alignment 26-41	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	121.52716	0	105.10994	85.6 MPH	86 MPH	13.21	85.5999
Alignment 26-42	0.5 miles	S	0,000 ft	311.0 MPH	86 MPH	141.72929	0	141.72929	141.7 MPH	142 MPH	17.06	113.6646
Alignment 26-43	0.5 miles	C	7,000 ft	160.1 MPH	142 MPH	176.37644	121.21191	168.45529	160.1 MPH	160 MPH	10.78	155.3633
Alignment 26-44	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
Alignment 26-45	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
Alignment 26-46	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
Alignment 26-47	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	182.9558	183.0 MPH	183 MPH	6.93	171.5493
Alignment 26-48	0.9 miles	C	18,017 ft	256.9 MPH	183 MPH	236.01029	150.30795	200.43684	200.4 MPH	157 MPH	18.51	182.4426
Alignment 26-49	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
Alignment 26-50	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
Alignment 26-51	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
Alignment 26-52	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
Alignment 26-53	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
Alignment 26-54	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
Alignment 26-55	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 26 - Excludes Mid-Point Station

Technology
Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg
11846 mphph	11846 mphph	911 fps	32.2 ft/s² = 1 acceleration of gravity [g]	

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 26-1	0.4 miles	S	0,000 ft	621.0 MPH	0 MPH	101.7054	0	92.49219	92.5 MPH	82 MPH	31.22	50.3450
Alignment 26-2	0.3 miles	C	1,000 ft	82.3 MPH	82 MPH	112.9324	27.88427	98.7911	82.3 MPH	82 MPH	11.06	82.2535
Alignment 26-3	0.1 miles	S	0,000 ft	621.0 MPH	82 MPH	100.7225	58.19137	92.25587	92.3 MPH	83 MPH	5.87	87.4177
Alignment 26-4	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	119.6916	0	102.9644	82.9 MPH	83 MPH	13.65	82.9293
Alignment 26-5	0.4 miles	S	0,000 ft	621.0 MPH	83 MPH	124.7737	0	124.7737	124.8 MPH	125 MPH	12.72	103.8515
Alignment 26-6	0.6 miles	C	3,000 ft	142.5 MPH	125 MPH	170.6664	44.83239	157.2004	142.5 MPH	142 MPH	14.80	139.2519
Alignment 26-7	1.2 miles	S	0,000 ft	621.0 MPH	142 MPH	222.9431	0	220.2987	220.3 MPH	218 MPH	24.47	182.6322
Alignment 26-8	0.9 miles	C	7,000 ft	217.6 MPH	218 MPH	261.5521	162.2016	240.5919	217.6 MPH	218 MPH	14.70	217.6222
Alignment 26-9	0.8 miles	C	7,017 ft	217.9 MPH	218 MPH	257.9415	167.8839	238.7518	217.9 MPH	218 MPH	13.37	217.8778
Alignment 26-10	0.8 miles	S	0,000 ft	621.0 MPH	218 MPH	257.5504	169.1446	257.5504	257.6 MPH	258 MPH	12.06	237.7145
Alignment 26-11	0.7 miles	C	11,237 ft	275.7 MPH	258 MPH	289.8492	220.5717	282.8733	275.7 MPH	276 MPH	9.93	270.6664
Alignment 26-12	0.7 miles	C	16,000 ft	329.0 MPH	276 MPH	302.9138	245.5347	302.9138	302.9 MPH	303 MPH	8.26	289.3173
Alignment 26-13	1.2 miles	S	0,000 ft	621.0 MPH	303 MPH	345.703	252.988	345.703	345.7 MPH	346 MPH	13.00	324.3084
Alignment 26-14	0.4 miles	C	70,000 ft	621.0 MPH	346 MPH	360.2977	330.4643	360.2977	360.3 MPH	360 MPH	4.44	353.0004
Alignment 26-15	2.0 miles	S	0,000 ft	621.0 MPH	360 MPH	419.8659	288.6893	370.7313	370.7 MPH	314 MPH	20.41	345.9617
Alignment 26-16	0.5 miles	C	17,017 ft	339.3 MPH	314 MPH	332.1439	294.7413	314.1214	314.1 MPH	295 MPH	5.85	304.6207
Alignment 26-17	0.8 miles	C	60,000 ft	621.0 MPH	295 MPH	323.8941	262.9498	295.0224	295.0 MPH	263 MPH	9.74	279.0224
Alignment 26-18	0.7 miles	S	0,000 ft	621.0 MPH	263 MPH	291.4276	231.1016	263.3952	263.4 MPH	232 MPH	9.66	247.8903
Alignment 26-19	0.4 miles	C	11,017 ft	273.0 MPH	232 MPH	249.9692	212.5168	232.2215	232.2 MPH	213 MPH	5.91	222.7189
Alignment 26-20	0.1 miles	S	0,000 ft	621.0 MPH	213 MPH	218.1339	207.7393	213.1272	213.1 MPH	208 MPH	1.60	210.6241
Alignment 26-21	0.4 miles	C	11,000 ft	272.8 MPH	208 MPH	227.792	186.115	208.3965	208.4 MPH	187 MPH	6.62	197.8893
Alignment 26-22	0.9 miles	S	0,000 ft	621.0 MPH	187 MPH	237.9818	115.3373	187.3053	187.3 MPH	116 MPH	21.66	151.9660
Alignment 26-23	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	147.4552	72.93494	132.8049	116.3 MPH	116 MPH	10.73	116.3240
Alignment 26-24	0.8 miles	S	0,000 ft	621.0 MPH	116 MPH	178.6636	0	140.5163	140.5 MPH	87 MPH	23.62	118.3227
Alignment 26-26	0.0 miles	S	0,000 ft	621.0 MPH	87 MPH	92.01313	81.67977	87.26983	87.3 MPH	82 MPH	1.61	84.8828
Alignment 26-27	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	100.3159	58.88967	91.73032	82.3 MPH	82 MPH	6.09	82.2535
Alignment 26-28	0.4 miles	S	0,000 ft	621.0 MPH	82 MPH	123.9983	0	123.9983	124.0 MPH	124 MPH	12.69	103.1259
Alignment 26-29	0.1 miles	C	3,000 ft	142.5 MPH	124 MPH	136.7509	109.7741	136.7509	136.8 MPH	137 MPH	3.88	130.3746
Alignment 26-30	0.1 miles	S	0,000 ft	621.0 MPH	137 MPH	148.1181	124.349	145.3201	145.3 MPH	142 MPH	3.47	141.7494
Alignment 26-31	0.1 miles	C	3,000 ft	142.5 MPH	142 MPH	153.7711	130.1854	148.2269	142.5 MPH	142 MPH	3.57	142.4672
Alignment 26-32	0.7 miles	S	0,000 ft	621.0 MPH	142 MPH	193.305	56.80643	193.305	193.3 MPH	193 MPH	15.45	167.8861
Alignment 26-33	0.6 miles	C	7,000 ft	217.6 MPH	193 MPH	229.5238	148.5007	223.6522	217.6 MPH	218 MPH	11.11	209.5316
Alignment 26-34	0.6 miles	C	7,000 ft	217.6 MPH	218 MPH	246.6031	184.1351	232.5645	217.6 MPH	218 MPH	9.39	217.6222
Alignment 26-35	1.6 miles	S	0,000 ft	621.0 MPH	218 MPH	291.769	97.92702	291.769	291.8 MPH	292 MPH	22.53	254.6956
Alignment 26-36	2.1 miles	S	0,000 ft	621.0 MPH	292 MPH	367.9489	186.7402	302.2795	302.3 MPH	218 MPH	28.92	264.0453
Alignment 26-37	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	231.0291	203.3332	224.4258	217.6 MPH	218 MPH	4.20	217.6222
Alignment 26-38	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	242.9356	188.9475	230.6264	230.6 MPH	218 MPH	7.90	224.1243
Alignment 26-39	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.1501	191.2209	229.6876	217.6 MPH	218 MPH	7.54	217.6222
Alignment 26-40	2.1 miles	S	0,000 ft	621.0 MPH	218 MPH	311.8138	0	235.3286	235.3 MPH	116 MPH	41.55	182.3862
Alignment 26-41	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	144.8198	78.03692	131.3469	116.3 MPH	116 MPH	9.72	116.3240
Alignment 26-42	0.5 miles	S	0,000 ft	621.0 MPH	116 MPH	162.1453	27.77443	162.1453	162.1 MPH	162 MPH	13.93	139.2346
Alignment 26-43	0.5 miles	C	7,000 ft	217.6 MPH	162 MPH	193.1646	123.5704	193.1646	193.2 MPH	193 MPH	9.43	177.6550
Alignment 26-44	0.5 miles	C	7,017 ft	217.9 MPH	193 MPH	223.3695	157.2615	220.6411	217.9 MPH	218 MPH	9.20	207.7911
Alignment 26-45	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
Alignment 26-46	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
Alignment 26-47	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	232.9673	233.0 MPH	231 MPH	5.26	226.0548
Alignment 26-48	0.9 miles	C	18,017 ft	349.1 MPH	231 MPH	274.9346	176.4454	231.2121	231.2 MPH	177 MPH	16.54	204.2112
Alignment 26-49	1.0 miles	S	0,000 ft	621.0 MPH	177 MPH	236.6384	81.6105	177.3062	177.3 MPH	83 MPH	28.77	130.2699
Alignment 26-50	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 26-51	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 26-52	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	96.66363	82.3 MPH	92 MPH	6.56	80.0543
Alignment 26-53	0.2 miles	S	0,000 ft	621.0 MPH	92 MPH	116.4834	57.96218	92.01192	92.0 MPH	58 MPH	10.34	75.0119
Alignment 26-54	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 26-55	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-8) Alignment 32

Alignment 32 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s² = 1 acceleration of gravity [g]
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32-1	0.2 miles	S	0,000 ft	205.0 MPH	0 MPH	53.545121	0	53.545121	53.5 MPH	54 MPH	33.24	26.7726
	Alignment 32-2	0.4 miles	C	2,250 ft	71.0 MPH	54 MPH	86.743515	0	79.263603	71.0 MPH	71 MPH	21.70	66.6405
	Alignment 32-3	0.7 miles	S	0,000 ft	205.0 MPH	71 MPH	112.7626	0	95.466764	95.5 MPH	74 MPH	28.37	83.9871
	Alignment 32-4	0.3 miles	C	2,243 ft	74.2 MPH	74 MPH	94.176913	46.427505	84.798859	74.2 MPH	74 MPH	14.04	74.2456
	Alignment 32-5	0.4 miles	S	0,000 ft	205.0 MPH	74 MPH	99.087122	34.735375	95.609251	95.6 MPH	92 MPH	15.50	86.2104
	Alignment 32-6	0.3 miles	C	3,787 ft	92.0 MPH	92 MPH	110.11385	69.30324	101.46197	92.0 MPH	92 MPH	12.35	92.0000
BECKLEY AVE.	Alignment 32-7	0.4 miles	S	0,000 ft	205.0 MPH	92 MPH	113.73079	63.19263	97.917546	97.9 MPH	79 MPH	15.42	90.0076
	Alignment 32-8	0.5 miles	C	2,794 ft	79.0 MPH	79 MPH	111.86148	0	94.935219	79.0 MPH	74 MPH	24.73	78.7163
	Alignment 32-9	0.2 miles	C	2,243 ft	74.2 MPH	74 MPH	85.19573	61.37175	79.90843	74.2 MPH	74 MPH	7.30	74.2456
	Alignment 32-10	1.5 miles	S	0,000 ft	205.0 MPH	74 MPH	153.09517	0	119.32965	119.3 MPH	71 MPH	58.00	95.9480
	Alignment 32-11	0.4 miles	C	2,243 ft	71.0 MPH	71 MPH	99.952381	9.5666858	86.693363	71.0 MPH	71 MPH	21.64	71.0000
	Alignment 32-12	1.1 miles	S	0,000 ft	205.0 MPH	71 MPH	134.8743	0	121.29938	121.3 MPH	106 MPH	40.73	100.2312
	Alignment 32-13	0.1 miles	C	5,000 ft	106.0 MPH	106 MPH	111.12602	100.61316	108.59326	106.0 MPH	106 MPH	3.26	106.0000
	Alignment 32-14	0.7 miles	S	0,000 ft	205.0 MPH	106 MPH	139.9944	53.605669	132.23924	132.2 MPH	124 MPH	21.41	121.2703
	Alignment 32-15	0.4 miles	S	0,000 ft	205.0 MPH	124 MPH	140.61043	104.78886	124.08927	124.1 MPH	105 MPH	11.91	114.5889
	Alignment 32-16	0.4 miles	C	4,923 ft	105.0 MPH	105 MPH	122.84562	83.420348	114.27171	105.0 MPH	105 MPH	12.02	105.0000
	Alignment 32-17	1.2 miles	S	0,000 ft	205.0 MPH	105 MPH	156.9585	0	141.88194	141.9 MPH	125 MPH	33.38	126.5810
	Alignment 32-18	0.2 miles	C	7,000 ft	125.0 MPH	125 MPH	132.49066	117.03087	128.7998	125.0 MPH	125 MPH	4.79	125.0000
	Alignment 32-19	0.7 miles	S	0,000 ft	205.0 MPH	125 MPH	154.17977	86.478895	132.30155	132.3 MPH	106 MPH	20.86	121.2150
	Alignment 32-20	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	121.01599	88.471074	113.75603	106.0 MPH	106 MPH	9.98	106.0000
	Alignment 32-21	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	154.85119	0	132.69305	132.7 MPH	106 MPH	33.15	119.3465
	Alignment 32-22	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	122.33608	86.636508	108.23612	106.0 MPH	92 MPH	11.50	100.7083
	Alignment 32-23	0.3 miles	S	0,000 ft	205.0 MPH	92 MPH	108.54958	71.72857	92.498682	92.5 MPH	73 MPH	12.42	82.9862
	Alignment 32-24	0.2 miles	C	2,400 ft	73.0 MPH	73 MPH	85.645469	57.644199	79.574325	73.0 MPH	73 MPH	8.53	73.0000
	Alignment 32-25	1.0 miles	S	0,000 ft	205.0 MPH	73 MPH	130.99873	0	124.19676	124.2 MPH	117 MPH	36.25	101.3098
	Alignment 32-26	0.4 miles	C	7,000 ft	125.0 MPH	117 MPH	136.89545	92.938882	117.02428	117.0 MPH	93 MPH	14.93	105.0243
	Alignment 32-27	0.5 miles	S	0,000 ft	205.0 MPH	93 MPH	118.72339	56.592909	93.124225	93.1 MPH	57 MPH	22.51	75.1238
	Alignment 32-28	0.1 miles	C	5,697 ft	113.0 MPH	57 MPH	67.952601	43.364087	57.243148	57.2 MPH	44 MPH	8.37	50.7388
	Alignment 32-29	0.2 miles	S	0,000 ft	205.0 MPH	44 MPH	62.230614	0	44.003689	44.0 MPH	0 MPH	27.32	22.0037
	Alignment 32-30-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 32-31	0.5 miles	S	0,000 ft	205.0 MPH	0 MPH	79.006747	0	79.006747	79.0 MPH	79 MPH	49.05	39.5034
	Alignment 32-32	0.2 miles	C	3,795 ft	92.0 MPH	79 MPH	89.4712	66.925603	89.4712	89.5 MPH	89 MPH	6.50	84.2390
	Alignment 32-33	0.1 miles	S	0,000 ft	205.0 MPH	89 MPH	98.131674	79.877194	98.131674	98.1 MPH	98 MPH	5.38	93.8014
	Alignment 32-34	0.0 miles	C	7,000 ft	125.0 MPH	98 MPH	100.83832	95.348222	100.83832	100.8 MPH	101 MPH	1.68	99.4850
	Alignment 32-35	0.1 miles	S	0,000 ft	205.0 MPH	101 MPH	108.02765	93.095439	107.01863	107.0 MPH	106 MPH	4.47	104.2937
	Alignment 32-36	0.2 miles	C	5,000 ft	106.0 MPH	106 MPH	118.37636	91.973026	112.35872	106.0 MPH	106 MPH	8.13	106.0000
	Alignment 32-37	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	155.97253	0	141.33724	141.3 MPH	125 MPH	32.08	126.6721
	Alignment 32-38	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.51874	100.37079	135.6479	125.0 MPH	125 MPH	13.78	125.0000
	Alignment 32-39	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.26886	50.971089	133.93459	133.9 MPH	85 MPH	35.93	112.5552
	Alignment 32-40	0.2 miles	C	3,221 ft	85.0 MPH	85 MPH	97.034569	70.952748	91.215973	85.0 MPH	85 MPH	8.00	85.0000
	Alignment 32-41	0.6 miles	C	6,304 ft	119.0 MPH	85 MPH	118.7069	18.938665	118.7069	118.7 MPH	119 MPH	20.93	101.8534
	Alignment 32-42	2.2 miles	S	0,000 ft	205.0 MPH	119 MPH	199.26456	0	166.33004	166.3 MPH	125 MPH	55.23	143.9804
	Alignment 32-43	0.3 miles	C	7,000 ft	125.0 MPH	125 MPH	136.26917	112.60867	130.75605	125.0 MPH	125 MPH	7.31	125.0000
	Alignment 32-44	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	146.05334	99.591277	135.93487	135.9 MPH	125 MPH	13.58	130.4674
	Alignment 32-45	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.59777	101.69309	135.15457	125.0 MPH	125 MPH	13.12	125.0000
	Alignment 32-46	2.1 miles	S	0,000 ft	205.0 MPH	125 MPH	200.08743	0	148.76152	148.8 MPH	65 MPH	66.76	113.5105
	Alignment 32-47	0.3 miles	C	2,000 ft	65.0 MPH	65 MPH	88.69906	24.134554	77.757711	65.0 MPH	65 MPH	17.40	65.0000
	Alignment 32-48	0.5 miles	S	0,000 ft	205.0 MPH	65 MPH	102.32686	0	102.32686	102.3 MPH	102 MPH	23.17	83.6634
	Alignment 32-49	0.5 miles	C	7,000 ft	125.0 MPH	102 MPH	125.95893	71.245492	125.48038	125.0 MPH	125 MPH	14.67	114.1251
	Alignment 32-50	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 32-51	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 32-52	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 32-53	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 32-54a	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
	Alignment 32-54b	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 32-55	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 32-56	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 32-57	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 32-58	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 32-59	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 32-60	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 32 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32-1	0.2 miles	S	0,000 ft	311.0 MPH	0 MPH	76.533051	0	76.533051	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 32-2	0.4 miles	C	2,250 ft	90.8 MPH	77 MPH	123.98414	0	108.66309	90.8 MPH	91 MPH	16.26	88.8928
	Alignment 32-3	0.7 miles	S	0,000 ft	311.0 MPH	91 MPH	154.66644	0	126.76618	126.8 MPH	91 MPH	21.91	108.7439
	Alignment 32-4	0.3 miles	C	2,243 ft	90.7 MPH	91 MPH	122.78268	69.718954	107.91943	90.7 MPH	91 MPH	11.50	90.6511
	Alignment 32-5	0.4 miles	S	0,000 ft	311.0 MPH	91 MPH	130.4388	0	124.27513	124.3 MPH	118 MPH	12.19	109.6572
	Alignment 32-6	0.3 miles	C	3,787 ft	117.8 MPH	118 MPH	146.12908	101.06074	132.71782	117.8 MPH	118 MPH	9.65	117.7894
BECKLEY AVE.	Alignment 32-7	0.4 miles	S	0,000 ft	311.0 MPH	118 MPH	151.68304	96.972382	128.92643	128.9 MPH	101 MPH	11.82	117.4296
	Alignment 32-8	0.5 miles	C	2,794 ft	101.2 MPH	101 MPH	151.82122	0	125.0346	101.2 MPH	91 MPH	19.41	100.3077
	Alignment 32-9	0.2 miles	C	2,243 ft	90.7 MPH	91 MPH	108.55613	80.446945	100.00514	90.7 MPH	91 MPH	5.98	90.6511
	Alignment 32-10	1.5 miles	S	0,000 ft	311.0 MPH	91 MPH	211.75229	0	162.87519	162.9 MPH	91 MPH	43.90	126.7631
	Alignment 32-11	0.4 miles	C	2,243 ft	90.7 MPH	91 MPH	135.38527	0	115.21022	90.7 MPH	91 MPH	16.95	90.6511
	Alignment 32-12	1.1 miles	S	0,000 ft	311.0 MPH	91 MPH	187.3035	0	163.40284	163.4 MPH	135 MPH	30.64	133.2467
	Alignment 32-13	0.1 miles	C	5,000 ft	135.3 MPH	135 MPH	143.49969	131.16928	139.48214	135.3 MPH	135 MPH	2.55	135.3454
	Alignment 32-14	0.7 miles	S	0,000 ft	311.0 MPH	135 MPH	188.15531	99.779451	169.71067	169.7 MPH	149 MPH	16.74	155.0954
	Alignment 32-15	0.4 miles	S	0,000 ft	311.0 MPH	149 MPH	176.57966	133.43802	156.8704	156.9 MPH	134 MPH	9.25	147.4852
	Alignment 32-16	0.4 miles	C	4,923 ft	134.3 MPH	134 MPH	162.30529	118.1957	148.96186	134.3 MPH	134 MPH	9.40	134.2992
	Alignment 32-17	1.2 miles	S	0,000 ft	311.0 MPH	134 MPH	214.10939	0	189.06157	189.1 MPH	160 MPH	25.43	166.1459
	Alignment 32-18	0.2 miles	C	7,000 ft	160.1 MPH	160 MPH	172.00615	154.00307	166.18037	160.1 MPH	160 MPH	3.74	160.1428
	Alignment 32-19	0.7 miles	S	0,000 ft	311.0 MPH	160 MPH	205.64151	132.28499	174.07872	174.1 MPH	135 MPH	16.01	157.9927
	Alignment 32-20	0.3 miles	C	5,000 ft	135.3 MPH	135 MPH	159.00481	122.10447	147.64975	135.3 MPH	135 MPH	7.82	135.3454
	Alignment 32-21	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	210.59794	0	173.17115	173.2 MPH	125 MPH	26.13	151.3608
	Alignment 32-22	0.3 miles	C	5,000 ft	135.3 MPH	125 MPH	152.46458	109.06367	132.9388	132.9 MPH	110 MPH	9.38	123.3977
	Alignment 32-23	0.3 miles	S	0,000 ft	311.0 MPH	110 MPH	137.40664	93.706925	117.62951	117.6 MPH	94 MPH	9.57	107.6660
	Alignment 32-24	0.2 miles	C	2,400 ft	93.8 MPH	94 MPH	113.53977	82.381259	104.12516	93.8 MPH	94 MPH	6.64	93.7700
	Alignment 32-25	1.0 miles	S	0,000 ft	311.0 MPH	94 MPH	181.56088	0	156.26956	156.3 MPH	126 MPH	28.19	130.2779
	Alignment 32-26	0.4 miles	C	7,000 ft	160.1 MPH	126 MPH	161.85085	104.04151	136.41975	136.4 MPH	105 MPH	12.72	123.3248
	Alignment 32-27	0.5 miles	S	0,000 ft	311.0 MPH	105 MPH	148.83351	0	116.90897	116.9 MPH	72 MPH	17.27	97.9129
	Alignment 32-28	0.1 miles	C	5,697 ft	144.5 MPH	72 MPH	89.330256	61.769281	76.889189	76.9 MPH	62 MPH	6.01	70.6806
	Alignment 32-29	0.2 miles	S	0,000 ft	311.0 MPH	62 MPH	88.320339	0	62.451911	62.5 MPH	0 MPH	19.12	31.4487
	Alignment 32-30-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 32-31	0.5 miles	S	0,000 ft	311.0 MPH	0 MPH	112.92583	0	112.92583	112.9 MPH	113 MPH	34.32	56.4629
	Alignment 32-32	0.2 miles	C	3,795 ft	117.9 MPH	113 MPH	127.88287	104.82945	122.99934	117.9 MPH	118 MPH	4.67	117.1048
	Alignment 32-33	0.1 miles	S	0,000 ft	311.0 MPH	118 MPH	131.23601	110.81026	131.23601	131.2 MPH	131 MPH	4.05	124.5749
	Alignment 32-34	0.0 miles	C	7,000 ft	160.1 MPH	131 MPH	135.36286	129.1679	135.36286	135.4 MPH	135 MPH	1.25	133.2994
	Alignment 32-35	0.1 miles	S	0,000 ft	311.0 MPH	135 MPH	146.25599	129.69772	140.90633	140.9 MPH	135 MPH	3.37	138.1302
	Alignment 32-36	0.2 miles	C	5,000 ft	135.3 MPH	135 MPH	154.89213	124.66519	145.44749	135.3 MPH	135 MPH	6.37	135.3454
	Alignment 32-37	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	212.28175	0	188.02827	188.0 MPH	160 MPH	24.48	165.9781
	Alignment 32-38	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	192.31626	141.75689	176.96223	160.1 MPH	160 MPH	10.76	160.1428
	Alignment 32-39	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	228.60261	0	178.96906	179.0 MPH	109 MPH	27.10	149.2382
	Alignment 32-40	0.2 miles	C	3,221 ft	108.6 MPH	109 MPH	127.57823	98.030542	118.48397	108.6 MPH	109 MPH	6.26	108.6310
	Alignment 32-41	0.6 miles	C	6,304 ft	152.0 MPH	109 MPH	160.71177	0	156.40345	152.0 MPH	152 MPH	15.90	134.0248
	Alignment 32-42	2.2 miles	S	0,000 ft	311.0 MPH	152 MPH	274.63814	0	224.80194	224.8 MPH	160 MPH	41.78	190.3086
	Alignment 32-43	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	177.9347	150.66994	169.27268	160.1 MPH	160 MPH	5.71	160.1428
	Alignment 32-44	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	193.1424	141.20603	177.41154	177.4 MPH	160 MPH	10.50	168.7772
	Alignment 32-45	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	190.89183	142.6962	176.1894	160.1 MPH	160 MPH	10.24	160.1428
	Alignment 32-46	2.1 miles	S	0,000 ft	311.0 MPH	160 MPH	274.79837	0	203.52087	203.5 MPH	86 MPH	49.02	154.5838
	Alignment 32-47	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	121.52716	0	105.10994	85.6 MPH	86 MPH	13.21	85.5999
	Alignment 32-48	0.5 miles	S	0,000 ft	311.0 MPH	86 MPH	141.72929	0	141.72929	141.7 MPH	142 MPH	17.06	113.6646
	Alignment 32-49	0.5 miles	C	7,000 ft	160.1 MPH	142 MPH	176.37644	121.21191	168.45529	160.1 MPH	160 MPH	10.78	155.3633
	Alignment 32-50	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
	Alignment 32-51	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 32-52	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 32-53	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	182.9558	183.0 MPH	183 MPH	6.93	171.5493
	Alignment 32-54a	0.9 miles	C	18,017 ft	256.9 MPH	183 MPH	236.01029	150.30795	200.43684	200.4 MPH	157 MPH	18.51	182.4426
	Alignment 32-54b	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
	Alignment 32-55	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 32-56	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 32-57	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 32-58	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 32-59	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 32-60	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 32 - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (I)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32-1	0.2 miles	S	0,000 ft	621.0 MPH	0 MPH	76.53305	0	76.53305	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 32-2	0.4 miles	C	2,250 ft	123.4 MPH	77 MPH	123.9841	0	123.6825	123.4 MPH	123 MPH	14.42	100.2555
	Alignment 32-3	0.7 miles	S	0,000 ft	621.0 MPH	123 MPH	175.7871	0	151.7834	151.8 MPH	123 MPH	17.32	137.5336
	Alignment 32-4	0.3 miles	C	2,243 ft	123.2 MPH	123 MPH	148.4361	91.19949	136.3976	123.2 MPH	123 MPH	8.46	123.1881
	Alignment 32-5	0.4 miles	S	0,000 ft	621.0 MPH	123 MPH	154.8288	79.86647	154.8288	154.8 MPH	155 MPH	9.62	139.0085
	Alignment 32-6	0.3 miles	C	3,787 ft	160.1 MPH	155 MPH	177.3453	128.4235	168.9272	160.1 MPH	160 MPH	7.13	159.4819
BECKLEY AVE.	Alignment 32-7	0.4 miles	S	0,000 ft	621.0 MPH	160 MPH	186.4265	128.4058	163.7957	163.8 MPH	137 MPH	9.13	152.0437
	Alignment 32-8	0.5 miles	C	2,794 ft	137.5 MPH	137 MPH	178.0914	78.03716	153.1206	137.5 MPH	123 MPH	14.39	135.3289
	Alignment 32-9	0.2 miles	C	2,243 ft	123.2 MPH	123 MPH	136.9019	107.7427	130.2256	123.2 MPH	123 MPH	4.40	123.1881
	Alignment 32-10	1.5 miles	S	0,000 ft	621.0 MPH	123 MPH	227.5889	0	182.9918	183.0 MPH	123 MPH	36.35	153.0900
	Alignment 32-11	0.4 miles	C	2,243 ft	123.2 MPH	123 MPH	159.0184	71.16012	142.236	123.2 MPH	123 MPH	12.47	123.1881
	Alignment 32-12	1.1 miles	S	0,000 ft	621.0 MPH	123 MPH	205.0373	0	194.7671	194.8 MPH	184 MPH	25.05	162.9726
	Alignment 32-13	0.1 miles	C	5,000 ft	183.9 MPH	184 MPH	190.0051	177.6355	186.9894	183.9 MPH	184 MPH	1.88	183.9243
	Alignment 32-14	0.7 miles	S	0,000 ft	621.0 MPH	184 MPH	225.6373	129.399	215.5658	215.6 MPH	205 MPH	12.83	202.3830
	Alignment 32-15	0.4 miles	S	0,000 ft	621.0 MPH	205 MPH	225.8415	181.7846	205.3188	205.3 MPH	183 MPH	7.03	194.0657
	Alignment 32-16	0.4 miles	C	4,923 ft	182.5 MPH	183 MPH	203.995	158.1154	193.5473	182.5 MPH	183 MPH	6.92	182.5026
	Alignment 32-17	1.2 miles	S	0,000 ft	621.0 MPH	183 MPH	247.212	74.16631	232.8875	232.9 MPH	218 MPH	19.95	211.7782
	Alignment 32-18	0.2 miles	C	7,000 ft	217.6 MPH	218 MPH	226.4946	208.3723	222.1027	217.6 MPH	218 MPH	2.75	217.6222
	Alignment 32-19	0.7 miles	S	0,000 ft	621.0 MPH	218 MPH	252.9864	175.2618	221.1677	221.2 MPH	184 MPH	12.40	204.0106
	Alignment 32-20	0.3 miles	C	5,000 ft	183.9 MPH	184 MPH	201.9711	163.9024	193.1586	183.9 MPH	184 MPH	5.75	183.9243
	Alignment 32-21	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	244.6656	88.28951	212.2938	212.3 MPH	174 MPH	20.26	195.2586
	Alignment 32-22	0.3 miles	C	5,000 ft	183.9 MPH	174 MPH	194.6701	150.5176	174.2089	174.2 MPH	151 MPH	7.12	162.7070
	Alignment 32-23	0.3 miles	S	0,000 ft	621.0 MPH	151 MPH	171.993	126.5718	151.359	151.4 MPH	127 MPH	7.38	139.5670
	Alignment 32-24	0.2 miles	C	2,400 ft	127.4 MPH	127 MPH	142.6043	110.1774	135.2285	127.4 MPH	127 MPH	4.89	127.4265
	Alignment 32-25	1.0 miles	S	0,000 ft	621.0 MPH	127 MPH	201.02	0	184.3435	184.3 MPH	166 MPH	22.87	160.5858
	Alignment 32-26	0.4 miles	C	7,000 ft	217.6 MPH	166 MPH	194.6168	131.2871	166.2824	166.3 MPH	132 MPH	10.50	149.2801
	Alignment 32-27	0.5 miles	S	0,000 ft	621.0 MPH	132 MPH	168.9687	79.35733	132.498	132.5 MPH	81 MPH	15.80	106.9932
	Alignment 32-28	0.1 miles	C	5,697 ft	196.3 MPH	81 MPH	96.73104	61.36045	81.24314	81.2 MPH	62 MPH	5.92	71.7401
	Alignment 32-29	0.2 miles	S	0,000 ft	621.0 MPH	62 MPH	88.32034	0	62.45191	62.5 MPH	0 MPH	19.12	31.4487
	Alignment 32-30-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 32-31	0.5 miles	S	0,000 ft	621.0 MPH	0 MPH	112.9258	0	112.9258	112.9 MPH	113 MPH	34.32	56.4629
	Alignment 32-32	0.2 miles	C	3,795 ft	160.2 MPH	113 MPH	127.8829	95.65803	127.8829	127.9 MPH	128 MPH	4.55	120.4044
	Alignment 32-33	0.1 miles	S	0,000 ft	621.0 MPH	128 MPH	140.2615	114.17	140.2615	140.3 MPH	140 MPH	3.76	134.0722
	Alignment 32-34	0.0 miles	C	7,000 ft	217.6 MPH	140 MPH	144.1301	136.283	144.1301	144.1 MPH	144 MPH	1.18	142.1958
	Alignment 32-35	0.1 miles	S	0,000 ft	621.0 MPH	144 MPH	154.406	133.0631	154.406	154.4 MPH	154 MPH	3.12	149.2680
	Alignment 32-36	0.2 miles	C	5,000 ft	183.9 MPH	154 MPH	171.7976	134.7887	171.7976	171.8 MPH	172 MPH	5.29	163.1018
	Alignment 32-37	1.1 miles	S	0,000 ft	621.0 MPH	172 MPH	237.191	52.6235	227.617	227.6 MPH	218 MPH	20.00	203.1868
	Alignment 32-38	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	242.2793	189.7883	230.281	217.6 MPH	218 MPH	7.92	217.6222
	Alignment 32-39	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	271.9795	144.0347	218.8207	218.8 MPH	148 MPH	22.00	183.8005
	Alignment 32-40	0.2 miles	C	3,221 ft	147.6 MPH	148 MPH	162.0729	131.5925	155.0157	147.6 MPH	148 MPH	4.61	147.6215
	Alignment 32-41	0.6 miles	C	6,304 ft	206.5 MPH	148 MPH	189.2609	88.11652	189.2609	189.3 MPH	189 MPH	12.65	168.4412
	Alignment 32-42	2.2 miles	S	0,000 ft	621.0 MPH	189 MPH	296.9006	0	260.2973	260.3 MPH	218 MPH	34.56	230.1010
	Alignment 32-43	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	231.0291	203.3332	224.4258	217.6 MPH	218 MPH	4.20	217.6222
	Alignment 32-44	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	242.9356	188.9475	230.6264	230.6 MPH	218 MPH	7.90	224.1243
	Alignment 32-45	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.1501	191.2209	229.6876	217.6 MPH	218 MPH	7.54	217.6222
	Alignment 32-46	2.1 miles	S	0,000 ft	621.0 MPH	218 MPH	311.8138	0	235.3286	235.3 MPH	116 MPH	41.55	182.3862
	Alignment 32-47	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	144.8198	78.03692	131.3469	116.3 MPH	116 MPH	9.72	116.3240
	Alignment 32-48	0.5 miles	S	0,000 ft	621.0 MPH	116 MPH	162.1453	27.77443	162.1453	162.1 MPH	162 MPH	13.93	139.2346
	Alignment 32-49	0.5 miles	C	7,000 ft	217.6 MPH	162 MPH	193.1646	123.5704	193.1646	193.2 MPH	193 MPH	9.43	177.6550
	Alignment 32-50	0.5 miles	C	7,017 ft	217.9 MPH	193 MPH	223.3695	157.2615	220.6411	217.9 MPH	218 MPH	9.20	207.7911
	Alignment 32-51	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
	Alignment 32-52	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
	Alignment 32-53	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	232.9673	233.0 MPH	231 MPH	5.26	226.0548
	Alignment 32-54a	0.9 miles	C	18,017 ft	349.1 MPH	231 MPH	274.9346	176.4454	231.2121	231.2 MPH	177 MPH	16.54	204.2112
	Alignment 32-54b	1.0 miles	S	0,000 ft	621.0 MPH	177 MPH	236.6384	81.6105	177.3062	177.3 MPH	83 MPH	28.77	130.2699
	Alignment 32-55	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 32-56	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
	Alignment 32-57	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 32-58	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
	Alignment 32-59	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
	Alignment 32-60	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 32 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s² = 1 acceleration of gravity [g]
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32-1	0.2 miles	S	0,000 ft	205.0 MPH	0 MPH	53.545121	0	53.545121	53.5 MPH	54 MPH	33.24	26.7726
	Alignment 32-2	0.4 miles	C	2,250 ft	71.0 MPH	54 MPH	86.743515	0	79.263603	71.0 MPH	71 MPH	21.70	66.6405
	Alignment 32-3	0.7 miles	S	0,000 ft	205.0 MPH	71 MPH	112.7626	0	95.466764	95.5 MPH	74 MPH	28.37	83.9871
	Alignment 32-4	0.3 miles	C	2,243 ft	74.2 MPH	74 MPH	94.176913	46.427505	84.798859	74.2 MPH	74 MPH	14.04	74.2456
	Alignment 32-5	0.4 miles	S	0,000 ft	205.0 MPH	74 MPH	99.087122	34.735375	95.609251	95.6 MPH	92 MPH	15.50	86.2104
	Alignment 32-6	0.3 miles	C	3,787 ft	92.0 MPH	92 MPH	110.11385	69.30324	101.46197	92.0 MPH	92 MPH	12.35	92.0000
BECKLEY AVE.	Alignment 32-7	0.4 miles	S	0,000 ft	205.0 MPH	92 MPH	113.73079	63.19263	97.917546	97.9 MPH	79 MPH	15.42	90.0076
	Alignment 32-8	0.5 miles	C	2,794 ft	79.0 MPH	79 MPH	111.86148	0	94.935219	79.0 MPH	74 MPH	24.73	78.7163
	Alignment 32-9	0.2 miles	C	2,243 ft	74.2 MPH	74 MPH	85.19573	61.37175	79.90843	74.2 MPH	74 MPH	7.30	74.2456
	Alignment 32-10	1.5 miles	S	0,000 ft	205.0 MPH	74 MPH	153.09517	0	119.32965	119.3 MPH	71 MPH	58.00	95.9480
	Alignment 32-11	0.4 miles	C	2,243 ft	71.0 MPH	71 MPH	99.952381	9.5666858	86.693363	71.0 MPH	71 MPH	21.64	71.0000
	Alignment 32-12	1.1 miles	S	0,000 ft	205.0 MPH	71 MPH	134.8743	0	121.29938	121.3 MPH	106 MPH	40.73	100.2312
	Alignment 32-13	0.1 miles	C	5,000 ft	106.0 MPH	106 MPH	111.12602	100.61316	108.59326	106.0 MPH	106 MPH	3.26	106.0000
	Alignment 32-14	0.7 miles	S	0,000 ft	205.0 MPH	106 MPH	139.9944	53.605669	132.23924	132.2 MPH	124 MPH	21.41	121.2703
	Alignment 32-15	0.4 miles	S	0,000 ft	205.0 MPH	124 MPH	140.61043	104.78886	124.08927	124.1 MPH	105 MPH	11.91	114.5889
	Alignment 32-16	0.4 miles	C	4,923 ft	105.0 MPH	105 MPH	122.84562	83.420348	114.27171	105.0 MPH	105 MPH	12.02	105.0000
	Alignment 32-17	1.2 miles	S	0,000 ft	205.0 MPH	105 MPH	156.9585	0	141.88194	141.9 MPH	125 MPH	33.38	126.5810
	Alignment 32-18	0.2 miles	C	7,000 ft	125.0 MPH	125 MPH	132.49066	117.03087	128.7998	125.0 MPH	125 MPH	4.79	125.0000
	Alignment 32-19	0.7 miles	S	0,000 ft	205.0 MPH	125 MPH	154.17977	86.478895	132.30155	132.3 MPH	106 MPH	20.86	121.2150
	Alignment 32-20	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	121.01599	88.471074	113.75603	106.0 MPH	106 MPH	9.98	106.0000
	Alignment 32-21	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	154.85119	0	132.69305	132.7 MPH	106 MPH	33.15	119.3465
	Alignment 32-22	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	122.33608	86.636508	108.23612	106.0 MPH	92 MPH	11.50	100.7083
	Alignment 32-23	0.3 miles	S	0,000 ft	205.0 MPH	92 MPH	108.54958	71.72857	92.498682	92.5 MPH	73 MPH	12.42	82.9862
	Alignment 32-24	0.2 miles	C	2,400 ft	73.0 MPH	73 MPH	85.645469	57.644199	79.574325	73.0 MPH	73 MPH	8.53	73.0000
	Alignment 32-25	1.0 miles	S	0,000 ft	205.0 MPH	73 MPH	130.99873	0	128.0345	128.0 MPH	125 MPH	36.05	101.8759
	Alignment 32-26	0.4 miles	C	7,000 ft	125.0 MPH	125 MPH	143.79278	102.82819	134.72447	125.0 MPH	125 MPH	12.54	125.0000
	Alignment 32-27	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	145.15937	100.88983	130.07737	130.1 MPH	113 MPH	13.75	122.9137
	Alignment 32-28	0.1 miles	C	5,697 ft	113.0 MPH	113 MPH	118.90145	106.77286	115.98827	113.0 MPH	113 MPH	3.76	113.0000
	Alignment 32-29	0.2 miles	S	0,000 ft	205.0 MPH	113 MPH	121.26685	104.07858	121.1335	121.1 MPH	121 MPH	5.13	117.1313
	Alignment 32-31	0.5 miles	S	0,000 ft	205.0 MPH	121 MPH	144.50974	91.645698	121.13436	121.1 MPH	92 MPH	18.17	106.6337
	Alignment 32-32	0.2 miles	C	3,795 ft	92.0 MPH	92 MPH	101.12878	81.859455	96.672203	92.0 MPH	92 MPH	5.95	92.0000
	Alignment 32-33	0.1 miles	S	0,000 ft	205.0 MPH	92 MPH	100.44267	82.699881	100.44267	100.4 MPH	100 MPH	5.24	96.2213
	Alignment 32-34	0.0 miles	C	7,000 ft	125.0 MPH	100 MPH	103.08866	97.725062	103.08866	103.1 MPH	103 MPH	1.64	101.7657
	Alignment 32-35	0.1 miles	S	0,000 ft	205.0 MPH	103 MPH	110.13119	95.528347	108.08533	108.1 MPH	106 MPH	4.40	106.0156
	Alignment 32-36	0.2 miles	C	5,000 ft	106.0 MPH	106 MPH	118.37636	91.973026	112.35872	106.0 MPH	106 MPH	8.13	106.0000
	Alignment 32-37	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	155.97253	0	141.33724	141.3 MPH	125 MPH	32.08	126.6721
	Alignment 32-38	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.51874	100.37079	135.6479	125.0 MPH	125 MPH	13.78	125.0000
	Alignment 32-39	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.26886	50.971089	133.93459	133.9 MPH	85 MPH	35.93	112.5552
	Alignment 32-40	0.2 miles	C	3,221 ft	85.0 MPH	85 MPH	97.034569	70.952748	91.215973	85.0 MPH	85 MPH	8.00	85.0000
	Alignment 32-41	0.6 miles	C	6,304 ft	119.0 MPH	85 MPH	118.7069	18.938665	118.7069	118.7 MPH	119 MPH	20.93	101.8534
	Alignment 32-42	2.2 miles	S	0,000 ft	205.0 MPH	119 MPH	199.26456	0	166.33004	166.3 MPH	125 MPH	55.23	143.9804
	Alignment 32-43	0.3 miles	C	7,000 ft	125.0 MPH	125 MPH	136.26917	112.60867	130.75605	125.0 MPH	125 MPH	7.31	125.0000
	Alignment 32-44	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	146.05334	99.591277	135.93487	135.9 MPH	125 MPH	13.58	130.4674
	Alignment 32-45	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.59777	101.69309	135.15457	125.0 MPH	125 MPH	13.12	125.0000
	Alignment 32-46	2.1 miles	S	0,000 ft	205.0 MPH	125 MPH	200.08743	0	148.76152	148.8 MPH	65 MPH	66.76	113.5105
	Alignment 32-47	0.3 miles	C	2,000 ft	65.0 MPH	65 MPH	88.69906	24.134554	77.757711	65.0 MPH	65 MPH	17.40	65.0000
	Alignment 32-48	0.5 miles	S	0,000 ft	205.0 MPH	65 MPH	102.32686	0	102.32686	102.3 MPH	102 MPH	23.17	83.6634
	Alignment 32-49	0.5 miles	C	7,000 ft	125.0 MPH	102 MPH	125.95893	71.245492	125.48038	125.0 MPH	125 MPH	14.67	114.1251
	Alignment 32-50	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 32-51	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 32-52	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 32-53	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 32-54a	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
	Alignment 32-54b	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 32-55	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 32-56	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 32-57	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 32-58	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 32-59	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 32-60	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 32 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32-1	0.2 miles	S	0,000 ft	311.0 MPH	0 MPH	76.533051	0	76.533051	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 32-2	0.4 miles	C	2,250 ft	90.8 MPH	77 MPH	123.98414	0	108.66309	90.8 MPH	91 MPH	16.26	88.8928
	Alignment 32-3	0.7 miles	S	0,000 ft	311.0 MPH	91 MPH	154.66644	0	126.76618	126.8 MPH	91 MPH	21.91	108.7439
	Alignment 32-4	0.3 miles	C	2,243 ft	90.7 MPH	91 MPH	122.78268	69.718954	107.91943	90.7 MPH	91 MPH	11.50	90.6511
	Alignment 32-5	0.4 miles	S	0,000 ft	311.0 MPH	91 MPH	130.4388	0	124.27513	124.3 MPH	118 MPH	12.19	109.6572
	Alignment 32-6	0.3 miles	C	3,787 ft	117.8 MPH	118 MPH	146.12908	101.06074	132.71782	117.8 MPH	118 MPH	9.65	117.7894
BECKLEY AVE.	Alignment 32-7	0.4 miles	S	0,000 ft	311.0 MPH	118 MPH	151.68304	96.972382	128.92643	128.9 MPH	101 MPH	11.82	117.4296
	Alignment 32-8	0.5 miles	C	2,794 ft	101.2 MPH	101 MPH	151.82122	0	125.0346	101.2 MPH	91 MPH	19.41	100.3077
	Alignment 32-9	0.2 miles	C	2,243 ft	90.7 MPH	91 MPH	108.55613	80.446945	100.00514	90.7 MPH	91 MPH	5.98	90.6511
	Alignment 32-10	1.5 miles	S	0,000 ft	311.0 MPH	91 MPH	211.75229	0	162.87519	162.9 MPH	91 MPH	43.90	126.7631
	Alignment 32-11	0.4 miles	C	2,243 ft	90.7 MPH	91 MPH	135.38527	0	115.21022	90.7 MPH	91 MPH	16.95	90.6511
	Alignment 32-12	1.1 miles	S	0,000 ft	311.0 MPH	91 MPH	187.3035	0	163.40284	163.4 MPH	135 MPH	30.64	133.2467
	Alignment 32-13	0.1 miles	C	5,000 ft	135.3 MPH	135 MPH	143.49969	131.16928	139.48214	135.3 MPH	135 MPH	2.55	135.3454
	Alignment 32-14	0.7 miles	S	0,000 ft	311.0 MPH	135 MPH	188.15531	99.779451	169.71067	169.7 MPH	149 MPH	16.74	155.0954
	Alignment 32-15	0.4 miles	S	0,000 ft	311.0 MPH	149 MPH	176.57966	133.43802	156.8704	156.9 MPH	134 MPH	9.25	147.4852
	Alignment 32-16	0.4 miles	C	4,923 ft	134.3 MPH	134 MPH	162.30529	118.1957	148.96186	134.3 MPH	134 MPH	9.40	134.2992
	Alignment 32-17	1.2 miles	S	0,000 ft	311.0 MPH	134 MPH	214.10939	0	189.06157	189.1 MPH	160 MPH	25.43	166.1459
	Alignment 32-18	0.2 miles	C	7,000 ft	160.1 MPH	160 MPH	172.00615	154.00307	166.18037	160.1 MPH	160 MPH	3.74	160.1428
	Alignment 32-19	0.7 miles	S	0,000 ft	311.0 MPH	160 MPH	205.64151	132.28499	174.07872	174.1 MPH	135 MPH	16.01	157.9927
	Alignment 32-20	0.3 miles	C	5,000 ft	135.3 MPH	135 MPH	159.00481	122.10447	147.64975	135.3 MPH	135 MPH	7.82	135.3454
	Alignment 32-21	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	210.59794	0	173.17115	173.2 MPH	125 MPH	26.13	151.3608
	Alignment 32-22	0.3 miles	C	5,000 ft	135.3 MPH	125 MPH	152.46458	109.06367	132.9388	132.9 MPH	110 MPH	9.38	123.3977
	Alignment 32-23	0.3 miles	S	0,000 ft	311.0 MPH	110 MPH	137.40664	93.706925	117.62951	117.6 MPH	94 MPH	9.57	107.6660
	Alignment 32-24	0.2 miles	C	2,400 ft	93.8 MPH	94 MPH	113.53977	82.381259	104.12516	93.8 MPH	94 MPH	6.64	93.7700
	Alignment 32-25	1.0 miles	S	0,000 ft	311.0 MPH	94 MPH	181.56088	0	171.18714	171.2 MPH	160 MPH	26.88	136.6219
	Alignment 32-26	0.4 miles	C	7,000 ft	160.1 MPH	160 MPH	189.6455	143.50734	175.51515	160.1 MPH	160 MPH	9.79	160.1428
	Alignment 32-27	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	191.76062	142.12486	169.77056	169.8 MPH	144 MPH	10.61	159.2809
	Alignment 32-28	0.1 miles	C	5,697 ft	144.5 MPH	144 MPH	153.84358	139.65456	149.23103	144.5 MPH	144 MPH	2.94	144.4713
	Alignment 32-29	0.2 miles	S	0,000 ft	311.0 MPH	144 MPH	157.57041	137.60561	149.51494	149.5 MPH	141 MPH	4.12	145.9031
	Alignment 32-31	0.5 miles	S	0,000 ft	311.0 MPH	141 MPH	180.64674	116.78585	152.53997	152.5 MPH	118 MPH	14.03	138.1122
	Alignment 32-32	0.2 miles	C	3,795 ft	117.9 MPH	118 MPH	132.30809	110.18445	125.31774	117.9 MPH	118 MPH	4.64	117.9137
	Alignment 32-33	0.1 miles	S	0,000 ft	311.0 MPH	118 MPH	131.23601	110.81026	131.23601	131.2 MPH	131 MPH	4.05	124.5749
	Alignment 32-34	0.0 miles	C	7,000 ft	160.1 MPH	131 MPH	135.36286	129.1679	135.36286	135.4 MPH	135 MPH	1.25	133.2994
	Alignment 32-35	0.1 miles	S	0,000 ft	311.0 MPH	135 MPH	146.25599	129.69772	140.90633	140.9 MPH	135 MPH	3.37	138.1302
	Alignment 32-36	0.2 miles	C	5,000 ft	135.3 MPH	135 MPH	154.89213	124.66519	145.44749	135.3 MPH	135 MPH	6.37	135.3454
	Alignment 32-37	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	212.28175	0	188.02827	188.0 MPH	160 MPH	24.48	165.9781
	Alignment 32-38	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	192.31626	141.75689	176.96223	160.1 MPH	160 MPH	10.76	160.1428
	Alignment 32-39	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	228.60261	0	178.96906	179.0 MPH	109 MPH	27.10	149.2382
	Alignment 32-40	0.2 miles	C	3,221 ft	108.6 MPH	109 MPH	127.57823	98.030542	118.48397	108.6 MPH	109 MPH	6.26	108.6310
	Alignment 32-41	0.6 miles	C	6,304 ft	152.0 MPH	109 MPH	160.71177	0	156.40345	152.0 MPH	152 MPH	15.90	134.0248
	Alignment 32-42	2.2 miles	S	0,000 ft	311.0 MPH	152 MPH	274.63814	0	224.80194	224.8 MPH	160 MPH	41.78	190.3086
	Alignment 32-43	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	177.9347	150.66994	169.27268	160.1 MPH	160 MPH	5.71	160.1428
	Alignment 32-44	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	193.1424	141.20603	177.41154	177.4 MPH	160 MPH	10.50	168.7772
	Alignment 32-45	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	190.89183	142.6962	176.1894	160.1 MPH	160 MPH	10.24	160.1428
	Alignment 32-46	2.1 miles	S	0,000 ft	311.0 MPH	160 MPH	274.79837	0	203.52087	203.5 MPH	86 MPH	49.02	154.5838
	Alignment 32-47	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	121.52716	0	105.10994	85.6 MPH	86 MPH	13.21	85.5999
	Alignment 32-48	0.5 miles	S	0,000 ft	311.0 MPH	86 MPH	141.72929	0	141.72929	141.7 MPH	142 MPH	17.06	113.6646
	Alignment 32-49	0.5 miles	C	7,000 ft	160.1 MPH	142 MPH	176.37644	121.21191	168.45529	160.1 MPH	160 MPH	10.78	155.3633
	Alignment 32-50	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
	Alignment 32-51	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 32-52	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 32-53	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	182.9558	183.0 MPH	183 MPH	6.93	171.5493
	Alignment 32-54a	0.9 miles	C	18,017 ft	256.9 MPH	183 MPH	236.01029	150.30795	200.43684	200.4 MPH	157 MPH	18.51	182.4426
	Alignment 32-54b	1.0 miles	S	0,000 ft	311.0 MPH	157 MPH	222.07595	0	162.85247	162.9 MPH	61 MPH	32.72	114.5472
	Alignment 32-55	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 32-56	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 32-57	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 32-58	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 32-59	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 32-60	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 32 - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s ² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed	Min speed	Max	Max Speed (limiting)	Speed (f)	Total	Avg. Speed
						based on distance	based on distance	Speed (theo)			Segment Time	
Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
Alignment 32-1	0.2 miles	S	0,000 ft	621.0 MPH	0 MPH	76.53305	0	76.53305	76.5 MPH	77 MPH	23.26	38.2665
Alignment 32-2	0.4 miles	C	2,250 ft	123.4 MPH	77 MPH	123.9841	0	123.6825	123.4 MPH	123 MPH	14.42	100.2555
Alignment 32-3	0.7 miles	S	0,000 ft	621.0 MPH	123 MPH	175.7871	0	151.7834	151.8 MPH	123 MPH	17.32	137.5336
Alignment 32-4	0.3 miles	C	2,243 ft	123.2 MPH	123 MPH	148.4361	91.19949	136.3976	123.2 MPH	123 MPH	8.46	123.1881
Alignment 32-5	0.4 miles	S	0,000 ft	621.0 MPH	123 MPH	154.8288	79.86647	154.8288	154.8 MPH	155 MPH	9.62	139.0085
Alignment 32-6	0.3 miles	C	3,787 ft	160.1 MPH	155 MPH	177.3453	128.4235	168.9272	160.1 MPH	160 MPH	7.13	159.4819
Alignment 32-7	0.4 miles	S	0,000 ft	621.0 MPH	160 MPH	186.4265	128.4058	163.7957	163.8 MPH	137 MPH	9.13	152.0437
Alignment 32-8	0.5 miles	C	2,794 ft	137.5 MPH	137 MPH	178.0914	78.03716	153.1206	137.5 MPH	123 MPH	14.39	135.3289
Alignment 32-9	0.2 miles	C	2,243 ft	123.2 MPH	123 MPH	136.9019	107.7427	130.2256	123.2 MPH	123 MPH	4.40	123.1881
Alignment 32-10	1.5 miles	S	0,000 ft	621.0 MPH	123 MPH	227.5889	0	182.9918	183.0 MPH	123 MPH	36.35	153.0900
Alignment 32-11	0.4 miles	C	2,243 ft	123.2 MPH	123 MPH	159.0184	71.16012	142.236	123.2 MPH	123 MPH	12.47	123.1881
Alignment 32-12	1.1 miles	S	0,000 ft	621.0 MPH	123 MPH	205.0373	0	194.7671	194.8 MPH	184 MPH	25.05	162.9726
Alignment 32-13	0.1 miles	C	5,000 ft	183.9 MPH	184 MPH	190.0051	177.6355	186.9894	183.9 MPH	184 MPH	1.88	183.9243
Alignment 32-14	0.7 miles	S	0,000 ft	621.0 MPH	184 MPH	225.6373	129.399	215.5658	215.6 MPH	205 MPH	12.83	202.3830
Alignment 32-15	0.4 miles	S	0,000 ft	621.0 MPH	205 MPH	225.8415	181.7846	205.3188	205.3 MPH	183 MPH	7.03	194.0657
Alignment 32-16	0.4 miles	C	4,923 ft	182.5 MPH	183 MPH	203.995	158.1154	193.5473	182.5 MPH	183 MPH	6.92	182.5026
Alignment 32-17	1.2 miles	S	0,000 ft	621.0 MPH	183 MPH	247.212	74.16631	232.8875	232.9 MPH	218 MPH	19.95	211.7782
Alignment 32-18	0.2 miles	C	7,000 ft	217.6 MPH	218 MPH	226.4946	208.3723	222.1027	217.6 MPH	218 MPH	2.75	217.6222
Alignment 32-19	0.7 miles	S	0,000 ft	621.0 MPH	218 MPH	252.9864	175.2618	221.1677	221.2 MPH	184 MPH	12.40	204.0106
Alignment 32-20	0.3 miles	C	5,000 ft	183.9 MPH	184 MPH	201.9711	163.9024	193.1586	183.9 MPH	184 MPH	5.75	183.9243
Alignment 32-21	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	244.6656	88.28951	212.2938	212.3 MPH	174 MPH	20.26	195.2586
Alignment 32-22	0.3 miles	C	5,000 ft	183.9 MPH	174 MPH	194.6701	150.5176	174.2089	174.2 MPH	151 MPH	7.12	162.7070
Alignment 32-23	0.3 miles	S	0,000 ft	621.0 MPH	151 MPH	171.993	126.5718	151.359	151.4 MPH	127 MPH	7.38	139.5670
Alignment 32-24	0.2 miles	C	2,400 ft	127.4 MPH	127 MPH	142.6043	110.1774	135.2285	127.4 MPH	127 MPH	4.89	127.4265
Alignment 32-25	1.0 miles	S	0,000 ft	621.0 MPH	127 MPH	201.02	0	201.02	201.0 MPH	201 MPH	22.37	164.2233
Alignment 32-26	0.4 miles	C	7,000 ft	217.6 MPH	201 MPH	225.2304	173.4628	221.459	217.6 MPH	218 MPH	7.40	211.9609
Alignment 32-27	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	241.8384	190.3497	220.2608	220.3 MPH	196 MPH	8.08	209.3506
Alignment 32-28	0.1 miles	C	5,697 ft	196.3 MPH	196 MPH	203.3217	189.0712	199.8543	196.3 MPH	196 MPH	2.16	196.3258
Alignment 32-29	0.2 miles	S	0,000 ft	621.0 MPH	196 MPH	206.156	185.9767	201.1421	201.1 MPH	196 MPH	3.03	198.6498
Alignment 32-31	0.5 miles	S	0,000 ft	621.0 MPH	196 MPH	226.204	160.1991	196.0151	196.0 MPH	160 MPH	10.88	178.1331
Alignment 32-32	0.2 miles	C	3,795 ft	160.2 MPH	160 MPH	171.1063	148.5725	165.7603	160.2 MPH	160 MPH	3.42	160.2360
Alignment 32-33	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	170.2786	149.5203	170.2786	170.3 MPH	170 MPH	3.05	165.2573
Alignment 32-34	0.0 miles	C	7,000 ft	217.6 MPH	170 MPH	173.4792	167.0168	173.4792	173.5 MPH	173 MPH	0.97	171.8789
Alignment 32-35	0.1 miles	S	0,000 ft	621.0 MPH	173 MPH	182.1064	164.3999	182.1064	182.1 MPH	182 MPH	2.62	177.7928
Alignment 32-36	0.2 miles	C	5,000 ft	183.9 MPH	182 MPH	197.0684	165.7997	190.6097	183.9 MPH	184 MPH	4.69	183.8172
Alignment 32-37	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	246.1165	84.16049	232.3066	232.3 MPH	218 MPH	19.17	212.0386
Alignment 32-38	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	242.2793	189.7883	230.281	217.6 MPH	218 MPH	7.92	217.6222
Alignment 32-39	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	271.9795	144.0347	218.8207	218.8 MPH	148 MPH	22.00	183.8005
Alignment 32-40	0.2 miles	C	3,221 ft	147.6 MPH	148 MPH	162.0729	131.5925	155.0157	147.6 MPH	148 MPH	4.61	147.6215
Alignment 32-41	0.6 miles	C	6,304 ft	206.5 MPH	148 MPH	189.2609	88.11652	189.2609	189.3 MPH	189 MPH	12.65	168.4412
Alignment 32-42	2.2 miles	S	0,000 ft	621.0 MPH	189 MPH	296.9006	0	260.2973	260.3 MPH	218 MPH	34.56	230.1010
Alignment 32-43	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	231.0291	203.3332	224.4258	217.6 MPH	218 MPH	4.20	217.6222
Alignment 32-44	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	242.9356	188.9475	230.6264	230.6 MPH	218 MPH	7.90	224.1243
Alignment 32-45	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.1501	191.2209	229.6876	217.6 MPH	218 MPH	7.54	217.6222
Alignment 32-46	2.1 miles	S	0,000 ft	621.0 MPH	218 MPH	311.8138	0	235.3286	235.3 MPH	116 MPH	41.55	182.3862
Alignment 32-47	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	144.8198	78.03692	131.3469	116.3 MPH	116 MPH	9.72	116.3240
Alignment 32-48	0.5 miles	S	0,000 ft	621.0 MPH	116 MPH	162.1453	27.77443	162.1453	162.1 MPH	162 MPH	13.93	139.2346
Alignment 32-49	0.5 miles	C	7,000 ft	217.6 MPH	162 MPH	193.1646	123.5704	193.1646	193.2 MPH	193 MPH	9.43	177.6550
Alignment 32-50	0.5 miles	C	7,017 ft	217.9 MPH	193 MPH	223.3695	157.2615	220.6411	217.9 MPH	218 MPH	9.20	207.7911
Alignment 32-51	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
Alignment 32-52	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
Alignment 32-53	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	232.9673	233.0 MPH	231 MPH	5.26	226.0548
Alignment 32-54a	0.9 miles	C	18,017 ft	349.1 MPH	231 MPH	274.9346	176.4454	231.2121	231.2 MPH	177 MPH	16.54	204.2112
Alignment 32-54b	1.0 miles	S	0,000 ft	621.0 MPH	177 MPH	236.6384	81.6105	177.3062	177.3 MPH	83 MPH	28.77	130.2699
Alignment 32-55	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
Alignment 32-56	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
Alignment 32-57	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
Alignment 32-58	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
Alignment 32-59	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
Alignment 32-60	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-9)
Alignment 32B

Alignment 32B - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s² = 1 acceleration of gravity [g]
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32B-5	0.2 miles	S	0,000 ft	205.0 MPH	0 MPH	53.545121	0	53.545121	53.5 MPH	54 MPH	33.24	26.7726
	Alignment 32B-6	0.4 miles	C	2,250 ft	71.0 MPH	54 MPH	86.743515	0	79.263603	71.0 MPH	71 MPH	21.70	66.6405
	Alignment 32B-7	0.7 miles	S	0,000 ft	205.0 MPH	71 MPH	112.7626	0	95.466764	95.5 MPH	74 MPH	28.37	83.9871
	Alignment 32B-8	0.3 miles	C	2,243 ft	74.2 MPH	74 MPH	94.176913	46.427505	84.798859	74.2 MPH	74 MPH	14.04	74.2456
	Alignment 32B-9	0.4 miles	S	0,000 ft	205.0 MPH	74 MPH	99.087122	34.735375	95.609251	95.6 MPH	92 MPH	15.50	86.2104
	Alignment 32B-10	0.3 miles	C	3,787 ft	92.0 MPH	92 MPH	110.11385	69.30324	101.46197	92.0 MPH	92 MPH	12.35	92.0000
	Alignment 32B-11	0.2 miles	S	0,000 ft	205.0 MPH	92 MPH	105.24947	76.488883	100.2558	100.3 MPH	95 MPH	8.39	96.7114
	Alignment 32B-12	0.4 miles	C	4,000 ft	95.0 MPH	95 MPH	115.72726	68.243694	105.87209	95.0 MPH	95 MPH	14.27	95.0000
	Alignment 32B-13	1.9 miles	S	0,000 ft	205.0 MPH	95 MPH	177.41932	0	153.46435	153.5 MPH	125 MPH	53.97	129.1438
	Alignment 32B-14	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.2725	100.72687	135.51586	125.0 MPH	125 MPH	13.61	125.0000
BECKLEY AVE.	Alignment 32B-15	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.6322	49.748551	141.44094	141.4 MPH	106 MPH	32.21	126.7309
	Alignment 32B-16	0.1 miles	C	5,000 ft	106.0 MPH	106 MPH	111.12602	100.61316	108.59326	106.0 MPH	106 MPH	3.26	106.0000
	Alignment 32B-17	0.7 miles	S	0,000 ft	205.0 MPH	106 MPH	139.9944	53.605669	132.23924	132.2 MPH	124 MPH	21.41	121.2703
	Alignment 32B-18	0.4 miles	S	0,000 ft	205.0 MPH	124 MPH	140.61043	104.78886	124.08927	124.1 MPH	105 MPH	11.91	114.5889
	Alignment 32B-19	0.4 miles	C	4,923 ft	105.0 MPH	105 MPH	122.84562	83.420348	114.27171	105.0 MPH	105 MPH	12.02	105.0000
	Alignment 32B-20	1.2 miles	S	0,000 ft	205.0 MPH	105 MPH	156.9585	0	141.88194	141.9 MPH	125 MPH	33.38	126.5810
	Alignment 32B-21	0.2 miles	C	7,000 ft	125.0 MPH	125 MPH	132.49066	117.03087	128.7998	125.0 MPH	125 MPH	4.79	125.0000
	Alignment 32B-22	0.7 miles	S	0,000 ft	205.0 MPH	125 MPH	154.17977	86.478895	132.30155	132.3 MPH	106 MPH	20.86	121.2150
	Alignment 32B-23	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	121.01599	88.471074	113.75603	106.0 MPH	106 MPH	9.98	106.0000
	Alignment 32B-24	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	154.85119	0	132.69305	132.7 MPH	106 MPH	33.15	119.3465
	Alignment 32B-25	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	122.33608	86.636508	108.23612	106.0 MPH	92 MPH	11.50	100.7083
	Alignment 32B-26	0.3 miles	S	0,000 ft	205.0 MPH	92 MPH	108.54958	71.72857	92.498682	92.5 MPH	73 MPH	12.42	82.9862
	Alignment 32B-27	0.2 miles	C	2,400 ft	73.0 MPH	73 MPH	85.645469	57.644199	79.574325	73.0 MPH	73 MPH	8.53	73.0000
	Alignment 32B-28	1.0 miles	S	0,000 ft	205.0 MPH	73 MPH	130.99873	0	124.19676	124.2 MPH	117 MPH	36.25	101.3098
	Alignment 32B-29	0.4 miles	C	7,000 ft	125.0 MPH	117 MPH	136.89545	92.938882	117.02428	117.0 MPH	93 MPH	14.93	105.0243
	Alignment 32B-30	0.5 miles	S	0,000 ft	205.0 MPH	93 MPH	118.72339	56.592909	93.124225	93.1 MPH	57 MPH	22.51	75.1238
	Alignment 32B-31	0.1 miles	C	5,697 ft	113.0 MPH	57 MPH	67.952601	43.364087	57.243148	57.2 MPH	44 MPH	8.37	50.7388
	Alignment 32B-32	0.2 miles	S	0,000 ft	205.0 MPH	44 MPH	62.230614	0	44.003689	44.0 MPH	0 MPH	27.32	22.0037
	Alignment 32B-33-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 32B-34	0.5 miles	S	0,000 ft	205.0 MPH	0 MPH	79.006747	0	79.006747	79.0 MPH	79 MPH	49.05	39.5034
	Alignment 32B-35	0.2 miles	C	3,795 ft	92.0 MPH	79 MPH	89.4712	66.925603	89.4712	89.5 MPH	89 MPH	6.50	84.2390
	Alignment 32B-37	0.1 miles	S	0,000 ft	205.0 MPH	89 MPH	98.131674	79.877194	98.131674	98.1 MPH	98 MPH	5.38	93.8014
	Alignment 32B-38	0.0 miles	C	7,000 ft	125.0 MPH	98 MPH	100.83832	95.348222	100.83832	100.8 MPH	101 MPH	1.68	99.4850
	Alignment 32B-39	0.1 miles	S	0,000 ft	205.0 MPH	101 MPH	108.02765	93.095439	107.01863	107.0 MPH	106 MPH	4.47	104.2937
	Alignment 32B-40	0.2 miles	C	5,000 ft	106.0 MPH	106 MPH	118.37636	91.973026	112.35872	106.0 MPH	106 MPH	8.13	106.0000
	Alignment 32B-41	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	155.97253	0	141.33724	141.3 MPH	125 MPH	32.08	126.6721
	Alignment 32B-42	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.51874	100.37079	135.6479	125.0 MPH	125 MPH	13.78	125.0000
	Alignment 32B-43	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.26886	50.971089	133.93459	133.9 MPH	85 MPH	35.93	112.5552
	Alignment 32B-44	0.2 miles	C	3,221 ft	85.0 MPH	85 MPH	97.034569	70.952748	91.215973	85.0 MPH	85 MPH	8.00	85.0000
	Alignment 32B-45	0.6 miles	C	6,304 ft	119.0 MPH	85 MPH	118.7069	18.938665	118.7069	118.7 MPH	119 MPH	20.93	101.8534
	Alignment 32B-46	2.2 miles	S	0,000 ft	205.0 MPH	119 MPH	199.26456	0	164.84442	164.8 MPH	121 MPH	55.87	142.3343
	Alignment 32B-47	0.1 miles	C	18,000 ft	201.0 MPH	121 MPH	126.34876	115.4036	121.28481	121.3 MPH	116 MPH	3.46	118.7702
	Alignment 32B-48	0.6 miles	S	0,000 ft	205.0 MPH	116 MPH	142.59179	81.114626	116.31083	116.3 MPH	82 MPH	21.50	99.3080
	Alignment 32B-49	0.4 miles	C	3,000 ft	82.0 MPH	82 MPH	104.51329	50.249099	93.933562	82.0 MPH	82 MPH	15.90	82.0000
	Alignment 32B-50	0.4 miles	S	0,000 ft	205.0 MPH	82 MPH	106.53767	45.800932	95.063859	95.1 MPH	82 MPH	16.22	88.5319
	Alignment 32B-51	0.1 miles	C	3,000 ft	82.0 MPH	82 MPH	87.152215	76.501578	84.615331	82.0 MPH	82 MPH	3.30	82.0000
	Alignment 32B-52	1.8 miles	S	0,000 ft	205.0 MPH	82 MPH	166.32547	0	126.27186	126.3 MPH	65 MPH	65.53	99.2014
	Alignment 32B-53	0.3 miles	C	2,000 ft	65.0 MPH	65 MPH	88.69906	24.134554	77.757711	65.0 MPH	65 MPH	17.40	65.0000
	Alignment 32B-54	0.5 miles	S	0,000 ft	205.0 MPH	65 MPH	102.32686	0	102.32686	102.3 MPH	102 MPH	23.17	83.6634
	Alignment 32B-55	0.5 miles	C	7,000 ft	125.0 MPH	102 MPH	125.95893	71.245492	125.48038	125.0 MPH	125 MPH	14.67	114.1251
	Alignment 32B-56	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 32B-57	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 32B-58	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 32B-59	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 32B-60a	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
	Alignment 32B-60b	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 32B-61	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 32B-62	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 32B-63	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 32B-64	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 32B-65	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 32B-66	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 32B - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32B-5	0.2 miles	S	0,000 ft	311.0 MPH	0 MPH	76.533051	0	76.533051	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 32B-6	0.4 miles	C	2,250 ft	90.8 MPH	77 MPH	123.98414	0	108.66309	90.8 MPH	91 MPH	16.26	88.8928
	Alignment 32B-7	0.7 miles	S	0,000 ft	311.0 MPH	91 MPH	154.66644	0	126.76618	126.8 MPH	91 MPH	21.91	108.7439
	Alignment 32B-8	0.3 miles	C	2,243 ft	90.7 MPH	91 MPH	122.78268	69.718954	107.91943	90.7 MPH	91 MPH	11.50	90.6511
	Alignment 32B-9	0.4 miles	S	0,000 ft	311.0 MPH	91 MPH	130.4388	0	124.27513	124.3 MPH	118 MPH	12.19	109.6572
	Alignment 32B-10	0.3 miles	C	3,787 ft	117.8 MPH	118 MPH	146.12908	101.06074	132.71782	117.8 MPH	118 MPH	9.65	117.7894
	Alignment 32B-11	0.2 miles	S	0,000 ft	311.0 MPH	118 MPH	138.61273	106.11731	130.13106	130.1 MPH	121 MPH	6.51	124.6524
	Alignment 32B-12	0.4 miles	C	4,000 ft	121.1 MPH	121 MPH	153.55097	101.42435	138.2617	121.1 MPH	121 MPH	11.20	121.0566
	Alignment 32B-13	1.9 miles	S	0,000 ft	311.0 MPH	121 MPH	246.01691	0	207.56931	207.6 MPH	160 MPH	40.70	171.2330
	Alignment 32B-14	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.93555	142.00923	176.75545	160.1 MPH	160 MPH	10.62	160.1428
BECKLEY AVE.	Alignment 32B-15	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.15216	0	188.18752	188.2 MPH	135 MPH	24.58	166.0653
	Alignment 32B-16	0.1 miles	C	5,000 ft	135.3 MPH	135 MPH	143.49969	131.16928	139.48214	135.3 MPH	135 MPH	2.55	135.3454
	Alignment 32B-17	0.7 miles	S	0,000 ft	311.0 MPH	135 MPH	188.15531	99.779451	169.71067	169.7 MPH	149 MPH	16.74	155.0954
	Alignment 32B-18	0.4 miles	S	0,000 ft	311.0 MPH	149 MPH	176.57966	133.43802	156.8704	156.9 MPH	134 MPH	9.25	147.4852
	Alignment 32B-19	0.4 miles	C	4,923 ft	134.3 MPH	134 MPH	162.30529	118.1957	148.96186	134.3 MPH	134 MPH	9.40	134.2992
	Alignment 32B-20	1.2 miles	S	0,000 ft	311.0 MPH	134 MPH	214.10939	0	189.06157	189.1 MPH	160 MPH	25.43	166.1459
	Alignment 32B-21	0.2 miles	C	7,000 ft	160.1 MPH	160 MPH	172.00615	154.00307	166.18037	160.1 MPH	160 MPH	3.74	160.1428
	Alignment 32B-22	0.7 miles	S	0,000 ft	311.0 MPH	160 MPH	205.64151	132.28499	174.07872	174.1 MPH	135 MPH	16.01	157.9927
	Alignment 32B-23	0.3 miles	C	5,000 ft	135.3 MPH	135 MPH	159.00481	122.10447	147.64975	135.3 MPH	135 MPH	7.82	135.3454
	Alignment 32B-24	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	210.59794	0	173.17115	173.2 MPH	125 MPH	26.13	151.3608
	Alignment 32B-25	0.3 miles	C	5,000 ft	135.3 MPH	125 MPH	152.46458	109.06367	132.9388	132.9 MPH	110 MPH	9.38	123.3977
	Alignment 32B-26	0.3 miles	S	0,000 ft	311.0 MPH	110 MPH	137.40664	93.706925	117.62951	117.6 MPH	94 MPH	9.57	107.6660
	Alignment 32B-27	0.2 miles	C	2,400 ft	93.8 MPH	94 MPH	113.53977	82.381259	104.12516	93.8 MPH	94 MPH	6.64	93.7700
	Alignment 32B-28	1.0 miles	S	0,000 ft	311.0 MPH	94 MPH	181.56088	0	156.26956	156.3 MPH	126 MPH	28.19	130.2779
	Alignment 32B-29	0.4 miles	C	7,000 ft	160.1 MPH	126 MPH	161.85085	104.04151	136.41975	136.4 MPH	105 MPH	12.72	123.3248
	Alignment 32B-30	0.5 miles	S	0,000 ft	311.0 MPH	105 MPH	148.83351	0	116.90897	116.9 MPH	72 MPH	17.27	97.9129
	Alignment 32B-31	0.1 miles	C	5,697 ft	144.5 MPH	72 MPH	89.330256	61.769281	76.889189	76.9 MPH	62 MPH	6.01	70.6806
	Alignment 32B-32	0.2 miles	S	0,000 ft	311.0 MPH	62 MPH	88.320339	0	62.451911	62.5 MPH	0 MPH	19.12	31.4487
	Alignment 32B-33-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 32B-34	0.5 miles	S	0,000 ft	311.0 MPH	0 MPH	112.92583	0	112.92583	112.9 MPH	113 MPH	34.32	56.4629
	Alignment 32B-35	0.2 miles	C	3,795 ft	117.9 MPH	113 MPH	127.88287	104.82945	122.99934	117.9 MPH	118 MPH	4.67	117.1048
	Alignment 32B-37	0.1 miles	S	0,000 ft	311.0 MPH	118 MPH	131.23601	110.81026	131.23601	131.2 MPH	131 MPH	4.05	124.5749
	Alignment 32B-38	0.0 miles	C	7,000 ft	160.1 MPH	131 MPH	135.36286	129.1679	135.36286	135.4 MPH	135 MPH	1.25	133.2994
	Alignment 32B-39	0.1 miles	S	0,000 ft	311.0 MPH	135 MPH	146.25599	129.69772	140.90633	140.9 MPH	135 MPH	3.37	138.1302
	Alignment 32B-40	0.2 miles	C	5,000 ft	135.3 MPH	135 MPH	154.89213	124.66519	145.44749	135.3 MPH	135 MPH	6.37	135.3454
	Alignment 32B-41	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	212.28175	0	188.02827	188.0 MPH	160 MPH	24.48	165.9781
	Alignment 32B-42	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	192.31626	141.75689	176.96223	160.1 MPH	160 MPH	10.76	160.1428
	Alignment 32B-43	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	228.60261	0	178.96906	179.0 MPH	109 MPH	27.10	149.2382
	Alignment 32B-44	0.2 miles	C	3,221 ft	108.6 MPH	109 MPH	127.57823	98.030542	118.48397	108.6 MPH	109 MPH	6.26	108.6310
	Alignment 32B-45	0.6 miles	C	6,304 ft	152.0 MPH	109 MPH	160.71177	0	156.40345	152.0 MPH	152 MPH	15.90	134.0248
	Alignment 32B-46	2.2 miles	S	0,000 ft	311.0 MPH	152 MPH	274.63814	0	213.07523	213.1 MPH	124 MPH	45.64	174.2283
	Alignment 32B-47	0.1 miles	C	18,000 ft	256.8 MPH	124 MPH	134.4576	118.54531	126.96426	127.0 MPH	119 MPH	3.32	123.6602
	Alignment 32B-48	0.6 miles	S	0,000 ft	311.0 MPH	119 MPH	167.95593	85.349766	140.00039	140.0 MPH	105 MPH	17.07	125.0669
	Alignment 32B-49	0.4 miles	C	3,000 ft	104.8 MPH	105 MPH	139.8908	82.413559	123.61323	104.8 MPH	105 MPH	12.43	104.8381
	Alignment 32B-50	0.4 miles	S	0,000 ft	311.0 MPH	105 MPH	142.97651	79.779372	125.36607	125.4 MPH	105 MPH	12.48	115.1021
	Alignment 32B-51	0.1 miles	C	3,000 ft	104.8 MPH	105 MPH	113.01094	100.5958	109.00114	104.8 MPH	105 MPH	2.58	104.8381
	Alignment 32B-52	1.8 miles	S	0,000 ft	311.0 MPH	105 MPH	231.88527	0	174.78291	174.8 MPH	86 MPH	48.36	134.4195
	Alignment 32B-53	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	121.52716	0	105.10994	85.6 MPH	86 MPH	13.21	85.5999
	Alignment 32B-54	0.5 miles	S	0,000 ft	311.0 MPH	86 MPH	141.72929	0	141.72929	141.7 MPH	142 MPH	17.06	113.6646
	Alignment 32B-55	0.5 miles	C	7,000 ft	160.1 MPH	142 MPH	176.37644	121.21191	168.45529	160.1 MPH	160 MPH	10.78	155.3633
	Alignment 32B-56	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
	Alignment 32B-57	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 32B-58	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 32B-59	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	170.93394	170.9 MPH	158 MPH	7.21	164.9543
	Alignment 32B-60a	0.9 miles	C	18,017 ft	256.9 MPH	158 MPH	217.23727	118.67457	175.48793	175.5 MPH	120 MPH	22.18	152.2971
	Alignment 32B-60b	1.0 miles	S	0,000 ft	311.0 MPH	120 MPH	197.65811	0	146.27517	146.3 MPH	61 MPH	33.89	110.5976
	Alignment 32B-61	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 32B-62	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 32B-63	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 32B-64	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	72.000208	72.0 MPH	40 MPH	13.21	58.7087
	Alignment 32B-65	0.1 miles	C	1,000 ft	60.5 MPH	40 MPH	58.013423	0	45.549738	45.5 MPH	28 MPH	7.02	38.2164
	Alignment 32B-66	0.1 miles	S	0,000 ft	311.0 MPH	28 MPH	49.560003	0	35.044214	35.0 MPH	0 MPH	12.79	19.8652

Alignment 32B - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32B-5	0.2 miles	S	0,000 ft	621.0 MPH	0 MPH	76.53305	0	76.53305	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 32B-6	0.4 miles	C	2,250 ft	123.4 MPH	77 MPH	123.9841	0	123.6825	123.4 MPH	123 MPH	14.42	100.2555
	Alignment 32B-7	0.7 miles	S	0,000 ft	621.0 MPH	123 MPH	175.7871	0	151.7834	151.8 MPH	123 MPH	17.32	137.5336
	Alignment 32B-8	0.3 miles	C	2,243 ft	123.2 MPH	123 MPH	148.4361	91.19949	136.3976	123.2 MPH	123 MPH	8.46	123.1881
	Alignment 32B-9	0.4 miles	S	0,000 ft	621.0 MPH	123 MPH	154.8288	79.86647	154.8288	154.8 MPH	155 MPH	9.62	139.0085
	Alignment 32B-10	0.3 miles	C	3,787 ft	160.1 MPH	155 MPH	177.3453	128.4235	168.9272	160.1 MPH	160 MPH	7.13	159.4819
	Alignment 32B-11	0.2 miles	S	0,000 ft	621.0 MPH	160 MPH	175.9563	142.4159	170.3278	170.3 MPH	165 MPH	4.89	166.0009
	Alignment 32B-12	0.4 miles	C	4,000 ft	164.5 MPH	165 MPH	189.6991	134.6823	177.5504	164.5 MPH	165 MPH	8.24	164.5069
	Alignment 32B-13	1.9 miles	S	0,000 ft	621.0 MPH	165 MPH	270.0595	0	245.2464	245.2 MPH	218 MPH	32.93	211.6468
	Alignment 32B-14	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.9772	190.1733	230.1221	217.6 MPH	218 MPH	7.82	217.6222
BECKLEY AVE.	Alignment 32B-15	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	272.4416	143.1588	232.4355	232.4 MPH	184 MPH	19.24	212.1214
	Alignment 32B-16	0.1 miles	C	5,000 ft	183.9 MPH	184 MPH	190.0051	177.6355	186.9894	183.9 MPH	184 MPH	1.88	183.9243
	Alignment 32B-17	0.7 miles	S	0,000 ft	621.0 MPH	184 MPH	225.6373	129.399	215.5658	215.6 MPH	205 MPH	12.83	202.3830
	Alignment 32B-18	0.4 miles	S	0,000 ft	621.0 MPH	205 MPH	225.8415	181.7846	205.3188	205.3 MPH	183 MPH	7.03	194.0657
	Alignment 32B-19	0.4 miles	C	4,923 ft	182.5 MPH	183 MPH	203.995	158.1154	193.5473	182.5 MPH	183 MPH	6.92	182.5026
	Alignment 32B-20	1.2 miles	S	0,000 ft	621.0 MPH	183 MPH	247.212	74.16631	232.8875	232.9 MPH	218 MPH	19.95	211.7782
	Alignment 32B-21	0.2 miles	C	7,000 ft	217.6 MPH	218 MPH	226.4946	208.3723	222.1027	217.6 MPH	218 MPH	2.75	217.6222
	Alignment 32B-22	0.7 miles	S	0,000 ft	621.0 MPH	218 MPH	252.9864	175.2618	221.1677	221.2 MPH	184 MPH	12.40	204.0106
	Alignment 32B-23	0.3 miles	C	5,000 ft	183.9 MPH	184 MPH	201.9711	163.9024	193.1586	183.9 MPH	184 MPH	5.75	183.9243
	Alignment 32B-24	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	244.6656	88.28951	212.2938	212.3 MPH	174 MPH	20.26	195.2586
	Alignment 32B-25	0.3 miles	C	5,000 ft	183.9 MPH	174 MPH	194.6701	150.5176	174.2089	174.2 MPH	151 MPH	7.12	162.7070
	Alignment 32B-26	0.3 miles	S	0,000 ft	621.0 MPH	151 MPH	171.993	126.5718	151.359	151.4 MPH	127 MPH	7.38	139.5670
	Alignment 32B-27	0.2 miles	C	2,400 ft	127.4 MPH	127 MPH	142.6043	110.1774	135.2285	127.4 MPH	127 MPH	4.89	127.4265
	Alignment 32B-28	1.0 miles	S	0,000 ft	621.0 MPH	127 MPH	201.02	0	184.3435	184.3 MPH	166 MPH	22.87	160.5858
	Alignment 32B-29	0.4 miles	C	7,000 ft	217.6 MPH	166 MPH	194.6168	131.2871	166.2824	166.3 MPH	132 MPH	10.50	149.2801
	Alignment 32B-30	0.5 miles	S	0,000 ft	621.0 MPH	132 MPH	168.9687	79.35733	132.498	132.5 MPH	81 MPH	15.80	106.9932
	Alignment 32B-31	0.1 miles	C	5,697 ft	196.3 MPH	81 MPH	96.73104	61.36045	81.24314	81.2 MPH	62 MPH	5.92	71.7401
	Alignment 32B-32	0.2 miles	S	0,000 ft	621.0 MPH	62 MPH	88.32034	0	62.45191	62.5 MPH	0 MPH	19.12	31.4487
	Alignment 32B-33-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 32B-34	0.5 miles	S	0,000 ft	621.0 MPH	0 MPH	112.9258	0	112.9258	112.9 MPH	113 MPH	34.32	56.4629
	Alignment 32B-35	0.2 miles	C	3,795 ft	160.2 MPH	113 MPH	127.8829	95.65803	127.8829	127.9 MPH	128 MPH	4.55	120.4044
	Alignment 32B-37	0.1 miles	S	0,000 ft	621.0 MPH	128 MPH	140.2615	114.17	140.2615	140.3 MPH	140 MPH	3.76	134.0722
	Alignment 32B-38	0.0 miles	C	7,000 ft	217.6 MPH	140 MPH	144.1301	136.283	144.1301	144.1 MPH	144 MPH	1.18	142.1958
	Alignment 32B-39	0.1 miles	S	0,000 ft	621.0 MPH	144 MPH	154.406	133.0631	154.406	154.4 MPH	154 MPH	3.12	149.2680
	Alignment 32B-40	0.2 miles	C	5,000 ft	183.9 MPH	154 MPH	171.7976	134.7887	171.7976	171.8 MPH	172 MPH	5.29	163.1018
	Alignment 32B-41	1.1 miles	S	0,000 ft	621.0 MPH	172 MPH	237.191	52.6235	227.617	227.6 MPH	218 MPH	20.00	203.1868
	Alignment 32B-42	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	242.2793	189.7883	230.281	217.6 MPH	218 MPH	7.92	217.6222
	Alignment 32B-43	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	271.9795	144.0347	218.8207	218.8 MPH	148 MPH	22.00	183.8005
	Alignment 32B-44	0.2 miles	C	3,221 ft	147.6 MPH	148 MPH	162.0729	131.5925	155.0157	147.6 MPH	148 MPH	4.61	147.6215
	Alignment 32B-45	0.6 miles	C	6,304 ft	206.5 MPH	148 MPH	189.2609	88.11652	189.2609	189.3 MPH	189 MPH	12.65	168.4412
	Alignment 32B-46	2.2 miles	S	0,000 ft	621.0 MPH	189 MPH	296.9006	0	250.014	250.0 MPH	192 MPH	36.09	220.3064
	Alignment 32B-47	0.1 miles	C	18,000 ft	349.0 MPH	192 MPH	198.9142	184.8274	192.0831	192.1 MPH	185 MPH	2.18	188.5822
	Alignment 32B-48	0.6 miles	S	0,000 ft	621.0 MPH	185 MPH	219.7116	142.0451	185.1622	185.2 MPH	142 MPH	13.02	163.8952
	Alignment 32B-49	0.4 miles	C	3,000 ft	142.5 MPH	142 MPH	169.9274	108.2519	156.7996	142.5 MPH	142 MPH	9.15	142.4672
	Alignment 32B-50	0.4 miles	S	0,000 ft	621.0 MPH	142 MPH	172.4765	104.1424	158.1851	158.2 MPH	142 MPH	9.55	150.3261
	Alignment 32B-51	0.1 miles	C	3,000 ft	142.5 MPH	142 MPH	148.5845	136.0751	145.558	142.5 MPH	142 MPH	1.90	142.4672
	Alignment 32B-52	1.8 miles	S	0,000 ft	621.0 MPH	142 MPH	251.1507	0	195.714	195.7 MPH	116 MPH	40.31	161.2665
	Alignment 32B-53	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	144.8198	78.03692	131.3469	116.3 MPH	116 MPH	9.72	116.3240
	Alignment 32B-54	0.5 miles	S	0,000 ft	621.0 MPH	116 MPH	162.1453	27.77443	162.1453	162.1 MPH	162 MPH	13.93	139.2346
	Alignment 32B-55	0.5 miles	C	7,000 ft	217.6 MPH	162 MPH	193.1646	123.5704	193.1646	193.2 MPH	193 MPH	9.43	177.6550
	Alignment 32B-56	0.5 miles	C	7,017 ft	217.9 MPH	193 MPH	223.3695	157.2615	220.6411	217.9 MPH	218 MPH	9.20	207.7911
	Alignment 32B-57	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
	Alignment 32B-58	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
	Alignment 32B-59	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	232.9673	233.0 MPH	231 MPH	5.26	226.0548
	Alignment 32B-60a	0.9 miles	C	18,017 ft	349.1 MPH	231 MPH	274.9346	176.4454	231.2121	231.2 MPH	177 MPH	16.54	204.2112
	Alignment 32B-60b	1.0 miles	S	0,000 ft	621.0 MPH	177 MPH	236.6384	81.6105	177.3062	177.3 MPH	83 MPH	28.77	130.2699
	Alignment 32B-61	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 32B-62	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
	Alignment 32B-63	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 32B-64	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
	Alignment 32B-65	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
	Alignment 32B-66	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 32B - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s² = 1 acceleration of gravity [g]
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32B-5	0.2 miles	S	0,000 ft	205.0 MPH	0 MPH	53.545121	0	53.545121	53.5 MPH	54 MPH	33.24	26.7726
	Alignment 32B-6	0.4 miles	C	2,250 ft	71.0 MPH	54 MPH	86.743515	0	79.263603	71.0 MPH	71 MPH	21.70	66.6405
	Alignment 32B-7	0.7 miles	S	0,000 ft	205.0 MPH	71 MPH	112.7626	0	95.466764	95.5 MPH	74 MPH	28.37	83.9871
	Alignment 32B-8	0.3 miles	C	2,243 ft	74.2 MPH	74 MPH	94.176913	46.427505	84.798859	74.2 MPH	74 MPH	14.04	74.2456
	Alignment 32B-9	0.4 miles	S	0,000 ft	205.0 MPH	74 MPH	99.087122	34.735375	95.609251	95.6 MPH	92 MPH	15.50	86.2104
	Alignment 32B-10	0.3 miles	C	3,787 ft	92.0 MPH	92 MPH	110.11385	69.30324	101.46197	92.0 MPH	92 MPH	12.35	92.0000
	Alignment 32B-11	0.2 miles	S	0,000 ft	205.0 MPH	92 MPH	105.24947	76.488883	100.2558	100.3 MPH	95 MPH	8.39	96.7114
	Alignment 32B-12	0.4 miles	C	4,000 ft	95.0 MPH	95 MPH	115.72726	68.243694	105.87209	95.0 MPH	95 MPH	14.27	95.0000
	Alignment 32B-13	1.9 miles	S	0,000 ft	205.0 MPH	95 MPH	177.41932	0	153.46435	153.5 MPH	125 MPH	53.97	129.1438
	Alignment 32B-14	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.2725	100.72687	135.51586	125.0 MPH	125 MPH	13.61	125.0000
BECKLEY AVE.	Alignment 32B-15	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.6322	49.748551	141.44094	141.4 MPH	106 MPH	32.21	126.7309
	Alignment 32B-16	0.1 miles	C	5,000 ft	106.0 MPH	106 MPH	111.12602	100.61316	108.59326	106.0 MPH	106 MPH	3.26	106.0000
	Alignment 32B-17	0.7 miles	S	0,000 ft	205.0 MPH	106 MPH	139.9944	53.605669	132.23924	132.2 MPH	124 MPH	21.41	121.2703
	Alignment 32B-18	0.4 miles	S	0,000 ft	205.0 MPH	124 MPH	140.61043	104.78886	124.08927	124.1 MPH	105 MPH	11.91	114.5889
	Alignment 32B-19	0.4 miles	C	4,923 ft	105.0 MPH	105 MPH	122.84562	83.420348	114.27171	105.0 MPH	105 MPH	12.02	105.0000
	Alignment 32B-20	1.2 miles	S	0,000 ft	205.0 MPH	105 MPH	156.9585	0	141.88194	141.9 MPH	125 MPH	33.38	126.5810
	Alignment 32B-21	0.2 miles	C	7,000 ft	125.0 MPH	125 MPH	132.49066	117.03087	128.7998	125.0 MPH	125 MPH	4.79	125.0000
	Alignment 32B-22	0.7 miles	S	0,000 ft	205.0 MPH	125 MPH	154.17977	86.478895	132.30155	132.3 MPH	106 MPH	20.86	121.2150
	Alignment 32B-23	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	121.01599	88.471074	113.75603	106.0 MPH	106 MPH	9.98	106.0000
	Alignment 32B-24	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	154.85119	0	132.69305	132.7 MPH	106 MPH	33.15	119.3465
	Alignment 32B-25	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	122.33608	86.636508	108.23612	106.0 MPH	92 MPH	11.50	100.7083
	Alignment 32B-26	0.3 miles	S	0,000 ft	205.0 MPH	92 MPH	108.54958	71.72857	92.498682	92.5 MPH	73 MPH	12.42	82.9862
	Alignment 32B-27	0.2 miles	C	2,400 ft	73.0 MPH	73 MPH	85.645469	57.644199	79.574325	73.0 MPH	73 MPH	8.53	73.0000
	Alignment 32B-28	1.0 miles	S	0,000 ft	205.0 MPH	73 MPH	130.99873	0	128.0345	128.0 MPH	125 MPH	36.05	101.8759
	Alignment 32B-29	0.4 miles	C	7,000 ft	125.0 MPH	125 MPH	143.79278	102.82819	134.72447	125.0 MPH	125 MPH	12.54	125.0000
	Alignment 32B-30	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	145.15937	100.88983	130.07737	130.1 MPH	113 MPH	13.75	122.9137
	Alignment 32B-31	0.1 miles	C	5,697 ft	113.0 MPH	113 MPH	118.90145	106.77286	115.98827	113.0 MPH	113 MPH	3.76	113.0000
	Alignment 32B-32	0.2 miles	S	0,000 ft	205.0 MPH	113 MPH	121.26685	104.07858	121.1335	121.1 MPH	121 MPH	5.13	117.1313
	Alignment 32B-34	0.5 miles	S	0,000 ft	205.0 MPH	121 MPH	144.50974	91.645698	121.13436	121.1 MPH	92 MPH	18.17	106.6337
	Alignment 32B-35	0.2 miles	C	3,795 ft	92.0 MPH	92 MPH	101.12878	81.859455	96.672203	92.0 MPH	92 MPH	5.95	92.0000
	Alignment 32B-37	0.1 miles	S	0,000 ft	205.0 MPH	92 MPH	100.44267	82.699881	100.44267	100.4 MPH	100 MPH	5.24	96.2213
	Alignment 32B-38	0.0 miles	C	7,000 ft	125.0 MPH	100 MPH	103.08866	97.725062	103.08866	103.1 MPH	103 MPH	1.64	101.7657
	Alignment 32B-39	0.1 miles	S	0,000 ft	205.0 MPH	103 MPH	110.13119	95.528347	108.08533	108.1 MPH	106 MPH	4.40	106.0156
	Alignment 32B-40	0.2 miles	C	5,000 ft	106.0 MPH	106 MPH	118.37636	91.973026	112.35872	106.0 MPH	106 MPH	8.13	106.0000
	Alignment 32B-41	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	155.97253	0	141.33724	141.3 MPH	125 MPH	32.08	126.6721
	Alignment 32B-42	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.51874	100.37079	135.6479	125.0 MPH	125 MPH	13.78	125.0000
	Alignment 32B-43	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.26886	50.971089	133.93459	133.9 MPH	85 MPH	35.93	112.5552
	Alignment 32B-44	0.2 miles	C	3,221 ft	85.0 MPH	85 MPH	97.034569	70.952748	91.215973	85.0 MPH	85 MPH	8.00	85.0000
	Alignment 32B-45	0.6 miles	C	6,304 ft	119.0 MPH	85 MPH	118.7069	18.938665	118.7069	118.7 MPH	119 MPH	20.93	101.8534
	Alignment 32B-46	2.2 miles	S	0,000 ft	205.0 MPH	119 MPH	199.26456	0	164.84442	164.8 MPH	121 MPH	55.87	142.3343
	Alignment 32B-47	0.1 miles	C	18,000 ft	201.0 MPH	121 MPH	126.34876	115.4036	121.28481	121.3 MPH	116 MPH	3.46	118.7702
	Alignment 32B-48	0.6 miles	S	0,000 ft	205.0 MPH	116 MPH	142.59179	81.114626	116.31083	116.3 MPH	82 MPH	21.50	99.3080
	Alignment 32B-49	0.4 miles	C	3,000 ft	82.0 MPH	82 MPH	104.51329	50.249099	93.933562	82.0 MPH	82 MPH	15.90	82.0000
	Alignment 32B-50	0.4 miles	S	0,000 ft	205.0 MPH	82 MPH	106.53767	45.800932	95.063859	95.1 MPH	82 MPH	16.22	88.5319
	Alignment 32B-51	0.1 miles	C	3,000 ft	82.0 MPH	82 MPH	87.152215	76.501578	84.615331	82.0 MPH	82 MPH	3.30	82.0000
	Alignment 32B-52	1.8 miles	S	0,000 ft	205.0 MPH	82 MPH	166.32547	0	126.27186	126.3 MPH	65 MPH	65.53	99.2014
	Alignment 32B-53	0.3 miles	C	2,000 ft	65.0 MPH	65 MPH	88.69906	24.134554	77.757711	65.0 MPH	65 MPH	17.40	65.0000
	Alignment 32B-54	0.5 miles	S	0,000 ft	205.0 MPH	65 MPH	102.32686	0	102.32686	102.3 MPH	102 MPH	23.17	83.6634
	Alignment 32B-55	0.5 miles	C	7,000 ft	125.0 MPH	102 MPH	125.95893	71.245492	125.48038	125.0 MPH	125 MPH	14.67	114.1251
	Alignment 32B-56	0.5 miles	C	7,017 ft	125.0 MPH	125 MPH	147.59213	97.29627	136.76336	125.0 MPH	125 MPH	15.29	125.0000
	Alignment 32B-57	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.99431	48.496761	149.20299	149.2 MPH	125 MPH	30.05	137.1015
	Alignment 32B-58	0.8 miles	C	7,000 ft	125.0 MPH	125 MPH	158.48327	78.313819	142.72692	125.0 MPH	125 MPH	23.57	125.0000
	Alignment 32B-59	0.3 miles	S	0,000 ft	205.0 MPH	125 MPH	139.48574	108.59893	139.48574	139.5 MPH	139 MPH	8.99	132.2429
	Alignment 32B-60a	0.9 miles	C	18,017 ft	200.0 MPH	139 MPH	174.1741	92.606292	148.76259	148.8 MPH	118 MPH	24.86	135.8703
	Alignment 32B-60b	1.0 miles	S	0,000 ft	205.0 MPH	118 MPH	161.24217	42.999564	118.37237	118.4 MPH	45 MPH	45.79	81.8705
	Alignment 32B-61	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367477	0	61.463491	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 32B-62	0.3 miles	S	0,000 ft	205.0 MPH	45 MPH	72.205897	0	60.160999	60.2 MPH	45 MPH	18.83	52.5805
	Alignment 32B-63	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 32B-64	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 32B-65	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 32B-66	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 32B - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32B-5	0.2 miles	S	0,000 ft	311.0 MPH	0 MPH	76.533051	0	76.533051	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 32B-6	0.4 miles	C	2,250 ft	90.8 MPH	77 MPH	123.98414	0	108.66309	90.8 MPH	91 MPH	16.26	88.8928
	Alignment 32B-7	0.7 miles	S	0,000 ft	311.0 MPH	91 MPH	154.66644	0	126.76618	126.8 MPH	91 MPH	21.91	108.7439
	Alignment 32B-8	0.3 miles	C	2,243 ft	90.7 MPH	91 MPH	122.78268	69.718954	107.91943	90.7 MPH	91 MPH	11.50	90.6511
	Alignment 32B-9	0.4 miles	S	0,000 ft	311.0 MPH	91 MPH	130.4388	0	124.27513	124.3 MPH	118 MPH	12.19	109.6572
	Alignment 32B-10	0.3 miles	C	3,787 ft	117.8 MPH	118 MPH	146.12908	101.06074	132.71782	117.8 MPH	118 MPH	9.65	117.7894
	Alignment 32B-11	0.2 miles	S	0,000 ft	311.0 MPH	118 MPH	138.61273	106.11731	130.13106	130.1 MPH	121 MPH	6.51	124.6524
	Alignment 32B-12	0.4 miles	C	4,000 ft	121.1 MPH	121 MPH	153.55097	101.42435	138.2617	121.1 MPH	121 MPH	11.20	121.0566
	Alignment 32B-13	1.9 miles	S	0,000 ft	311.0 MPH	121 MPH	246.01691	0	207.56931	207.6 MPH	160 MPH	40.70	171.2330
	Alignment 32B-14	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	191.93555	142.00923	176.75545	160.1 MPH	160 MPH	10.62	160.1428
BECKLEY AVE.	Alignment 32B-15	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.15216	0	188.18752	188.2 MPH	135 MPH	24.58	166.0653
	Alignment 32B-16	0.1 miles	C	5,000 ft	135.3 MPH	135 MPH	143.49969	131.16928	139.48214	135.3 MPH	135 MPH	2.55	135.3454
	Alignment 32B-17	0.7 miles	S	0,000 ft	311.0 MPH	135 MPH	188.15531	99.779451	169.71067	169.7 MPH	149 MPH	16.74	155.0954
	Alignment 32B-18	0.4 miles	S	0,000 ft	311.0 MPH	149 MPH	176.57966	133.43802	156.8704	156.9 MPH	134 MPH	9.25	147.4852
	Alignment 32B-19	0.4 miles	C	4,923 ft	134.3 MPH	134 MPH	162.30529	118.1957	148.96186	134.3 MPH	134 MPH	9.40	134.2992
	Alignment 32B-20	1.2 miles	S	0,000 ft	311.0 MPH	134 MPH	214.10939	0	189.06157	189.1 MPH	160 MPH	25.43	166.1459
	Alignment 32B-21	0.2 miles	C	7,000 ft	160.1 MPH	160 MPH	172.00615	154.00307	166.18037	160.1 MPH	160 MPH	3.74	160.1428
	Alignment 32B-22	0.7 miles	S	0,000 ft	311.0 MPH	160 MPH	205.64151	132.28499	174.07872	174.1 MPH	135 MPH	16.01	157.9927
	Alignment 32B-23	0.3 miles	C	5,000 ft	135.3 MPH	135 MPH	159.00481	122.10447	147.64975	135.3 MPH	135 MPH	7.82	135.3454
	Alignment 32B-24	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	210.59794	0	173.17115	173.2 MPH	125 MPH	26.13	151.3608
	Alignment 32B-25	0.3 miles	C	5,000 ft	135.3 MPH	125 MPH	152.46458	109.06367	132.9388	132.9 MPH	110 MPH	9.38	123.3977
	Alignment 32B-26	0.3 miles	S	0,000 ft	311.0 MPH	110 MPH	137.40664	93.706925	117.62951	117.6 MPH	94 MPH	9.57	107.6660
	Alignment 32B-27	0.2 miles	C	2,400 ft	93.8 MPH	94 MPH	113.53977	82.381259	104.12516	93.8 MPH	94 MPH	6.64	93.7700
	Alignment 32B-28	1.0 miles	S	0,000 ft	311.0 MPH	94 MPH	181.56088	0	171.18714	171.2 MPH	160 MPH	26.88	136.6219
	Alignment 32B-29	0.4 miles	C	7,000 ft	160.1 MPH	160 MPH	189.6455	143.50734	175.51515	160.1 MPH	160 MPH	9.79	160.1428
	Alignment 32B-30	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	191.76062	142.12486	169.77056	169.8 MPH	144 MPH	10.61	159.2809
	Alignment 32B-31	0.1 miles	C	5,697 ft	144.5 MPH	144 MPH	153.84358	139.65456	149.23103	144.5 MPH	144 MPH	2.94	144.4713
	Alignment 32B-32	0.2 miles	S	0,000 ft	311.0 MPH	144 MPH	157.57041	137.60561	149.51494	149.5 MPH	141 MPH	4.12	145.9031
	Alignment 32B-34	0.5 miles	S	0,000 ft	311.0 MPH	141 MPH	180.64674	116.78585	152.53997	152.5 MPH	118 MPH	14.03	138.1122
	Alignment 32B-35	0.2 miles	C	3,795 ft	117.9 MPH	118 MPH	132.30809	110.18445	125.31774	117.9 MPH	118 MPH	4.64	117.9137
	Alignment 32B-37	0.1 miles	S	0,000 ft	311.0 MPH	118 MPH	131.23601	110.81026	131.23601	131.2 MPH	131 MPH	4.05	124.5749
	Alignment 32B-38	0.0 miles	C	7,000 ft	160.1 MPH	131 MPH	135.36286	129.1679	135.36286	135.4 MPH	135 MPH	1.25	133.2994
	Alignment 32B-39	0.1 miles	S	0,000 ft	311.0 MPH	135 MPH	146.25599	129.69772	140.90633	140.9 MPH	135 MPH	3.37	138.1302
	Alignment 32B-40	0.2 miles	C	5,000 ft	135.3 MPH	135 MPH	154.89213	124.66519	145.44749	135.3 MPH	135 MPH	6.37	135.3454
	Alignment 32B-41	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	212.28175	0	188.02827	188.0 MPH	160 MPH	24.48	165.9781
	Alignment 32B-42	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	192.31626	141.75689	176.96223	160.1 MPH	160 MPH	10.76	160.1428
	Alignment 32B-43	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	228.60261	0	178.96906	179.0 MPH	109 MPH	27.10	149.2382
	Alignment 32B-44	0.2 miles	C	3,221 ft	108.6 MPH	109 MPH	127.57823	98.030542	118.48397	108.6 MPH	109 MPH	6.26	108.6310
	Alignment 32B-45	0.6 miles	C	6,304 ft	152.0 MPH	109 MPH	160.71177	0	156.40345	152.0 MPH	152 MPH	15.90	134.0248
	Alignment 32B-46	2.2 miles	S	0,000 ft	311.0 MPH	152 MPH	274.63814	0	213.07523	213.1 MPH	124 MPH	45.64	174.2283
	Alignment 32B-47	0.1 miles	C	18,000 ft	256.8 MPH	124 MPH	134.4576	118.54531	126.96426	127.0 MPH	119 MPH	3.32	123.6602
	Alignment 32B-48	0.6 miles	S	0,000 ft	311.0 MPH	119 MPH	167.95593	85.349766	140.00039	140.0 MPH	105 MPH	17.07	125.0669
	Alignment 32B-49	0.4 miles	C	3,000 ft	104.8 MPH	105 MPH	139.8908	82.413559	123.61323	104.8 MPH	105 MPH	12.43	104.8381
	Alignment 32B-50	0.4 miles	S	0,000 ft	311.0 MPH	105 MPH	142.97651	79.779372	125.36607	125.4 MPH	105 MPH	12.48	115.1021
	Alignment 32B-51	0.1 miles	C	3,000 ft	104.8 MPH	105 MPH	113.01094	100.5958	109.00114	104.8 MPH	105 MPH	2.58	104.8381
	Alignment 32B-52	1.8 miles	S	0,000 ft	311.0 MPH	105 MPH	231.88527	0	174.78291	174.8 MPH	86 MPH	48.36	134.4195
	Alignment 32B-53	0.3 miles	C	2,000 ft	85.6 MPH	86 MPH	121.52716	0	105.10994	85.6 MPH	86 MPH	13.21	85.5999
	Alignment 32B-54	0.5 miles	S	0,000 ft	311.0 MPH	86 MPH	141.72929	0	141.72929	141.7 MPH	142 MPH	17.06	113.6646
	Alignment 32B-55	0.5 miles	C	7,000 ft	160.1 MPH	142 MPH	176.37644	121.21191	168.45529	160.1 MPH	160 MPH	10.78	155.3633
	Alignment 32B-56	0.5 miles	C	7,017 ft	160.3 MPH	160 MPH	195.51755	139.59686	178.79217	160.3 MPH	160 MPH	11.92	160.3310
	Alignment 32B-57	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	229.83126	0	198.0759	198.1 MPH	160 MPH	23.00	179.1564
	Alignment 32B-58	0.8 miles	C	7,000 ft	160.1 MPH	160 MPH	212.21996	127.0975	187.99339	160.1 MPH	160 MPH	18.40	160.1428
	Alignment 32B-59	0.3 miles	S	0,000 ft	311.0 MPH	160 MPH	182.9558	147.69715	170.93394	170.9 MPH	158 MPH	7.21	164.9543
	Alignment 32B-60a	0.9 miles	C	18,017 ft	256.9 MPH	158 MPH	217.23727	118.67457	175.48793	175.5 MPH	120 MPH	22.18	152.2971
	Alignment 32B-60b	1.0 miles	S	0,000 ft	311.0 MPH	120 MPH	197.65811	0	146.27517	146.3 MPH	61 MPH	33.89	110.5976
	Alignment 32B-61	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468893	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 32B-62	0.3 miles	S	0,000 ft	311.0 MPH	61 MPH	101.18532	0	83.37309	83.4 MPH	61 MPH	13.73	72.0737
	Alignment 32B-63	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 32B-64	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	72.000208	72.0 MPH	40 MPH	13.21	58.7087
	Alignment 32B-65	0.1 miles	C	1,000 ft	60.5 MPH	40 MPH	58.013423	0	45.549738	45.5 MPH	28 MPH	7.02	38.2164
	Alignment 32B-66	0.1 miles	S	0,000 ft	311.0 MPH	28 MPH	49.560003	0	35.044214	35.0 MPH	0 MPH	12.79	19.8652

Alignment 32B - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 32B-5	0.2 miles	S	0,000 ft	621.0 MPH	0 MPH	76.53305	0	76.53305	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 32B-6	0.4 miles	C	2,250 ft	123.4 MPH	77 MPH	123.9841	0	123.6825	123.4 MPH	123 MPH	14.42	100.2555
	Alignment 32B-7	0.7 miles	S	0,000 ft	621.0 MPH	123 MPH	175.7871	0	151.7834	151.8 MPH	123 MPH	17.32	137.5336
	Alignment 32B-8	0.3 miles	C	2,243 ft	123.2 MPH	123 MPH	148.4361	91.19949	136.3976	123.2 MPH	123 MPH	8.46	123.1881
	Alignment 32B-9	0.4 miles	S	0,000 ft	621.0 MPH	123 MPH	154.8288	79.86647	154.8288	154.8 MPH	155 MPH	9.62	139.0085
	Alignment 32B-10	0.3 miles	C	3,787 ft	160.1 MPH	155 MPH	177.3453	128.4235	168.9272	160.1 MPH	160 MPH	7.13	159.4819
	Alignment 32B-11	0.2 miles	S	0,000 ft	621.0 MPH	160 MPH	175.9563	142.4159	170.3278	170.3 MPH	165 MPH	4.89	166.0009
	Alignment 32B-12	0.4 miles	C	4,000 ft	164.5 MPH	165 MPH	189.6991	134.6823	177.5504	164.5 MPH	165 MPH	8.24	164.5069
	Alignment 32B-13	1.9 miles	S	0,000 ft	621.0 MPH	165 MPH	270.0595	0	245.2464	245.2 MPH	218 MPH	32.93	211.6468
	Alignment 32B-14	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.9772	190.1733	230.1221	217.6 MPH	218 MPH	7.82	217.6222
BECKLEY AVE.	Alignment 32B-15	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	272.4416	143.1588	232.4355	232.4 MPH	184 MPH	19.24	212.1214
	Alignment 32B-16	0.1 miles	C	5,000 ft	183.9 MPH	184 MPH	190.0051	177.6355	186.9894	183.9 MPH	184 MPH	1.88	183.9243
	Alignment 32B-17	0.7 miles	S	0,000 ft	621.0 MPH	184 MPH	225.6373	129.399	215.5658	215.6 MPH	205 MPH	12.83	202.3830
	Alignment 32B-18	0.4 miles	S	0,000 ft	621.0 MPH	205 MPH	225.8415	181.7846	205.3188	205.3 MPH	183 MPH	7.03	194.0657
	Alignment 32B-19	0.4 miles	C	4,923 ft	182.5 MPH	183 MPH	203.995	158.1154	193.5473	182.5 MPH	183 MPH	6.92	182.5026
	Alignment 32B-20	1.2 miles	S	0,000 ft	621.0 MPH	183 MPH	247.212	74.16631	232.8875	232.9 MPH	218 MPH	19.95	211.7782
	Alignment 32B-21	0.2 miles	C	7,000 ft	217.6 MPH	218 MPH	226.4946	208.3723	222.1027	217.6 MPH	218 MPH	2.75	217.6222
	Alignment 32B-22	0.7 miles	S	0,000 ft	621.0 MPH	218 MPH	252.9864	175.2618	221.1677	221.2 MPH	184 MPH	12.40	204.0106
	Alignment 32B-23	0.3 miles	C	5,000 ft	183.9 MPH	184 MPH	201.9711	163.9024	193.1586	183.9 MPH	184 MPH	5.75	183.9243
	Alignment 32B-24	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	244.6656	88.28951	212.2938	212.3 MPH	174 MPH	20.26	195.2586
	Alignment 32B-25	0.3 miles	C	5,000 ft	183.9 MPH	174 MPH	194.6701	150.5176	174.2089	174.2 MPH	151 MPH	7.12	162.7070
	Alignment 32B-26	0.3 miles	S	0,000 ft	621.0 MPH	151 MPH	171.993	126.5718	151.359	151.4 MPH	127 MPH	7.38	139.5670
	Alignment 32B-27	0.2 miles	C	2,400 ft	127.4 MPH	127 MPH	142.6043	110.1774	135.2285	127.4 MPH	127 MPH	4.89	127.4265
	Alignment 32B-28	1.0 miles	S	0,000 ft	621.0 MPH	127 MPH	201.02	0	201.02	201.0 MPH	201 MPH	22.37	164.2233
	Alignment 32B-29	0.4 miles	C	7,000 ft	217.6 MPH	201 MPH	225.2304	173.4628	221.459	217.6 MPH	218 MPH	7.40	211.9609
	Alignment 32B-30	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	241.8384	190.3497	220.2608	220.3 MPH	196 MPH	8.08	209.3506
	Alignment 32B-31	0.1 miles	C	5,697 ft	196.3 MPH	196 MPH	203.3217	189.0712	199.8543	196.3 MPH	196 MPH	2.16	196.3258
	Alignment 32B-32	0.2 miles	S	0,000 ft	621.0 MPH	196 MPH	206.156	185.9767	201.1421	201.1 MPH	196 MPH	3.03	198.6498
	Alignment 32B-34	0.5 miles	S	0,000 ft	621.0 MPH	196 MPH	226.204	160.1991	196.0151	196.0 MPH	160 MPH	10.88	178.1331
	Alignment 32B-35	0.2 miles	C	3,795 ft	160.2 MPH	160 MPH	171.1063	148.5725	165.7603	160.2 MPH	160 MPH	3.42	160.2360
	Alignment 32B-37	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	170.2786	149.5203	170.2786	170.3 MPH	170 MPH	3.05	165.2573
	Alignment 32B-38	0.0 miles	C	7,000 ft	217.6 MPH	170 MPH	173.4792	167.0168	173.4792	173.5 MPH	173 MPH	0.97	171.8789
	Alignment 32B-39	0.1 miles	S	0,000 ft	621.0 MPH	173 MPH	182.1064	164.3999	182.1064	182.1 MPH	182 MPH	2.62	177.7928
	Alignment 32B-40	0.2 miles	C	5,000 ft	183.9 MPH	182 MPH	197.0684	165.7997	190.6097	183.9 MPH	184 MPH	4.69	183.8172
	Alignment 32B-41	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	246.1165	84.16049	232.3066	232.3 MPH	218 MPH	19.17	212.0386
	Alignment 32B-42	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	242.2793	189.7883	230.281	217.6 MPH	218 MPH	7.92	217.6222
	Alignment 32B-43	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	271.9795	144.0347	218.8207	218.8 MPH	148 MPH	22.00	183.8005
	Alignment 32B-44	0.2 miles	C	3,221 ft	147.6 MPH	148 MPH	162.0729	131.5925	155.0157	147.6 MPH	148 MPH	4.61	147.6215
	Alignment 32B-45	0.6 miles	C	6,304 ft	206.5 MPH	148 MPH	189.2609	88.11652	189.2609	189.3 MPH	189 MPH	12.65	168.4412
	Alignment 32B-46	2.2 miles	S	0,000 ft	621.0 MPH	189 MPH	296.9006	0	250.014	250.0 MPH	192 MPH	36.09	220.3064
	Alignment 32B-47	0.1 miles	C	18,000 ft	349.0 MPH	192 MPH	198.9142	184.8274	192.0831	192.1 MPH	185 MPH	2.18	188.5822
	Alignment 32B-48	0.6 miles	S	0,000 ft	621.0 MPH	185 MPH	219.7116	142.0451	185.1622	185.2 MPH	142 MPH	13.02	163.8952
	Alignment 32B-49	0.4 miles	C	3,000 ft	142.5 MPH	142 MPH	169.9274	108.2519	156.7996	142.5 MPH	142 MPH	9.15	142.4672
	Alignment 32B-50	0.4 miles	S	0,000 ft	621.0 MPH	142 MPH	172.4765	104.1424	158.1851	158.2 MPH	142 MPH	9.55	150.3261
	Alignment 32B-51	0.1 miles	C	3,000 ft	142.5 MPH	142 MPH	148.5845	136.0751	145.558	142.5 MPH	142 MPH	1.90	142.4672
	Alignment 32B-52	1.8 miles	S	0,000 ft	621.0 MPH	142 MPH	251.1507	0	195.714	195.7 MPH	116 MPH	40.31	161.2665
	Alignment 32B-53	0.3 miles	C	2,000 ft	116.3 MPH	116 MPH	144.8198	78.03692	131.3469	116.3 MPH	116 MPH	9.72	116.3240
	Alignment 32B-54	0.5 miles	S	0,000 ft	621.0 MPH	116 MPH	162.1453	27.77443	162.1453	162.1 MPH	162 MPH	13.93	139.2346
	Alignment 32B-55	0.5 miles	C	7,000 ft	217.6 MPH	162 MPH	193.1646	123.5704	193.1646	193.2 MPH	193 MPH	9.43	177.6550
	Alignment 32B-56	0.5 miles	C	7,017 ft	217.9 MPH	193 MPH	223.3695	157.2615	220.6411	217.9 MPH	218 MPH	9.20	207.7911
	Alignment 32B-57	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	273.1067	142.6703	246.9278	246.9 MPH	218 MPH	17.73	232.3388
	Alignment 32B-58	0.8 miles	C	7,000 ft	217.6 MPH	218 MPH	258.3622	167.2358	238.8623	217.6 MPH	218 MPH	13.54	217.6222
	Alignment 32B-59	0.3 miles	S	0,000 ft	621.0 MPH	218 MPH	234.9181	198.8274	232.9673	233.0 MPH	231 MPH	5.26	226.0548
	Alignment 32B-60a	0.9 miles	C	18,017 ft	349.1 MPH	231 MPH	274.9346	176.4454	231.2121	231.2 MPH	177 MPH	16.54	204.2112
	Alignment 32B-60b	1.0 miles	S	0,000 ft	621.0 MPH	177 MPH	236.6384	81.6105	177.3062	177.3 MPH	83 MPH	28.77	130.2699
	Alignment 32B-61	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 32B-62	0.3 miles	S	0,000 ft	621.0 MPH	83 MPH	115.7221	19.05045	100.3923	100.4 MPH	82 MPH	10.82	91.4886
	Alignment 32B-63	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 32B-64	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
	Alignment 32B-65	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
	Alignment 32B-66	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

(Appendix C-10) Alignment 37

Alignment 37 - Includes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	32.2 ft/s² = 1 acceleration of gravity [g]
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 37-1	0.2 miles	S	0,000 ft	205.0 MPH	0 MPH	53.545121	0	53.545121	53.5 MPH	54 MPH	33.24	26.7726
	Alignment 37-2	0.4 miles	C	2,250 ft	71.0 MPH	54 MPH	86.743515	0	79.263603	71.0 MPH	71 MPH	21.70	66.6405
	Alignment 37-3	0.7 miles	S	0,000 ft	205.0 MPH	71 MPH	112.7626	0	95.466764	95.5 MPH	74 MPH	28.37	83.9871
	Alignment 37-4	0.3 miles	C	2,243 ft	74.2 MPH	74 MPH	94.176913	46.427505	84.798859	74.2 MPH	74 MPH	14.04	74.2456
	Alignment 37-5	0.4 miles	S	0,000 ft	205.0 MPH	74 MPH	99.087122	34.735375	95.609251	95.6 MPH	92 MPH	15.50	86.2104
	Alignment 37-6	0.3 miles	C	3,787 ft	92.0 MPH	92 MPH	110.11385	69.30324	101.46197	92.0 MPH	92 MPH	12.35	92.0000
BECKLEY AVE.	Alignment 37-7	0.4 miles	S	0,000 ft	205.0 MPH	92 MPH	113.73079	63.19263	97.917546	97.9 MPH	79 MPH	15.42	90.0076
	Alignment 37-8	0.5 miles	C	2,794 ft	79.0 MPH	79 MPH	111.86148	0	94.935219	79.0 MPH	74 MPH	24.73	78.7163
	Alignment 37-9	0.2 miles	C	2,243 ft	74.2 MPH	74 MPH	85.19573	61.37175	79.90843	74.2 MPH	74 MPH	7.30	74.2456
	Alignment 37-10	1.5 miles	S	0,000 ft	205.0 MPH	74 MPH	153.09517	0	119.32965	119.3 MPH	71 MPH	58.00	95.9480
	Alignment 37-11	0.4 miles	C	2,243 ft	71.0 MPH	71 MPH	99.952381	9.5666858	86.693363	71.0 MPH	71 MPH	21.64	71.0000
	Alignment 37-12	1.1 miles	S	0,000 ft	205.0 MPH	71 MPH	134.8743	0	121.29938	121.3 MPH	106 MPH	40.73	100.2312
	Alignment 37-13	0.1 miles	C	5,000 ft	106.0 MPH	106 MPH	111.12602	100.61316	108.59326	106.0 MPH	106 MPH	3.26	106.0000
	Alignment 37-14	0.7 miles	S	0,000 ft	205.0 MPH	106 MPH	139.9944	53.605669	132.23924	132.2 MPH	124 MPH	21.41	121.2703
	Alignment 37-15	0.4 miles	S	0,000 ft	205.0 MPH	124 MPH	140.61043	104.78886	124.08927	124.1 MPH	105 MPH	11.91	114.5889
	Alignment 37-16	0.4 miles	C	4,923 ft	105.0 MPH	105 MPH	122.84562	83.420348	114.27171	105.0 MPH	105 MPH	12.02	105.0000
	Alignment 37-17	1.2 miles	S	0,000 ft	205.0 MPH	105 MPH	156.9585	0	141.88194	141.9 MPH	125 MPH	33.38	126.5810
	Alignment 37-18	0.2 miles	C	7,000 ft	125.0 MPH	125 MPH	132.49066	117.03087	128.7998	125.0 MPH	125 MPH	4.79	125.0000
	Alignment 37-19	0.7 miles	S	0,000 ft	205.0 MPH	125 MPH	154.17977	86.478895	132.30155	132.3 MPH	106 MPH	20.86	121.2150
	Alignment 37-20	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	121.01599	88.471074	113.75603	106.0 MPH	106 MPH	9.98	106.0000
	Alignment 37-21	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	154.85119	0	132.69305	132.7 MPH	106 MPH	33.15	119.3465
	Alignment 37-22	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	122.33608	86.636508	108.23612	106.0 MPH	92 MPH	11.50	100.7083
	Alignment 37-23	0.3 miles	S	0,000 ft	205.0 MPH	92 MPH	108.54958	71.72857	92.498682	92.5 MPH	73 MPH	12.42	82.9862
	Alignment 37-24	0.2 miles	C	2,400 ft	73.0 MPH	73 MPH	85.645469	57.644199	79.574325	73.0 MPH	73 MPH	8.53	73.0000
	Alignment 37-25	1.0 miles	S	0,000 ft	205.0 MPH	73 MPH	130.99873	0	124.19676	124.2 MPH	117 MPH	36.25	101.3098
	Alignment 37-26	0.4 miles	C	7,000 ft	125.0 MPH	117 MPH	136.89545	92.938882	117.02428	117.0 MPH	93 MPH	14.93	105.0243
	Alignment 37-27	0.5 miles	S	0,000 ft	205.0 MPH	93 MPH	118.72339	56.592909	93.124225	93.1 MPH	57 MPH	22.51	75.1238
	Alignment 37-28	0.1 miles	C	5,697 ft	113.0 MPH	57 MPH	67.952601	43.364087	57.243148	57.2 MPH	44 MPH	8.37	50.7388
	Alignment 37-29	0.2 miles	S	0,000 ft	205.0 MPH	44 MPH	62.230614	0	44.003689	44.0 MPH	0 MPH	27.32	22.0037
	Alignment 37-30-Station	0.0 miles	S	0,000 ft	0.0 MPH	0 MPH						120.00	0.0000
	Alignment 37-31	0.5 miles	S	0,000 ft	205.0 MPH	0 MPH	79.006747	0	79.006747	79.0 MPH	79 MPH	49.05	39.5034
	Alignment 37-32	0.2 miles	C	3,795 ft	92.0 MPH	79 MPH	89.4712	66.925603	89.4712	89.5 MPH	89 MPH	6.50	84.2390
	Alignment 37-33	0.1 miles	S	0,000 ft	205.0 MPH	89 MPH	98.131674	79.877194	98.131674	98.1 MPH	98 MPH	5.38	93.8014
	Alignment 37-34	0.0 miles	C	7,000 ft	125.0 MPH	98 MPH	100.83832	95.348222	100.83832	100.8 MPH	101 MPH	1.68	99.4850
	Alignment 37-35	0.1 miles	S	0,000 ft	205.0 MPH	101 MPH	108.02765	93.095439	107.01863	107.0 MPH	106 MPH	4.47	104.2937
	Alignment 37-36	0.2 miles	C	5,000 ft	106.0 MPH	106 MPH	118.37636	91.973026	112.35872	106.0 MPH	106 MPH	8.13	106.0000
	Alignment 37-37	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	155.97253	0	141.33724	141.3 MPH	125 MPH	32.08	126.6721
	Alignment 37-38	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.51874	100.37079	135.6479	125.0 MPH	125 MPH	13.78	125.0000
	Alignment 37-39	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.26886	50.971089	133.93459	133.9 MPH	85 MPH	35.93	112.5552
	Alignment 37-40	0.2 miles	C	3,221 ft	85.0 MPH	85 MPH	97.034569	70.952748	91.215973	85.0 MPH	85 MPH	8.00	85.0000
	Alignment 37-41	0.6 miles	C	6,304 ft	119.0 MPH	85 MPH	118.7069	18.938665	118.7069	118.7 MPH	119 MPH	20.93	101.8534
	Alignment 37-42	2.2 miles	S	0,000 ft	205.0 MPH	119 MPH	199.26456	0	166.33004	166.3 MPH	125 MPH	55.23	143.9804
	Alignment 37-43	0.3 miles	C	7,000 ft	125.0 MPH	125 MPH	136.26917	112.60867	130.75605	125.0 MPH	125 MPH	7.31	125.0000
	Alignment 37-44	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	146.05334	99.591277	135.93487	135.9 MPH	125 MPH	13.58	130.4674
	Alignment 37-45	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.59777	101.69309	135.15457	125.0 MPH	125 MPH	13.12	125.0000
	Alignment 37-46	2.6 miles	S	0,000 ft	205.0 MPH	125 MPH	213.25437	0	170.98746	171.0 MPH	114 MPH	63.93	144.9500
	Alignment 37-47	0.3 miles	C	5,789 ft	114.0 MPH	114 MPH	130.39802	94.80694	122.47376	114.0 MPH	114 MPH	10.91	114.0000
	Alignment 37-48	1.6 miles	S	0,000 ft	205.0 MPH	114 MPH	178.83784	0	148.83543	148.8 MPH	111 MPH	45.12	130.6368
	Alignment 37-49	0.4 miles	C	5,500 ft	111.0 MPH	111 MPH	131.01003	86.47758	121.41793	111.0 MPH	111 MPH	13.54	111.0000
	Alignment 37-50	1.4 miles	S	0,000 ft	205.0 MPH	111 MPH	168.42401	0	148.30989	148.3 MPH	125 MPH	37.64	132.3466
	Alignment 37-51	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	148.0687	96.569451	137.02069	125.0 MPH	125 MPH	15.64	125.0000
	Alignment 37-52	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	178.12284	0	129.90909	129.9 MPH	45 MPH	55.76	89.6408
	Alignment 37-53	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367472	0	61.463489	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 37-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	66.332014	0	56.678638	56.7 MPH	45 MPH	14.50	50.8393
	Alignment 37-55	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 37-56	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 37-57	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 37-58	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 37 - Includes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curvr	Min Angle	
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 37-1	0.2 miles	S	0,000 ft	311.0 MPH	0 MPH	76.533051	0	76.533051	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 37-2	0.4 miles	C	2,250 ft	90.8 MPH	77 MPH	123.98414	0	108.66309	90.8 MPH	91 MPH	16.26	88.8928
	Alignment 37-3	0.7 miles	S	0,000 ft	311.0 MPH	91 MPH	154.66644	0	126.76618	126.8 MPH	91 MPH	21.91	108.7439
	Alignment 37-4	0.3 miles	C	2,243 ft	90.7 MPH	91 MPH	122.78268	69.718954	107.91943	90.7 MPH	91 MPH	11.50	90.6511
	Alignment 37-5	0.4 miles	S	0,000 ft	311.0 MPH	91 MPH	130.4388	0	124.27513	124.3 MPH	118 MPH	12.19	109.6572
	Alignment 37-6	0.3 miles	C	3,787 ft	117.8 MPH	118 MPH	146.12908	101.06074	132.71782	117.8 MPH	118 MPH	9.65	117.7894
BECKLEY AVE.	Alignment 37-7	0.4 miles	S	0,000 ft	311.0 MPH	118 MPH	151.68304	96.972382	128.92643	128.9 MPH	101 MPH	11.82	117.4296
	Alignment 37-8	0.5 miles	C	2,794 ft	101.2 MPH	101 MPH	151.82122	0	125.0346	101.2 MPH	91 MPH	19.41	100.3077
	Alignment 37-9	0.2 miles	C	2,243 ft	90.7 MPH	91 MPH	108.55613	80.446945	100.00514	90.7 MPH	91 MPH	5.98	90.6511
	Alignment 37-10	1.5 miles	S	0,000 ft	311.0 MPH	91 MPH	211.75229	0	162.87519	162.9 MPH	91 MPH	43.90	126.7631
	Alignment 37-11	0.4 miles	C	2,243 ft	90.7 MPH	91 MPH	135.38527	0	115.21022	90.7 MPH	91 MPH	16.95	90.6511
	Alignment 37-12	1.1 miles	S	0,000 ft	311.0 MPH	91 MPH	187.3035	0	163.40284	163.4 MPH	135 MPH	30.64	133.2467
	Alignment 37-13	0.1 miles	C	5,000 ft	135.3 MPH	135 MPH	143.49969	131.16928	139.48214	135.3 MPH	135 MPH	2.55	135.3454
	Alignment 37-14	0.7 miles	S	0,000 ft	311.0 MPH	135 MPH	188.15531	99.779451	169.71067	169.7 MPH	149 MPH	16.74	155.0954
	Alignment 37-15	0.4 miles	S	0,000 ft	311.0 MPH	149 MPH	176.57966	133.43802	156.8704	156.9 MPH	134 MPH	9.25	147.4852
	Alignment 37-16	0.4 miles	C	4,923 ft	134.3 MPH	134 MPH	162.30529	118.1957	148.96186	134.3 MPH	134 MPH	9.40	134.2992
	Alignment 37-17	1.2 miles	S	0,000 ft	311.0 MPH	134 MPH	214.10939	0	189.06157	189.1 MPH	160 MPH	25.43	166.1459
	Alignment 37-18	0.2 miles	C	7,000 ft	160.1 MPH	160 MPH	172.00615	154.00307	166.18037	160.1 MPH	160 MPH	3.74	160.1428
	Alignment 37-19	0.7 miles	S	0,000 ft	311.0 MPH	160 MPH	205.64151	132.28499	174.07872	174.1 MPH	135 MPH	16.01	157.9927
	Alignment 37-20	0.3 miles	C	5,000 ft	135.3 MPH	135 MPH	159.00481	122.10447	147.64975	135.3 MPH	135 MPH	7.82	135.3454
	Alignment 37-21	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	210.59794	0	173.17115	173.2 MPH	125 MPH	26.13	151.3608
	Alignment 37-22	0.3 miles	C	5,000 ft	135.3 MPH	125 MPH	152.46458	109.06367	132.9388	132.9 MPH	110 MPH	9.38	123.3977
	Alignment 37-23	0.3 miles	S	0,000 ft	311.0 MPH	110 MPH	137.40664	93.706925	117.62951	117.6 MPH	94 MPH	9.57	107.6660
	Alignment 37-24	0.2 miles	C	2,400 ft	93.8 MPH	94 MPH	113.53977	82.381259	104.12516	93.8 MPH	94 MPH	6.64	93.7700
	Alignment 37-25	1.0 miles	S	0,000 ft	311.0 MPH	94 MPH	181.56088	0	156.26956	156.3 MPH	126 MPH	28.19	130.2779
	Alignment 37-26	0.4 miles	C	7,000 ft	160.1 MPH	126 MPH	161.85085	104.04151	136.41975	136.4 MPH	105 MPH	12.72	123.3248
	Alignment 37-27	0.5 miles	S	0,000 ft	311.0 MPH	105 MPH	148.83351	0	116.90897	116.9 MPH	72 MPH	17.27	97.9129
	Alignment 37-28	0.1 miles	C	5,697 ft	144.5 MPH	72 MPH	89.330256	61.769281	76.889189	76.9 MPH	62 MPH	6.01	70.6806
	Alignment 37-29	0.2 miles	S	0,000 ft	311.0 MPH	62 MPH	88.320339	0	62.451911	62.5 MPH	0 MPH	19.12	31.4487
	Alignment 37-30-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 37-31	0.5 miles	S	0,000 ft	311.0 MPH	0 MPH	112.92583	0	112.92583	112.9 MPH	113 MPH	34.32	56.4629
	Alignment 37-32	0.2 miles	C	3,795 ft	117.9 MPH	113 MPH	127.88287	104.82945	122.99934	117.9 MPH	118 MPH	4.67	117.1048
	Alignment 37-33	0.1 miles	S	0,000 ft	311.0 MPH	118 MPH	131.23601	110.81026	131.23601	131.2 MPH	131 MPH	4.05	124.5749
	Alignment 37-34	0.0 miles	C	7,000 ft	160.1 MPH	131 MPH	135.36286	129.1679	135.36286	135.4 MPH	135 MPH	1.25	133.2994
	Alignment 37-35	0.1 miles	S	0,000 ft	311.0 MPH	135 MPH	146.25599	129.69772	140.90633	140.9 MPH	135 MPH	3.37	138.1302
	Alignment 37-36	0.2 miles	C	5,000 ft	135.3 MPH	135 MPH	154.89213	124.66519	145.44749	135.3 MPH	135 MPH	6.37	135.3454
	Alignment 37-37	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	212.28175	0	188.02827	188.0 MPH	160 MPH	24.48	165.9781
	Alignment 37-38	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	192.31626	141.75689	176.96223	160.1 MPH	160 MPH	10.76	160.1428
	Alignment 37-39	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	228.60261	0	178.96906	179.0 MPH	109 MPH	27.10	149.2382
	Alignment 37-40	0.2 miles	C	3,221 ft	108.6 MPH	109 MPH	127.57823	98.030542	118.48397	108.6 MPH	109 MPH	6.26	108.6310
	Alignment 37-41	0.6 miles	C	6,304 ft	152.0 MPH	109 MPH	160.71177	0	156.40345	152.0 MPH	152 MPH	15.90	134.0248
	Alignment 37-42	2.2 miles	S	0,000 ft	311.0 MPH	152 MPH	274.63814	0	224.80194	224.8 MPH	160 MPH	41.78	190.3086
	Alignment 37-43	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	177.9347	150.66994	169.27268	160.1 MPH	160 MPH	5.71	160.1428
	Alignment 37-44	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	193.1424	141.20603	177.41154	177.4 MPH	160 MPH	10.50	168.7772
	Alignment 37-45	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	190.89183	142.6962	176.1894	160.1 MPH	160 MPH	10.24	160.1428
	Alignment 37-46	2.6 miles	S	0,000 ft	311.0 MPH	160 MPH	294.33451	0	232.20876	232.2 MPH	146 MPH	48.21	192.2166
	Alignment 37-47	0.3 miles	C	5,789 ft	145.6 MPH	146 MPH	171.45389	131.15398	159.0683	145.6 MPH	146 MPH	8.54	145.6331
	Alignment 37-48	1.6 miles	S	0,000 ft	311.0 MPH	146 MPH	244.94589	0	200.18579	200.2 MPH	142 MPH	34.28	171.9590
	Alignment 37-49	0.4 miles	C	5,500 ft	142.0 MPH	142 MPH	173.33051	123.72381	158.41981	142.0 MPH	142 MPH	10.59	141.9514
	Alignment 37-50	1.4 miles	S	0,000 ft	311.0 MPH	142 MPH	230.06673	0	198.21254	198.2 MPH	160 MPH	28.67	173.7528
	Alignment 37-51	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	196.25232	139.09126	179.10987	160.1 MPH	160 MPH	12.21	160.1428
	Alignment 37-52	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.95632	0	176.44685	176.4 MPH	61 MPH	40.03	124.8703
	Alignment 37-53	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468889	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 37-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	92.606729	0	78.229408	78.2 MPH	61 MPH	10.61	69.5014
	Alignment 37-55	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 37-56	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 37-57	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 37-58	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 37 - Includes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 37-1	0.2 miles	S	0,000 ft	621.0 MPH	0 MPH	76.53305	0	76.53305	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 37-2	0.4 miles	C	2,250 ft	123.4 MPH	77 MPH	123.9841	0	123.6825	123.4 MPH	123 MPH	14.42	100.2555
	Alignment 37-3	0.7 miles	S	0,000 ft	621.0 MPH	123 MPH	175.7871	0	151.7834	151.8 MPH	123 MPH	17.32	137.5336
	Alignment 37-4	0.3 miles	C	2,243 ft	123.2 MPH	123 MPH	148.4361	91.19949	136.3976	123.2 MPH	123 MPH	8.46	123.1881
	Alignment 37-5	0.4 miles	S	0,000 ft	621.0 MPH	123 MPH	154.8288	79.86647	154.8288	154.8 MPH	155 MPH	9.62	139.0085
	Alignment 37-6	0.3 miles	C	3,787 ft	160.1 MPH	155 MPH	177.3453	128.4235	168.9272	160.1 MPH	160 MPH	7.13	159.4819
BECKLEY AVE.	Alignment 37-7	0.4 miles	S	0,000 ft	621.0 MPH	160 MPH	186.4265	128.4058	163.7957	163.8 MPH	137 MPH	9.13	152.0437
	Alignment 37-8	0.5 miles	C	2,794 ft	137.5 MPH	137 MPH	178.0914	78.03716	153.1206	137.5 MPH	123 MPH	14.39	135.3289
	Alignment 37-9	0.2 miles	C	2,243 ft	123.2 MPH	123 MPH	136.9019	107.7427	130.2256	123.2 MPH	123 MPH	4.40	123.1881
	Alignment 37-10	1.5 miles	S	0,000 ft	621.0 MPH	123 MPH	227.5889	0	182.9918	183.0 MPH	123 MPH	36.35	153.0900
	Alignment 37-11	0.4 miles	C	2,243 ft	123.2 MPH	123 MPH	159.0184	71.16012	142.236	123.2 MPH	123 MPH	12.47	123.1881
	Alignment 37-12	1.1 miles	S	0,000 ft	621.0 MPH	123 MPH	205.0373	0	194.7671	194.8 MPH	184 MPH	25.05	162.9726
	Alignment 37-13	0.1 miles	C	5,000 ft	183.9 MPH	184 MPH	190.0051	177.6355	186.9894	183.9 MPH	184 MPH	1.88	183.9243
	Alignment 37-14	0.7 miles	S	0,000 ft	621.0 MPH	184 MPH	225.6373	129.399	215.5658	215.6 MPH	205 MPH	12.83	202.3830
	Alignment 37-15	0.4 miles	S	0,000 ft	621.0 MPH	205 MPH	225.8415	181.7846	205.3188	205.3 MPH	183 MPH	7.03	194.0657
	Alignment 37-16	0.4 miles	C	4,923 ft	182.5 MPH	183 MPH	203.995	158.1154	193.5473	182.5 MPH	183 MPH	6.92	182.5026
	Alignment 37-17	1.2 miles	S	0,000 ft	621.0 MPH	183 MPH	247.212	74.16631	232.8875	232.9 MPH	218 MPH	19.95	211.7782
	Alignment 37-18	0.2 miles	C	7,000 ft	217.6 MPH	218 MPH	226.4946	208.3723	222.1027	217.6 MPH	218 MPH	2.75	217.6222
	Alignment 37-19	0.7 miles	S	0,000 ft	621.0 MPH	218 MPH	252.9864	175.2618	221.1677	221.2 MPH	184 MPH	12.40	204.0106
	Alignment 37-20	0.3 miles	C	5,000 ft	183.9 MPH	184 MPH	201.9711	163.9024	193.1586	183.9 MPH	184 MPH	5.75	183.9243
	Alignment 37-21	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	244.6656	88.28951	212.2938	212.3 MPH	174 MPH	20.26	195.2586
	Alignment 37-22	0.3 miles	C	5,000 ft	183.9 MPH	174 MPH	194.6701	150.5176	174.2089	174.2 MPH	151 MPH	7.12	162.7070
	Alignment 37-23	0.3 miles	S	0,000 ft	621.0 MPH	151 MPH	171.993	126.5718	151.359	151.4 MPH	127 MPH	7.38	139.5670
	Alignment 37-24	0.2 miles	C	2,400 ft	127.4 MPH	127 MPH	142.6043	110.1774	135.2285	127.4 MPH	127 MPH	4.89	127.4265
	Alignment 37-25	1.0 miles	S	0,000 ft	621.0 MPH	127 MPH	201.02	0	184.3435	184.3 MPH	166 MPH	22.87	160.5858
	Alignment 37-26	0.4 miles	C	7,000 ft	217.6 MPH	166 MPH	194.6168	131.2871	166.2824	166.3 MPH	132 MPH	10.50	149.2801
	Alignment 37-27	0.5 miles	S	0,000 ft	621.0 MPH	132 MPH	168.9687	79.35733	132.498	132.5 MPH	81 MPH	15.80	106.9932
	Alignment 37-28	0.1 miles	C	5,697 ft	196.3 MPH	81 MPH	96.73104	61.36045	81.24314	81.2 MPH	62 MPH	5.92	71.7401
	Alignment 37-29	0.2 miles	S	0,000 ft	621.0 MPH	62 MPH	88.32034	0	62.45191	62.5 MPH	0 MPH	19.12	31.4487
	Alignment 37-30-Station	0.0 miles	S	0,000 ft	0 MPH	0 MPH						120.00	0.0000
	Alignment 37-31	0.5 miles	S	0,000 ft	621.0 MPH	0 MPH	112.9258	0	112.9258	112.9 MPH	113 MPH	34.32	56.4629
	Alignment 37-32	0.2 miles	C	3,795 ft	160.2 MPH	113 MPH	127.8829	95.65803	127.8829	127.9 MPH	128 MPH	4.55	120.4044
	Alignment 37-33	0.1 miles	S	0,000 ft	621.0 MPH	128 MPH	140.2615	114.17	140.2615	140.3 MPH	140 MPH	3.76	134.0722
	Alignment 37-34	0.0 miles	C	7,000 ft	217.6 MPH	140 MPH	144.1301	136.283	144.1301	144.1 MPH	144 MPH	1.18	142.1958
	Alignment 37-35	0.1 miles	S	0,000 ft	621.0 MPH	144 MPH	154.406	133.0631	154.406	154.4 MPH	154 MPH	3.12	149.2680
	Alignment 37-36	0.2 miles	C	5,000 ft	183.9 MPH	154 MPH	171.7976	134.7887	171.7976	171.8 MPH	172 MPH	5.29	163.1018
	Alignment 37-37	1.1 miles	S	0,000 ft	621.0 MPH	172 MPH	237.191	52.6235	227.617	227.6 MPH	218 MPH	20.00	203.1868
	Alignment 37-38	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	242.2793	189.7883	230.281	217.6 MPH	218 MPH	7.92	217.6222
	Alignment 37-39	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	271.9795	144.0347	218.8207	218.8 MPH	148 MPH	22.00	183.8005
	Alignment 37-40	0.2 miles	C	3,221 ft	147.6 MPH	148 MPH	162.0729	131.5925	155.0157	147.6 MPH	148 MPH	4.61	147.6215
	Alignment 37-41	0.6 miles	C	6,304 ft	206.5 MPH	148 MPH	189.2609	88.11652	189.2609	189.3 MPH	189 MPH	12.65	168.4412
	Alignment 37-42	2.2 miles	S	0,000 ft	621.0 MPH	189 MPH	296.9006	0	260.2973	260.3 MPH	218 MPH	34.56	230.1010
	Alignment 37-43	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	231.0291	203.3332	224.4258	217.6 MPH	218 MPH	4.20	217.6222
	Alignment 37-44	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	242.9356	188.9475	230.6264	230.6 MPH	218 MPH	7.90	224.1243
	Alignment 37-45	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.1501	191.2209	229.6876	217.6 MPH	218 MPH	7.54	217.6222
	Alignment 37-46	2.6 miles	S	0,000 ft	621.0 MPH	218 MPH	329.1603	0	271.5812	271.6 MPH	198 MPH	38.79	238.9108
	Alignment 37-47	0.3 miles	C	5,789 ft	197.9 MPH	198 MPH	217.609	176.008	207.9903	197.9 MPH	198 MPH	6.29	197.9046
	Alignment 37-48	1.6 miles	S	0,000 ft	621.0 MPH	198 MPH	279.2055	19.41037	239.9653	240.0 MPH	193 MPH	27.09	217.6140
	Alignment 37-49	0.4 miles	C	5,500 ft	192.9 MPH	193 MPH	217.0351	165.2807	205.3232	192.9 MPH	193 MPH	7.79	192.9015
	Alignment 37-50	1.4 miles	S	0,000 ft	621.0 MPH	193 MPH	264.559	66.56188	242.2301	242.2 MPH	218 MPH	22.47	221.6796
	Alignment 37-51	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	245.4153	185.7153	223.4163	217.6 MPH	199 MPH	9.23	211.9118
	Alignment 37-52	1.4 miles	S	0,000 ft	621.0 MPH	199 MPH	269.2548	81.8771	199.2177	199.2 MPH	83 MPH	35.41	141.1820
	Alignment 37-53	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 37-54	0.2 miles	S	0,000 ft	621.0 MPH	83 MPH	108.3012	45.00426	96.16334	96.2 MPH	82 MPH	8.25	89.3731
	Alignment 37-55	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 37-56	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
	Alignment 37-57	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
	Alignment 37-58	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438

Alignment 37 - Excludes Mid-Point Station

Technology
High Speed Rail

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
1.611 mph/s	2 mph	205 mph	17,100 ft	9.33 deg	
5798 mphph	5798 mphph	301 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 37-1	0.2 miles	S	0,000 ft	205.0 MPH	0 MPH	53.545121	0	53.545121	53.5 MPH	54 MPH	33.24	26.7726
	Alignment 37-2	0.4 miles	C	2,250 ft	71.0 MPH	54 MPH	86.743515	0	79.263603	71.0 MPH	71 MPH	21.70	66.6405
	Alignment 37-3	0.7 miles	S	0,000 ft	205.0 MPH	71 MPH	112.7626	0	95.466764	95.5 MPH	74 MPH	28.37	83.9871
	Alignment 37-4	0.3 miles	C	2,243 ft	74.2 MPH	74 MPH	94.176913	46.427505	84.798859	74.2 MPH	74 MPH	14.04	74.2456
	Alignment 37-5	0.4 miles	S	0,000 ft	205.0 MPH	74 MPH	99.087122	34.735375	95.609251	95.6 MPH	92 MPH	15.50	86.2104
	Alignment 37-6	0.3 miles	C	3,787 ft	92.0 MPH	92 MPH	110.11385	69.30324	101.46197	92.0 MPH	92 MPH	12.35	92.0000
BECKLEY AVE.	Alignment 37-7	0.4 miles	S	0,000 ft	205.0 MPH	92 MPH	113.73079	63.19263	97.917546	97.9 MPH	79 MPH	15.42	90.0076
	Alignment 37-8	0.5 miles	C	2,794 ft	79.0 MPH	79 MPH	111.86148	0	94.935219	79.0 MPH	74 MPH	24.73	78.7163
	Alignment 37-9	0.2 miles	C	2,243 ft	74.2 MPH	74 MPH	85.19573	61.37175	79.90843	74.2 MPH	74 MPH	7.30	74.2456
	Alignment 37-10	1.5 miles	S	0,000 ft	205.0 MPH	74 MPH	153.09517	0	119.32965	119.3 MPH	71 MPH	58.00	95.9480
	Alignment 37-11	0.4 miles	C	2,243 ft	71.0 MPH	71 MPH	99.952381	9.5666858	86.693363	71.0 MPH	71 MPH	21.64	71.0000
	Alignment 37-12	1.1 miles	S	0,000 ft	205.0 MPH	71 MPH	134.8743	0	121.29938	121.3 MPH	106 MPH	40.73	100.2312
	Alignment 37-13	0.1 miles	C	5,000 ft	106.0 MPH	106 MPH	111.12602	100.61316	108.59326	106.0 MPH	106 MPH	3.26	106.0000
	Alignment 37-14	0.7 miles	S	0,000 ft	205.0 MPH	106 MPH	139.9944	53.605669	132.23924	132.2 MPH	124 MPH	21.41	121.2703
	Alignment 37-15	0.4 miles	S	0,000 ft	205.0 MPH	124 MPH	140.61043	104.78886	124.08927	124.1 MPH	105 MPH	11.91	114.5889
	Alignment 37-16	0.4 miles	C	4,923 ft	105.0 MPH	105 MPH	122.84562	83.420348	114.27171	105.0 MPH	105 MPH	12.02	105.0000
	Alignment 37-17	1.2 miles	S	0,000 ft	205.0 MPH	105 MPH	156.9585	0	141.88194	141.9 MPH	125 MPH	33.38	126.5810
	Alignment 37-18	0.2 miles	C	7,000 ft	125.0 MPH	125 MPH	132.49066	117.03087	128.7998	125.0 MPH	125 MPH	4.79	125.0000
	Alignment 37-19	0.7 miles	S	0,000 ft	205.0 MPH	125 MPH	154.17977	86.478895	132.30155	132.3 MPH	106 MPH	20.86	121.2150
	Alignment 37-20	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	121.01599	88.471074	113.75603	106.0 MPH	106 MPH	9.98	106.0000
	Alignment 37-21	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	154.85119	0	132.69305	132.7 MPH	106 MPH	33.15	119.3465
	Alignment 37-22	0.3 miles	C	5,000 ft	106.0 MPH	106 MPH	122.33608	86.636508	108.23612	106.0 MPH	92 MPH	11.50	100.7083
	Alignment 37-23	0.3 miles	S	0,000 ft	205.0 MPH	92 MPH	108.54958	71.72857	92.498682	92.5 MPH	73 MPH	12.42	82.9862
	Alignment 37-24	0.2 miles	C	2,400 ft	73.0 MPH	73 MPH	85.645469	57.644199	79.574325	73.0 MPH	73 MPH	8.53	73.0000
	Alignment 37-25	1.0 miles	S	0,000 ft	205.0 MPH	73 MPH	130.99873	0	128.0345	128.0 MPH	125 MPH	36.05	101.8759
	Alignment 37-26	0.4 miles	C	7,000 ft	125.0 MPH	125 MPH	143.79278	102.82819	134.72447	125.0 MPH	125 MPH	12.54	125.0000
	Alignment 37-27	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	145.15937	100.88983	130.07737	130.1 MPH	113 MPH	13.75	122.9137
	Alignment 37-28	0.1 miles	C	5,697 ft	113.0 MPH	113 MPH	118.90145	106.77286	115.98827	113.0 MPH	113 MPH	3.76	113.0000
	Alignment 37-29	0.2 miles	S	0,000 ft	205.0 MPH	113 MPH	121.26685	104.07858	121.1335	121.1 MPH	121 MPH	5.13	117.1313
	Alignment 37-31	0.5 miles	S	0,000 ft	205.0 MPH	121 MPH	144.50974	91.645698	121.13436	121.1 MPH	92 MPH	18.17	106.6337
	Alignment 37-32	0.2 miles	C	3,795 ft	92.0 MPH	92 MPH	101.12878	81.859455	96.672203	92.0 MPH	92 MPH	5.95	92.0000
	Alignment 37-33	0.1 miles	S	0,000 ft	205.0 MPH	92 MPH	100.44267	82.699881	100.44267	100.4 MPH	100 MPH	5.24	96.2213
	Alignment 37-34	0.0 miles	C	7,000 ft	125.0 MPH	100 MPH	103.08866	97.725062	103.08866	103.1 MPH	103 MPH	1.64	101.7657
	Alignment 37-35	0.1 miles	S	0,000 ft	205.0 MPH	103 MPH	110.13119	95.528347	108.08533	108.1 MPH	106 MPH	4.40	106.0156
	Alignment 37-36	0.2 miles	C	5,000 ft	106.0 MPH	106 MPH	118.37636	91.973026	112.35872	106.0 MPH	106 MPH	8.13	106.0000
	Alignment 37-37	1.1 miles	S	0,000 ft	205.0 MPH	106 MPH	155.97253	0	141.33724	141.3 MPH	125 MPH	32.08	126.6721
	Alignment 37-38	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	145.51874	100.37079	135.6479	125.0 MPH	125 MPH	13.78	125.0000
	Alignment 37-39	1.1 miles	S	0,000 ft	205.0 MPH	125 MPH	169.26886	50.971089	133.93459	133.9 MPH	85 MPH	35.93	112.5552
	Alignment 37-40	0.2 miles	C	3,221 ft	85.0 MPH	85 MPH	97.034569	70.952748	91.215973	85.0 MPH	85 MPH	8.00	85.0000
	Alignment 37-41	0.6 miles	C	6,304 ft	119.0 MPH	85 MPH	118.7069	18.938665	118.7069	118.7 MPH	119 MPH	20.93	101.8534
	Alignment 37-42	2.2 miles	S	0,000 ft	205.0 MPH	119 MPH	199.26456	0	166.33004	166.3 MPH	125 MPH	55.23	143.9804
	Alignment 37-43	0.3 miles	C	7,000 ft	125.0 MPH	125 MPH	136.26917	112.60867	130.75605	125.0 MPH	125 MPH	7.31	125.0000
	Alignment 37-44	0.5 miles	S	0,000 ft	205.0 MPH	125 MPH	146.05334	99.591277	135.93487	135.9 MPH	125 MPH	13.58	130.4674
	Alignment 37-45	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	144.59777	101.69309	135.15457	125.0 MPH	125 MPH	13.12	125.0000
	Alignment 37-46	2.6 miles	S	0,000 ft	205.0 MPH	125 MPH	213.25437	0	170.98746	171.0 MPH	114 MPH	63.93	144.9500
	Alignment 37-47	0.3 miles	C	5,789 ft	114.0 MPH	114 MPH	130.39802	94.80694	122.47376	114.0 MPH	114 MPH	10.91	114.0000
	Alignment 37-48	1.6 miles	S	0,000 ft	205.0 MPH	114 MPH	178.83784	0	148.83543	148.8 MPH	111 MPH	45.12	130.6368
	Alignment 37-49	0.4 miles	C	5,500 ft	111.0 MPH	111 MPH	131.01003	86.47758	121.41793	111.0 MPH	111 MPH	13.54	111.0000
	Alignment 37-50	1.4 miles	S	0,000 ft	205.0 MPH	111 MPH	168.42401	0	148.30989	148.3 MPH	125 MPH	37.64	132.3466
	Alignment 37-51	0.5 miles	C	7,000 ft	125.0 MPH	125 MPH	148.0687	96.569451	137.02069	125.0 MPH	125 MPH	15.64	125.0000
	Alignment 37-52	1.4 miles	S	0,000 ft	205.0 MPH	125 MPH	178.12284	0	129.90909	129.9 MPH	45 MPH	55.76	89.6408
	Alignment 37-53	0.3 miles	C	1,017 ft	45.0 MPH	45 MPH	74.367472	0	61.463489	45.0 MPH	45 MPH	24.18	45.0000
	Alignment 37-54	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	66.332014	0	56.678638	56.7 MPH	45 MPH	14.50	50.8393
	Alignment 37-55	0.1 miles	C	1,000 ft	45.0 MPH	45 MPH	60.972851	18.229411	53.584926	45.0 MPH	45 MPH	11.68	45.0000
	Alignment 37-56	0.2 miles	S	0,000 ft	205.0 MPH	45 MPH	67.257221	0	55.333235	55.3 MPH	40 MPH	15.94	48.6731
	Alignment 37-57	0.1 miles	C	1,000 ft	45.0 MPH	40 MPH	49.640896	27.125292	40.300239	40.3 MPH	28 MPH	7.82	34.2931
	Alignment 37-58	0.1 miles	S	0,000 ft	205.0 MPH	28 MPH	40.031466	0	28.306521	28.3 MPH	0 MPH	17.76	14.3032

Alignment 37 - Excludes Mid-Point Station

Technology
Maglev

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	= 1 acceleration of gravity [g]
3.291 mph/s	3 mph	311 mph	26,400 ft	13.76 deg	
11846 mphph	11846 mphph	456 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (i)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	(Straight/Curve)	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 37-1	0.2 miles	S	0,000 ft	311.0 MPH	0 MPH	76.533051	0	76.533051	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 37-2	0.4 miles	C	2,250 ft	90.8 MPH	77 MPH	123.98414	0	108.66309	90.8 MPH	91 MPH	16.26	88.8928
	Alignment 37-3	0.7 miles	S	0,000 ft	311.0 MPH	91 MPH	154.66644	0	126.76618	126.8 MPH	91 MPH	21.91	108.7439
	Alignment 37-4	0.3 miles	C	2,243 ft	90.7 MPH	91 MPH	122.78268	69.718954	107.91943	90.7 MPH	91 MPH	11.50	90.6511
	Alignment 37-5	0.4 miles	S	0,000 ft	311.0 MPH	91 MPH	130.4388	0	124.27513	124.3 MPH	118 MPH	12.19	109.6572
	Alignment 37-6	0.3 miles	C	3,787 ft	117.8 MPH	118 MPH	146.12908	101.06074	132.71782	117.8 MPH	118 MPH	9.65	117.7894
BECKLEY AVE.	Alignment 37-7	0.4 miles	S	0,000 ft	311.0 MPH	118 MPH	151.68304	96.972382	128.92643	128.9 MPH	101 MPH	11.82	117.4296
	Alignment 37-8	0.5 miles	C	2,794 ft	101.2 MPH	101 MPH	151.82122	0	125.0346	101.2 MPH	91 MPH	19.41	100.3077
	Alignment 37-9	0.2 miles	C	2,243 ft	90.7 MPH	91 MPH	108.55613	80.446945	100.00514	90.7 MPH	91 MPH	5.98	90.6511
	Alignment 37-10	1.5 miles	S	0,000 ft	311.0 MPH	91 MPH	211.75229	0	162.87519	162.9 MPH	91 MPH	43.90	126.7631
	Alignment 37-11	0.4 miles	C	2,243 ft	90.7 MPH	91 MPH	135.38527	0	115.21022	90.7 MPH	91 MPH	16.95	90.6511
	Alignment 37-12	1.1 miles	S	0,000 ft	311.0 MPH	91 MPH	187.3035	0	163.40284	163.4 MPH	135 MPH	30.64	133.2467
	Alignment 37-13	0.1 miles	C	5,000 ft	135.3 MPH	135 MPH	143.49969	131.16928	139.48214	135.3 MPH	135 MPH	2.55	135.3454
	Alignment 37-14	0.7 miles	S	0,000 ft	311.0 MPH	135 MPH	188.15531	99.779451	169.71067	169.7 MPH	149 MPH	16.74	155.0954
	Alignment 37-15	0.4 miles	S	0,000 ft	311.0 MPH	149 MPH	176.57966	133.43802	156.8704	156.9 MPH	134 MPH	9.25	147.4852
	Alignment 37-16	0.4 miles	C	4,923 ft	134.3 MPH	134 MPH	162.30529	118.1957	148.96186	134.3 MPH	134 MPH	9.40	134.2992
	Alignment 37-17	1.2 miles	S	0,000 ft	311.0 MPH	134 MPH	214.10939	0	189.06157	189.1 MPH	160 MPH	25.43	166.1459
	Alignment 37-18	0.2 miles	C	7,000 ft	160.1 MPH	160 MPH	172.00615	154.00307	166.18037	160.1 MPH	160 MPH	3.74	160.1428
	Alignment 37-19	0.7 miles	S	0,000 ft	311.0 MPH	160 MPH	205.64151	132.28499	174.07872	174.1 MPH	135 MPH	16.01	157.9927
	Alignment 37-20	0.3 miles	C	5,000 ft	135.3 MPH	135 MPH	159.00481	122.10447	147.64975	135.3 MPH	135 MPH	7.82	135.3454
	Alignment 37-21	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	210.59794	0	173.17115	173.2 MPH	125 MPH	26.13	151.3608
	Alignment 37-22	0.3 miles	C	5,000 ft	135.3 MPH	125 MPH	152.46458	109.06367	132.9388	132.9 MPH	110 MPH	9.38	123.3977
	Alignment 37-23	0.3 miles	S	0,000 ft	311.0 MPH	110 MPH	137.40664	93.706925	117.62951	117.6 MPH	94 MPH	9.57	107.6660
	Alignment 37-24	0.2 miles	C	2,400 ft	93.8 MPH	94 MPH	113.53977	82.381259	104.12516	93.8 MPH	94 MPH	6.64	93.7700
	Alignment 37-25	1.0 miles	S	0,000 ft	311.0 MPH	94 MPH	181.56088	0	171.18714	171.2 MPH	160 MPH	26.88	136.6219
	Alignment 37-26	0.4 miles	C	7,000 ft	160.1 MPH	160 MPH	189.6455	143.50734	175.51515	160.1 MPH	160 MPH	9.79	160.1428
	Alignment 37-27	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	191.76062	142.12486	169.77056	169.8 MPH	144 MPH	10.61	159.2809
	Alignment 37-28	0.1 miles	C	5,697 ft	144.5 MPH	144 MPH	153.84358	139.65456	149.23103	144.5 MPH	144 MPH	2.94	144.4713
	Alignment 37-29	0.2 miles	S	0,000 ft	311.0 MPH	144 MPH	157.57041	137.60561	149.51494	149.5 MPH	141 MPH	4.12	145.9031
	Alignment 37-31	0.5 miles	S	0,000 ft	311.0 MPH	141 MPH	180.64674	116.78585	152.53997	152.5 MPH	118 MPH	14.03	138.1122
	Alignment 37-32	0.2 miles	C	3,795 ft	117.9 MPH	118 MPH	132.30809	110.18445	125.31774	117.9 MPH	118 MPH	4.64	117.9137
	Alignment 37-33	0.1 miles	S	0,000 ft	311.0 MPH	118 MPH	131.23601	110.81026	131.23601	131.2 MPH	131 MPH	4.05	124.5749
	Alignment 37-34	0.0 miles	C	7,000 ft	160.1 MPH	131 MPH	135.36286	129.1679	135.36286	135.4 MPH	135 MPH	1.25	133.2994
	Alignment 37-35	0.1 miles	S	0,000 ft	311.0 MPH	135 MPH	146.25599	129.69772	140.90633	140.9 MPH	135 MPH	3.37	138.1302
	Alignment 37-36	0.2 miles	C	5,000 ft	135.3 MPH	135 MPH	154.89213	124.66519	145.44749	135.3 MPH	135 MPH	6.37	135.3454
	Alignment 37-37	1.1 miles	S	0,000 ft	311.0 MPH	135 MPH	212.28175	0	188.02827	188.0 MPH	160 MPH	24.48	165.9781
	Alignment 37-38	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	192.31626	141.75689	176.96223	160.1 MPH	160 MPH	10.76	160.1428
	Alignment 37-39	1.1 miles	S	0,000 ft	311.0 MPH	160 MPH	228.60261	0	178.96906	179.0 MPH	109 MPH	27.10	149.2382
	Alignment 37-40	0.2 miles	C	3,221 ft	108.6 MPH	109 MPH	127.57823	98.030542	118.48397	108.6 MPH	109 MPH	6.26	108.6310
	Alignment 37-41	0.6 miles	C	6,304 ft	152.0 MPH	109 MPH	160.71177	0	156.40345	152.0 MPH	152 MPH	15.90	134.0248
	Alignment 37-42	2.2 miles	S	0,000 ft	311.0 MPH	152 MPH	274.63814	0	224.80194	224.8 MPH	160 MPH	41.78	190.3086
	Alignment 37-43	0.3 miles	C	7,000 ft	160.1 MPH	160 MPH	177.9347	150.66994	169.27268	160.1 MPH	160 MPH	5.71	160.1428
	Alignment 37-44	0.5 miles	S	0,000 ft	311.0 MPH	160 MPH	193.1424	141.20603	177.41154	177.4 MPH	160 MPH	10.50	168.7772
	Alignment 37-45	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	190.89183	142.6962	176.1894	160.1 MPH	160 MPH	10.24	160.1428
	Alignment 37-46	2.6 miles	S	0,000 ft	311.0 MPH	160 MPH	294.33451	0	232.20876	232.2 MPH	146 MPH	48.21	192.2166
	Alignment 37-47	0.3 miles	C	5,789 ft	145.6 MPH	146 MPH	171.45389	131.15398	159.0683	145.6 MPH	146 MPH	8.54	145.6331
	Alignment 37-48	1.6 miles	S	0,000 ft	311.0 MPH	146 MPH	244.94589	0	200.18579	200.2 MPH	142 MPH	34.28	171.9590
	Alignment 37-49	0.4 miles	C	5,500 ft	142.0 MPH	142 MPH	173.33051	123.72381	158.41981	142.0 MPH	142 MPH	10.59	141.9514
	Alignment 37-50	1.4 miles	S	0,000 ft	311.0 MPH	142 MPH	230.06673	0	198.21254	198.2 MPH	160 MPH	28.67	173.7528
	Alignment 37-51	0.5 miles	C	7,000 ft	160.1 MPH	160 MPH	196.25232	139.09126	179.10987	160.1 MPH	160 MPH	12.21	160.1428
	Alignment 37-52	1.4 miles	S	0,000 ft	311.0 MPH	160 MPH	241.95632	0	176.44685	176.4 MPH	61 MPH	40.03	124.8703
	Alignment 37-53	0.3 miles	C	1,017 ft	61.0 MPH	61 MPH	104.33474	0	85.468889	61.0 MPH	61 MPH	17.83	61.0256
	Alignment 37-54	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	92.606729	0	78.229408	78.2 MPH	61 MPH	10.61	69.5014
	Alignment 37-55	0.1 miles	C	1,000 ft	60.5 MPH	61 MPH	84.3905	44.395784	73.43511	60.5 MPH	61 MPH	8.68	60.5283
	Alignment 37-56	0.2 miles	S	0,000 ft	311.0 MPH	61 MPH	93.637919	0	74.729712	74.7 MPH	49 MPH	12.14	63.9149
	Alignment 37-57	0.1 miles	C	1,000 ft	60.5 MPH	49 MPH	64.548875	39.201805	53.69617	53.7 MPH	40 MPH	5.59	47.9971
	Alignment 37-58	0.1 miles	S	0,000 ft	311.0 MPH	40 MPH	57.203093	0	40.448695	40.4 MPH	0 MPH	12.43	20.4438

Alignment 37 - Excludes Mid-Point Station

Technology

Revised Hyperloop

Updates 12/11/2020

Acceleration	Deceleration	Max Speed	Min Horizl Curv	Min Angle	
3.291 mph/s	3 mph	621 mph	57,000 ft	24.34 deg	32.2 ft/s² = 1 acceleration of gravity [g]
11846 mphph	11846 mphph	911 fps			

	UID	Seg Dist.	Seg Type	Radius	Max Speed (phy)	Speed (l)	Max speed based on distance	Min speed based on distance	Max Speed (theo)	Max Speed (limiting)	Speed (f)	Total Segment Time	Avg. Speed
	Align # + Seg ID	(miles)	Straight/Curve	(ft)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(mph)	(sec)	(mph)
BEACH ST.	Alignment 37-1	0.2 miles	S	0,000 ft	621.0 MPH	0 MPH	76.53305	0	76.53305	76.5 MPH	77 MPH	23.26	38.2665
	Alignment 37-2	0.4 miles	C	2,250 ft	123.4 MPH	77 MPH	123.9841	0	123.6825	123.4 MPH	123 MPH	14.42	100.2555
	Alignment 37-3	0.7 miles	S	0,000 ft	621.0 MPH	123 MPH	175.7871	0	151.7834	151.8 MPH	123 MPH	17.32	137.5336
	Alignment 37-4	0.3 miles	C	2,243 ft	123.2 MPH	123 MPH	148.4361	91.19949	136.3976	123.2 MPH	123 MPH	8.46	123.1881
	Alignment 37-5	0.4 miles	S	0,000 ft	621.0 MPH	123 MPH	154.8288	79.86647	154.8288	154.8 MPH	155 MPH	9.62	139.0085
	Alignment 37-6	0.3 miles	C	3,787 ft	160.1 MPH	155 MPH	177.3453	128.4235	168.9272	160.1 MPH	160 MPH	7.13	159.4819
	Alignment 37-7	0.4 miles	S	0,000 ft	621.0 MPH	160 MPH	186.4265	128.4058	163.7957	163.8 MPH	137 MPH	9.13	152.0437
	Alignment 37-8	0.5 miles	C	2,794 ft	137.5 MPH	137 MPH	178.0914	78.03716	153.1206	137.5 MPH	123 MPH	14.39	135.3289
	Alignment 37-9	0.2 miles	C	2,243 ft	123.2 MPH	123 MPH	136.9019	107.7427	130.2256	123.2 MPH	123 MPH	4.40	123.1881
	Alignment 37-10	1.5 miles	S	0,000 ft	621.0 MPH	123 MPH	227.5889	0	182.9918	183.0 MPH	123 MPH	36.35	153.0900
	Alignment 37-11	0.4 miles	C	2,243 ft	123.2 MPH	123 MPH	159.0184	71.16012	142.236	123.2 MPH	123 MPH	12.47	123.1881
	Alignment 37-12	1.1 miles	S	0,000 ft	621.0 MPH	123 MPH	205.0373	0	194.7671	194.8 MPH	184 MPH	25.05	162.9726
	Alignment 37-13	0.1 miles	C	5,000 ft	183.9 MPH	184 MPH	190.0051	177.6355	186.9894	183.9 MPH	184 MPH	1.88	183.9243
	Alignment 37-14	0.7 miles	S	0,000 ft	621.0 MPH	184 MPH	225.6373	129.399	215.5658	215.6 MPH	205 MPH	12.83	202.3830
	Alignment 37-15	0.4 miles	S	0,000 ft	621.0 MPH	205 MPH	225.8415	181.7846	205.3188	205.3 MPH	183 MPH	7.03	194.0657
	Alignment 37-16	0.4 miles	C	4,923 ft	182.5 MPH	183 MPH	203.995	158.1154	193.5473	182.5 MPH	183 MPH	6.92	182.5026
	Alignment 37-17	1.2 miles	S	0,000 ft	621.0 MPH	183 MPH	247.212	74.16631	232.8875	232.9 MPH	218 MPH	19.95	211.7782
	Alignment 37-18	0.2 miles	C	7,000 ft	217.6 MPH	218 MPH	226.4946	208.3723	222.1027	217.6 MPH	218 MPH	2.75	217.6222
	Alignment 37-19	0.7 miles	S	0,000 ft	621.0 MPH	218 MPH	252.9864	175.2618	221.1677	221.2 MPH	184 MPH	12.40	204.0106
	Alignment 37-20	0.3 miles	C	5,000 ft	183.9 MPH	184 MPH	201.9711	163.9024	193.1586	183.9 MPH	184 MPH	5.75	183.9243
	Alignment 37-21	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	244.6656	88.28951	212.2938	212.3 MPH	174 MPH	20.26	195.2586
	Alignment 37-22	0.3 miles	C	5,000 ft	183.9 MPH	174 MPH	194.6701	150.5176	174.2089	174.2 MPH	151 MPH	7.12	162.7070
	Alignment 37-23	0.3 miles	S	0,000 ft	621.0 MPH	151 MPH	171.993	126.5718	151.359	151.4 MPH	127 MPH	7.38	139.5670
	Alignment 37-24	0.2 miles	C	2,400 ft	127.4 MPH	127 MPH	142.6043	110.1774	135.2285	127.4 MPH	127 MPH	4.89	127.4265
	Alignment 37-25	1.0 miles	S	0,000 ft	621.0 MPH	127 MPH	201.02	0	201.02	201.0 MPH	201 MPH	22.37	164.2233
	Alignment 37-26	0.4 miles	C	7,000 ft	217.6 MPH	201 MPH	225.2304	173.4628	221.459	217.6 MPH	218 MPH	7.40	211.9609
	Alignment 37-27	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	241.8384	190.3497	220.2608	220.3 MPH	196 MPH	8.08	209.3506
	Alignment 37-28	0.1 miles	C	5,697 ft	196.3 MPH	196 MPH	203.3217	189.0712	199.8543	196.3 MPH	196 MPH	2.16	196.3258
	Alignment 37-29	0.2 miles	S	0,000 ft	621.0 MPH	196 MPH	206.156	185.9767	201.1421	201.1 MPH	196 MPH	3.03	198.6498
	Alignment 37-31	0.5 miles	S	0,000 ft	621.0 MPH	196 MPH	226.204	160.1991	196.0151	196.0 MPH	160 MPH	10.88	178.1331
	Alignment 37-32	0.2 miles	C	3,795 ft	160.2 MPH	160 MPH	171.1063	148.5725	165.7603	160.2 MPH	160 MPH	3.42	160.2360
	Alignment 37-33	0.1 miles	S	0,000 ft	621.0 MPH	160 MPH	170.2786	149.5203	170.2786	170.3 MPH	170 MPH	3.05	165.2573
	Alignment 37-34	0.0 miles	C	7,000 ft	217.6 MPH	170 MPH	173.4792	167.0168	173.4792	173.5 MPH	173 MPH	0.97	171.8789
	Alignment 37-35	0.1 miles	S	0,000 ft	621.0 MPH	173 MPH	182.1064	164.3999	182.1064	182.1 MPH	182 MPH	2.62	177.7928
	Alignment 37-36	0.2 miles	C	5,000 ft	183.9 MPH	182 MPH	197.0684	165.7997	190.6097	183.9 MPH	184 MPH	4.69	183.8172
	Alignment 37-37	1.1 miles	S	0,000 ft	621.0 MPH	184 MPH	246.1165	84.16049	232.3066	232.3 MPH	218 MPH	19.17	212.0386
	Alignment 37-38	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	242.2793	189.7883	230.281	217.6 MPH	218 MPH	7.92	217.6222
	Alignment 37-39	1.1 miles	S	0,000 ft	621.0 MPH	218 MPH	271.9795	144.0347	218.8207	218.8 MPH	148 MPH	22.00	183.8005
	Alignment 37-40	0.2 miles	C	3,221 ft	147.6 MPH	148 MPH	162.0729	131.5925	155.0157	147.6 MPH	148 MPH	4.61	147.6215
	Alignment 37-41	0.6 miles	C	6,304 ft	206.5 MPH	148 MPH	189.2609	88.11652	189.2609	189.3 MPH	189 MPH	12.65	168.4412
	Alignment 37-42	2.2 miles	S	0,000 ft	621.0 MPH	189 MPH	296.9006	0	260.2973	260.3 MPH	218 MPH	34.56	230.1010
	Alignment 37-43	0.3 miles	C	7,000 ft	217.6 MPH	218 MPH	231.0291	203.3332	224.4258	217.6 MPH	218 MPH	4.20	217.6222
	Alignment 37-44	0.5 miles	S	0,000 ft	621.0 MPH	218 MPH	242.9356	188.9475	230.6264	230.6 MPH	218 MPH	7.90	224.1243
	Alignment 37-45	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	241.1501	191.2209	229.6876	217.6 MPH	218 MPH	7.54	217.6222
	Alignment 37-46	2.6 miles	S	0,000 ft	621.0 MPH	218 MPH	329.1603	0	271.5812	271.6 MPH	198 MPH	38.79	238.9108
	Alignment 37-47	0.3 miles	C	5,789 ft	197.9 MPH	198 MPH	217.609	176.008	207.9903	197.9 MPH	198 MPH	6.29	197.9046
	Alignment 37-48	1.6 miles	S	0,000 ft	621.0 MPH	198 MPH	279.2055	19.41037	239.9653	240.0 MPH	193 MPH	27.09	217.6140
	Alignment 37-49	0.4 miles	C	5,500 ft	192.9 MPH	193 MPH	217.0351	165.2807	205.3232	192.9 MPH	193 MPH	7.79	192.9015
	Alignment 37-50	1.4 miles	S	0,000 ft	621.0 MPH	193 MPH	264.559	66.56188	242.2301	242.2 MPH	218 MPH	22.47	221.6796
	Alignment 37-51	0.5 miles	C	7,000 ft	217.6 MPH	218 MPH	245.4153	185.7153	223.4163	217.6 MPH	199 MPH	9.23	211.9118
BECKLEY AVE.	Alignment 37-52	1.4 miles	S	0,000 ft	621.0 MPH	199 MPH	269.2548	81.8771	199.2177	199.2 MPH	83 MPH	35.41	141.1820
	Alignment 37-53	0.3 miles	C	1,017 ft	82.9 MPH	83 MPH	118.4858	0	102.2647	82.9 MPH	83 MPH	13.12	82.9293
	Alignment 37-54	0.2 miles	S	0,000 ft	621.0 MPH	83 MPH	108.3012	45.00426	96.16334	96.2 MPH	82 MPH	8.25	89.3731
	Alignment 37-55	0.1 miles	C	1,000 ft	82.3 MPH	82 MPH	101.1124	57.5113	92.16655	82.3 MPH	82 MPH	6.39	82.2535
	Alignment 37-56	0.2 miles	S	0,000 ft	621.0 MPH	82 MPH	108.9496	40.75839	87.27548	87.3 MPH	58 MPH	10.42	74.4134
	Alignment 37-57	0.1 miles	C	1,000 ft	82.3 MPH	58 MPH	71.62093	39.98053	58.00671	58.0 MPH	40 MPH	5.47	49.0067
	Alignment 37-58	0.1 miles	S	0,000 ft	621.0 MPH	40 MPH	57.20309	0	40.4487	40.4 MPH	0 MPH	12.43	20.4438