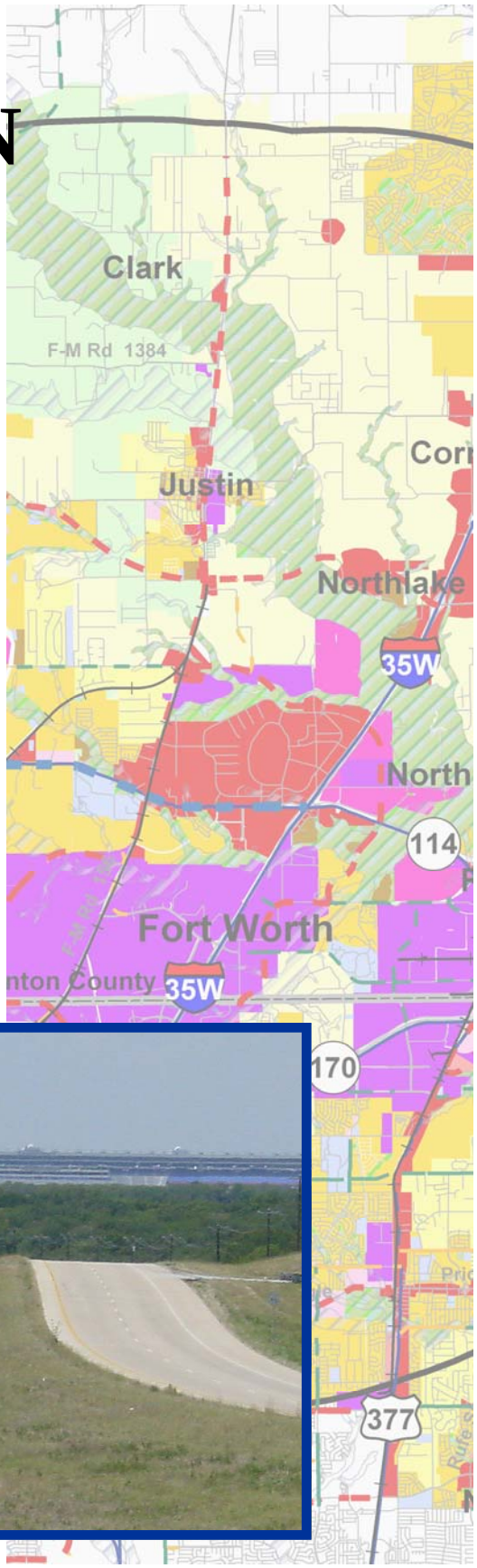
TRANSPORTATION

6



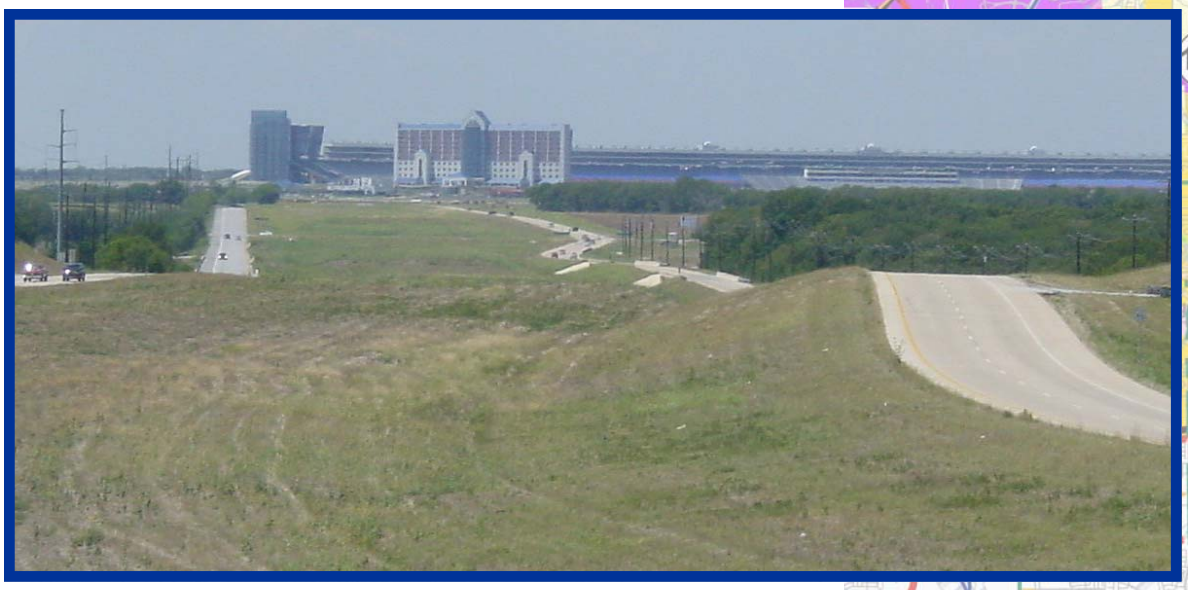


Figure 6.1 TMS has taken steps to improve the efficiency of loading and unloading the parking facility on race days.

TMS Transportation Plan Summary

The goal of the transportation study was to evaluate existing plans and to develop a revised Texas Motor Speedway Transportation Plan to serve anticipated future development within the Texas Motor Speedway area. The transportation plan was developed in conjunction with the City of Fort Worth Planning & Development Department, which developed a complementary land use plan for the study area and alternative population and employment projections intended to more accurately portray future development in the area compared to existing, outdated projections that were required to be used for modeling purposes. The new projections created by the City of Fort Worth showed approximately a 20% increase in population and a 5% increase in employment as compared to the existing regionally approved projections prepared from 2003 data (See Table 6.1).

The City of Fort Worth Transportation & Public Works Department retained Kimley-Horn and Associates, Inc., to develop the transportation plan. A primary task of the study was to analyze year 2015 and 2030 transportation demand, based on forecast modeling work completed by the North Central Texas Council of Governments. The purpose of the transportation analysis was to determine if the proposed transportation system would be adequate to serve the area's projected population and employment growth, including the additional growth projected by

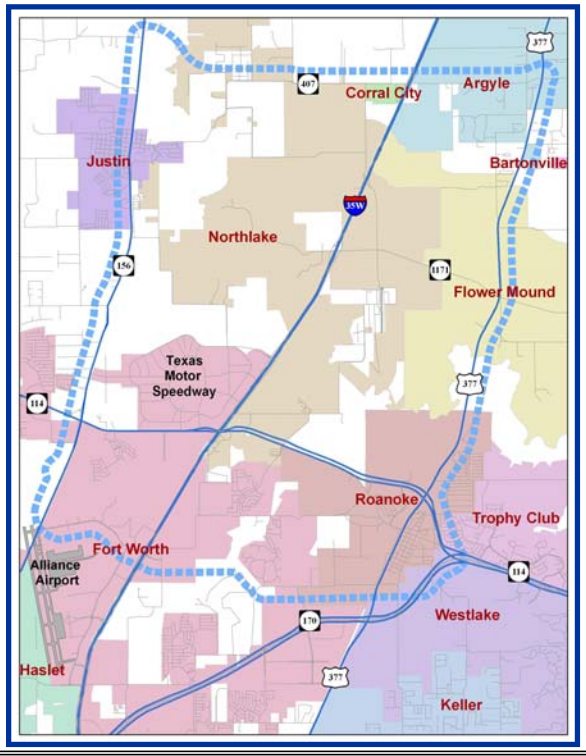


Figure 6.2 TMS Transportation Study Area

city staff. The study area defined for the transportation plan was FM 407 to the north, Eagle Parkway to the south, FM 156 to the west, and US 377 and the SH 114 / SH 170 interchange to the east (See Figure 6.2). The study area encompasses portions of nine different municipalities. This study was also intended to serve as an extension of the existing Mobility / Air Quality Plan (MAQ), the goal of which is to "develop a balanced, strategically sound, financially feasible, and environmentally responsible approach to providing a high degree of mobility for the residents of Fort Worth and surrounding communities." The TMS Plan incorporates appropriate features of the MAQ plan, but focuses on a specific geographic area. The challenges and goals of the transportation study are listed below.

Challenges

- What land use plan changes should be implemented to be compatible with the Texas Motor Speedway?
- How can a transportation plan be developed and implemented to support local circulation needs and regional transportation demands?

Goals

- Identify existing transportation system deficiencies.
- Identify anticipated transportation deficiencies (2015 & 2030 with alternative population and employment projections).
- Analyze the transportation system using basic measures of effectiveness.
- Develop a regionally consistent area master transportation plan in order to have continuity in the roadway network among governing municipalities.
- Generate a prioritization plan for transportation improvements.
- Create the framework for special event and daily commuter rail service to the area.

2015 and 2030 Transportation Modeling

The purpose of the 2015 and 2030 transportation modeling was to make planning level decisions regarding future transportation needs. This report analyzed six modeling runs. Three runs were conducted for an interim year 2015, with the remaining three runs for a horizon year of 2030. The interim year model runs helped to determine the immediate needs and assist in prioritizing the needed transportation projects. Models estimate the overall demand on a roadway system based on the proposed land uses. Level of Service (LOS) is a measure of effectiveness to forecast demand based on roadway capacity, as depicted in Figures 6.3 and 6.4. This allows transportation planners to answer questions

Comparison of Projections

	Population	Employment
Base 2007	143,119	45,896
NCTCOG 2015	207,488	123,627
CFW Alternative 2015	245,022	130,846
NCTCOG 2030	303,994	183,930
CFW Alternative 2030	364,658	192,770

Table 6.1 Comparison between NCTCOG regionally approved projections and TMS Study alternative projections.

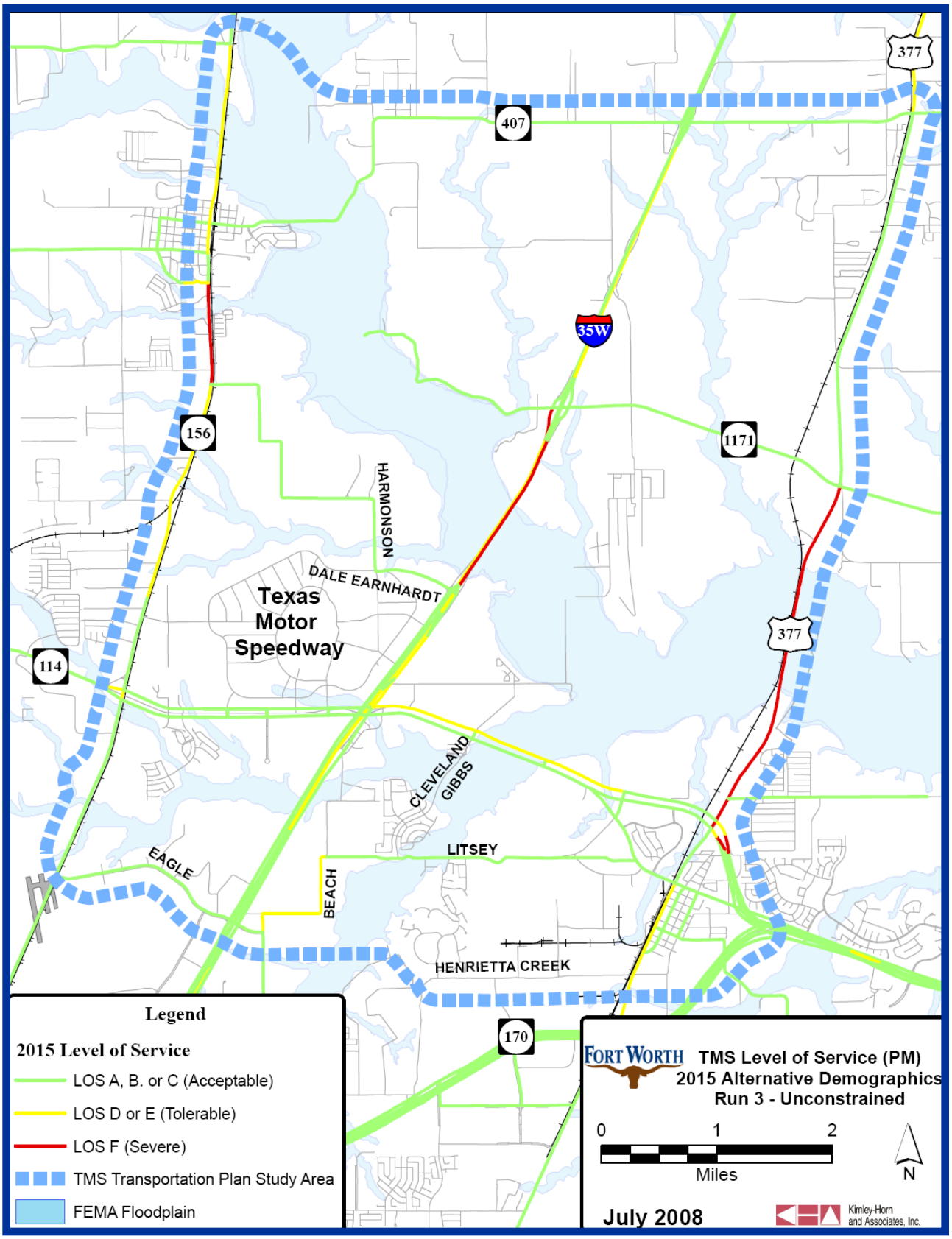


Figure 6.3 2015 Congestion Levels

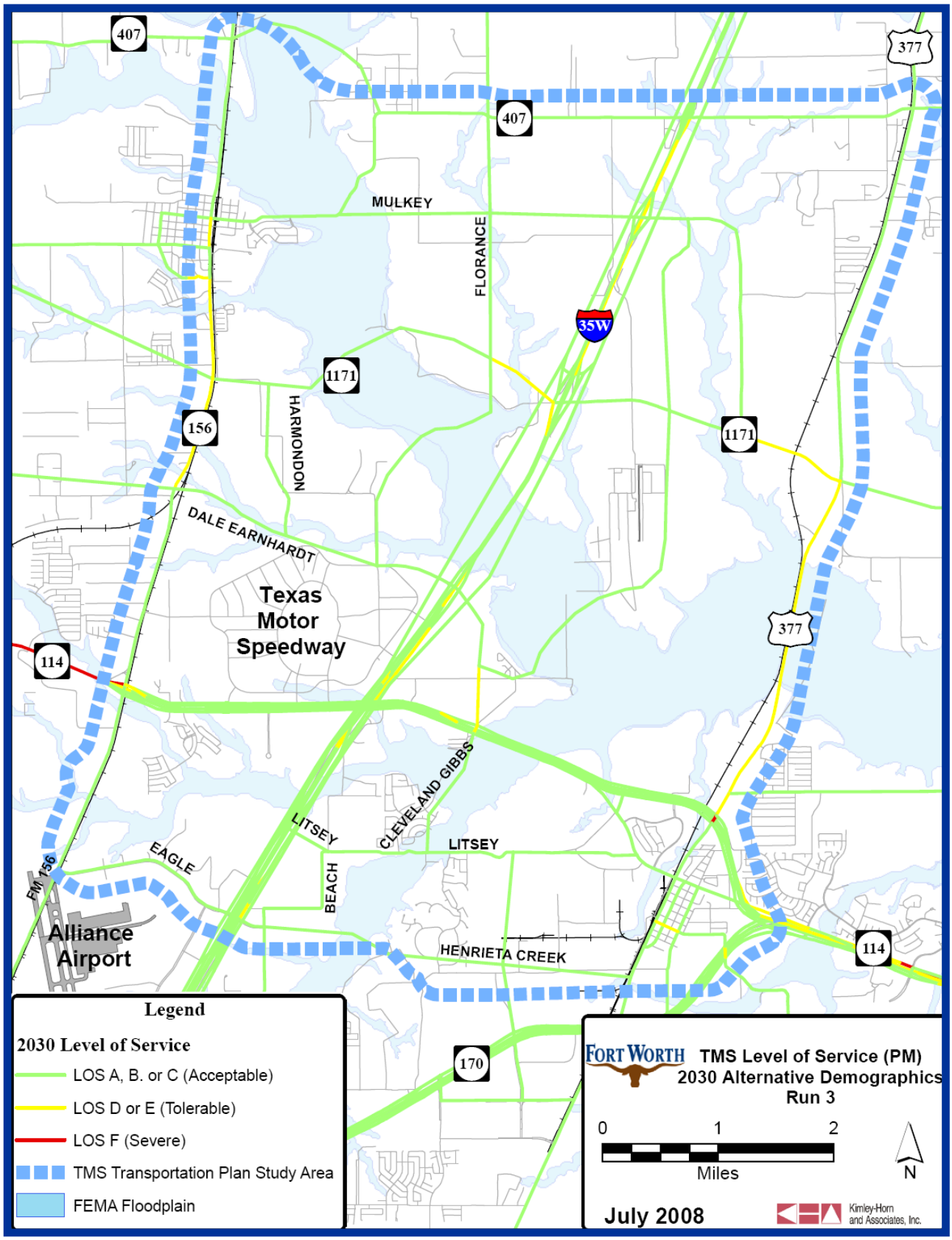


Figure 6.4 2030 Congestion Levels

Figure 6.5 TMS has more parking than Walt Disney World in Orlando, Florida.

such as the number of lanes required along a given roadway or the need for a new roadway or interchange.

In addition to transportation modeling, this study examined various horizontal alignments for a potential commuter rail line to serve the Texas Motor Speedway. The Regional Rail Corridor Study identified a special event line serving Texas Motor Speedway. This study is the first formal effort to determine the feasibility of this connection, with three different alignment options developed for future consideration.

This study also examined the various municipalities' Master Thoroughfare Plans to promote consistency between the plans. Also, a cursory review of the proposed SH 114 schematic west of IH-35W was performed.

Transportation findings and recommendations are provided for the following six categories: Land Use, Roadway, Transit, Thoroughfare Planning, SH 114 Schematic Review, and Stakeholder Involvement (Advisory Committee, Municipalities, and Public & Private Entities). A summary of these findings and recommendations follows.

Figure 6.6 Race day traffic on the TMS grounds.

Transportation Plan Findings and Recommendations

Growth:

- Within a six-mile radius of TMS, alternative demographics were developed by City of Fort Worth staff to more accurately project anticipated growth patterns. The demographics showed a 20% increase in population and a 5% increase in employment compared to the NCTCOG regionally approved demographics.
- Each local government within the TMS area should work with the NCTCOG during the ongoing 2040 Demographic Review to accurately reflect current and future demographics. Final approval of the new set of regional demographics is anticipated to be adopted in 2009.

Roadway:

- Under existing conditions, multiple roadways within the study area are operating at or above their capacity. SH 114 adjacent to the TMS and US 377 from FM 1171 to SH 114 are both over capacity. FM 156 from FM 407 to SH 114 and FM 1171 east of IH-35W also appear to be quickly approaching their capacities.
- The primary means for regional travel and connectivity is and will likely continue to be via the study area's TxDOT facilities. Nearly all of the existing and proposed City arterial facilities will serve local development and will likely only be constructed with adjacent development projects.
- The daily traffic volumes on IH-35W adjacent to the TMS are projected to approximately double between 2007 and 2015 (43,000 in 2007 and a projected 96,000 in 2015). IH-35W is projected to be significantly over capacity between Dale Earnhardt Lane and FM 1171.
- The daily traffic volumes on SH 114 adjacent to the TMS are projected to almost double between 2007 and 2015 (22,000 in 2007 and a projected 37,200 in 2015).
- FM 156 and US 377 are projected to be deficient in their current two-lane configurations in all 2015 model runs.
- Traffic along the SH 114 frontage roads between IH-35W and US 377 begins to experience an unacceptable level of service in 2015.
- Based on an "unconstrained" model run (which allows modeled vehicle trips to travel the route they wish to use regardless of the congestion level along the roadway), US 377 is clearly the preferred north-south route within the study area. When US 377 is widened from FM 1171 to SH 114, it

Figure 6.7 I-35W southbound traffic after a NASCAR Sprint Cup Series race at TMS.

Figure 6.8 The majority of parking at TMS is not hard surface.

Figure 6.9 Traffic congestion occurs before and after race events at TMS.

Transportation Plan Findings and Recommendations (cont.)

should be constructed as a six-lane divided facility. US 377 could also provide for an alternate route when IH-35W is under construction during its transformation into the North Tarrant Express.

- Based on 2030 model runs, build out of the planned roadway network is projected to adequately support the future land use plan within the transportation study area.
- Cleveland Gibbs Road and Dale Earnhardt Way appear to be a bypass route for motorists wishing to avoid the SH 114 and FM 156 interchange, traveling north via Dale Earnhardt to FM 156.
- Litsey Road and Henrietta Creek Road are projected to serve local trips and provide little relief to SH 114 or SH 170.
- Although not in the transportation study area, SH 114 west of FM 156 is projected to operate at an unacceptable level of service in all models, especially when using the alternative population and employment projections developed by the Fort Worth Planning and Development Department.
- The 2030 model runs assume US 377 between SH 114 and FM 1171 and FM 156 between SH 114 and Mulkey Lane will be four-lane facilities. As a result, these roadways begin to experience unacceptable level of service in 2030. When reconstructed, US 377 and FM 156 should be considered for construction to their ultimate six-lane divided section.
- In order to construct the proposed 2030 roadway network, the total cost of these improvements (excluding IH-35W and SH 114) is approximately $297 million (in 2008 dollars). Approximately half of these improvements are located along TxDOT facilities.
- Many of the planned non-TxDOT thoroughfare facilities have large flood plain crossings. These crossings will result in a significant increase in construction costs (to provide the same capacity) and are unlikely to be constructed by the development community.
- Recommended prioritization of roadway improvements in the TMS transportation study area are depicted in Figure 6.10.

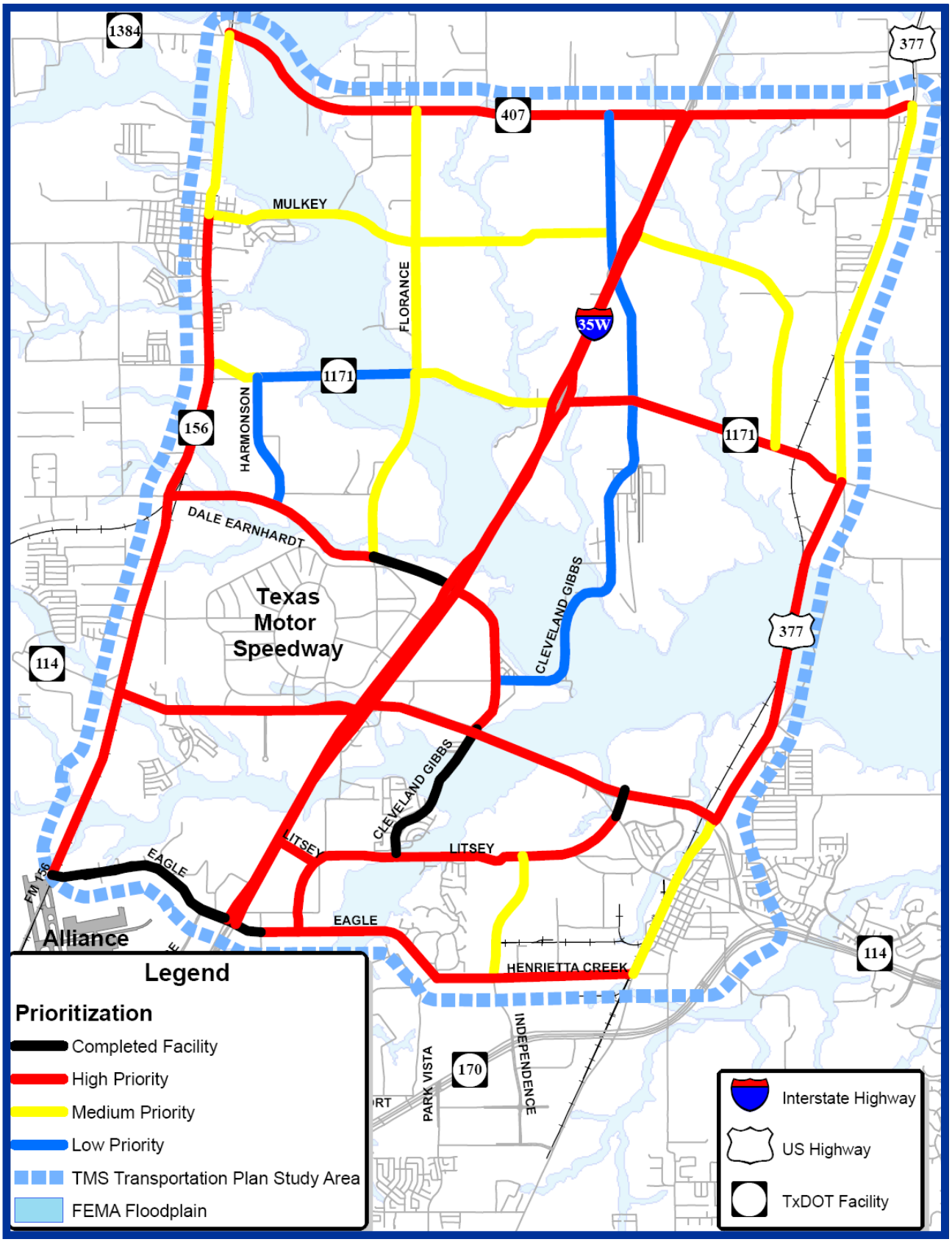


Figure 6.10 Prioritization of Roadway Improvements in the TMS Transportation Study Area.

Figure 6.11 SH 114 eastbound after a NASCAR Sprint Cup Series race at TMS.

Transportation Plan Findings and Recommendations (cont.)

Thoroughfare Planning:

- The Towns of Flower Mound and Northlake should coordinate with TxDOT to eliminate the inconsistencies between their respective thoroughfare plans at the future IH-35W crossing between FM 1171 and FM 407.
- The municipalities should continue to work together and coordinate their transportation planning efforts to develop consistent comprehensive and thoroughfare plans.
- Recommended modifications to adopted Master Thoroughfare Plans are depicted in Figure 6.12.

SH 114 Schematic Review:

- TxDOT should consider providing a dedicated eastbound right-turn lane on the SH 114 Eastbound Frontage Road at IH-35W.
- TxDOT should consider providing an additional future on-ramp from the eastbound frontage road to access the future eastbound SH 114 main lanes to better serve TMS, other adjacent existing and future development, and background traffic.

SH 114 Utility Relocation:

- Due to the visual impact that the SH 114 corridor will have on thousands of visitors per year as well as the economic impact to the area, all reasonable efforts should be made by utility providers to reduce the visual blight of overhead utilities by constructing underground lines when possible and when underground construction is not possible consolidating lines on shared overhead structures.*

** This recommendation was requested by advisory committee members after the TMS Area Master Plan was recommended for adoption to the Fort Worth City Council. The full advisory committee did review the recommendation by email communication prior to the TMS Area Master Plan adoption by the Fort Worth City Council on September 22nd, 2009.*

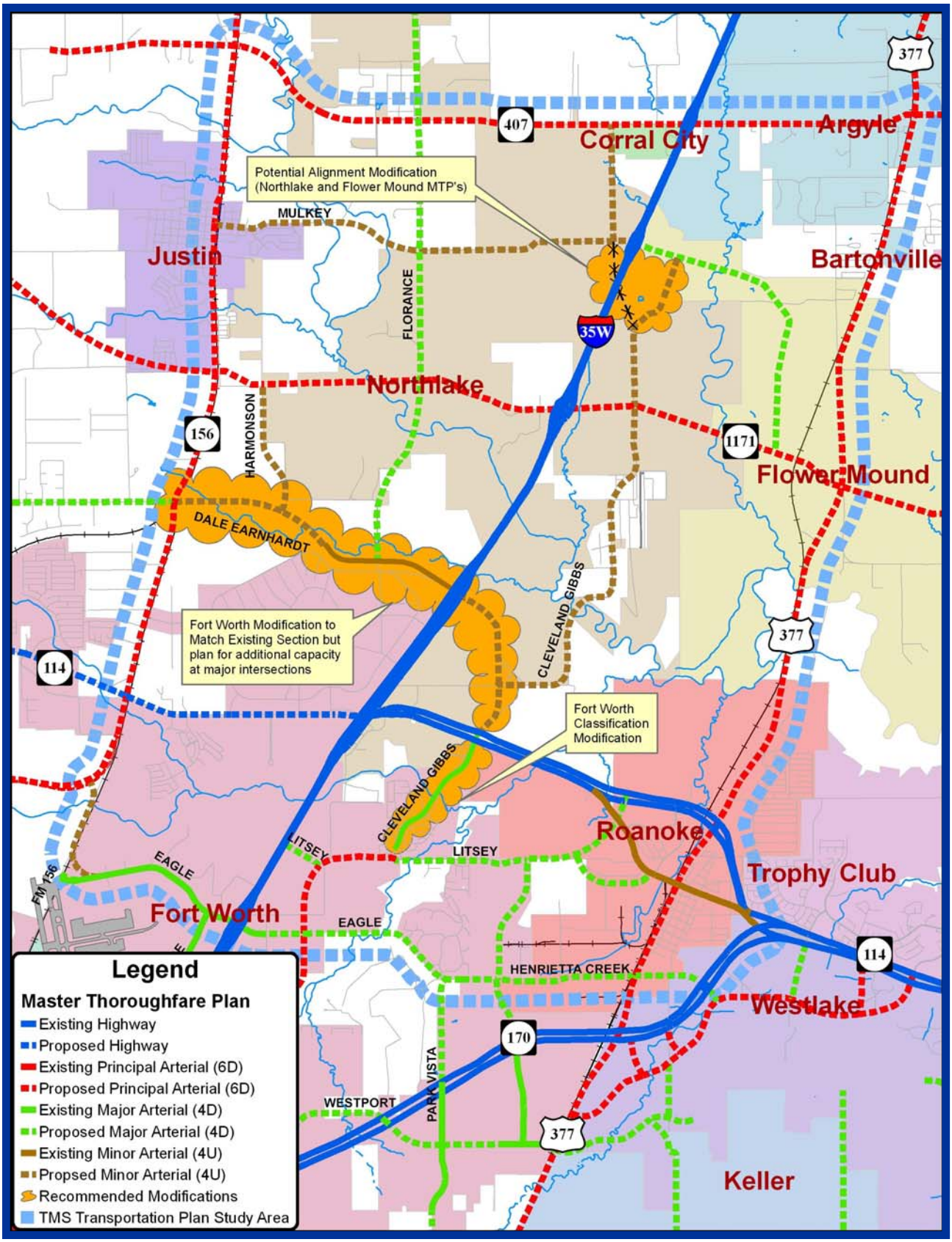


Figure 6.12 Master Thoroughfare Plan Recommendations

Figure 6.13 Commuter service similar to the Trinity Railway Express could be initially established as a special event service to TMS.

Transportation Plan Findings and Recommendations (cont.)

Transit:

- Three special event commuter rail options have been developed to serve TMS in the future (See Figure 6.14). Right-of-way preservation should begin for these alignments, considering the rapid pace of development in the area.
- The three proposed rail alignments for the commuter rail spur should be identified in the comprehensive plans of the respective involved municipalities.
- The special event commuter rail line should be established with the intent of providing a future daily commuter rail line from the TMS.
- A Park-n-Ride facility could easily be established at TMS.
- Consider future options for a connection to the north for future service to Denton via Denton County Transportation Authority (DCTA).

Stakeholder Involvement (Advisory Committee, Municipalities, and Public & Private Entities):

- The TMS Advisory Committee should continue to meet and work together to identify funding opportunities for regional roadway and transit facilities.
- The findings of this study should be presented to various city and town councils within the study area to solicit their support.
- The various public and private entities should work together to identify opportunities for partnerships to facilitate regional and local thoroughfare projects.

The full TMS Transportation Plan is included in Appendix A of this document. An Executive Summary is also available by contacting the City of Fort Worth Transportation and Public Works Department at (817) 392-8944.

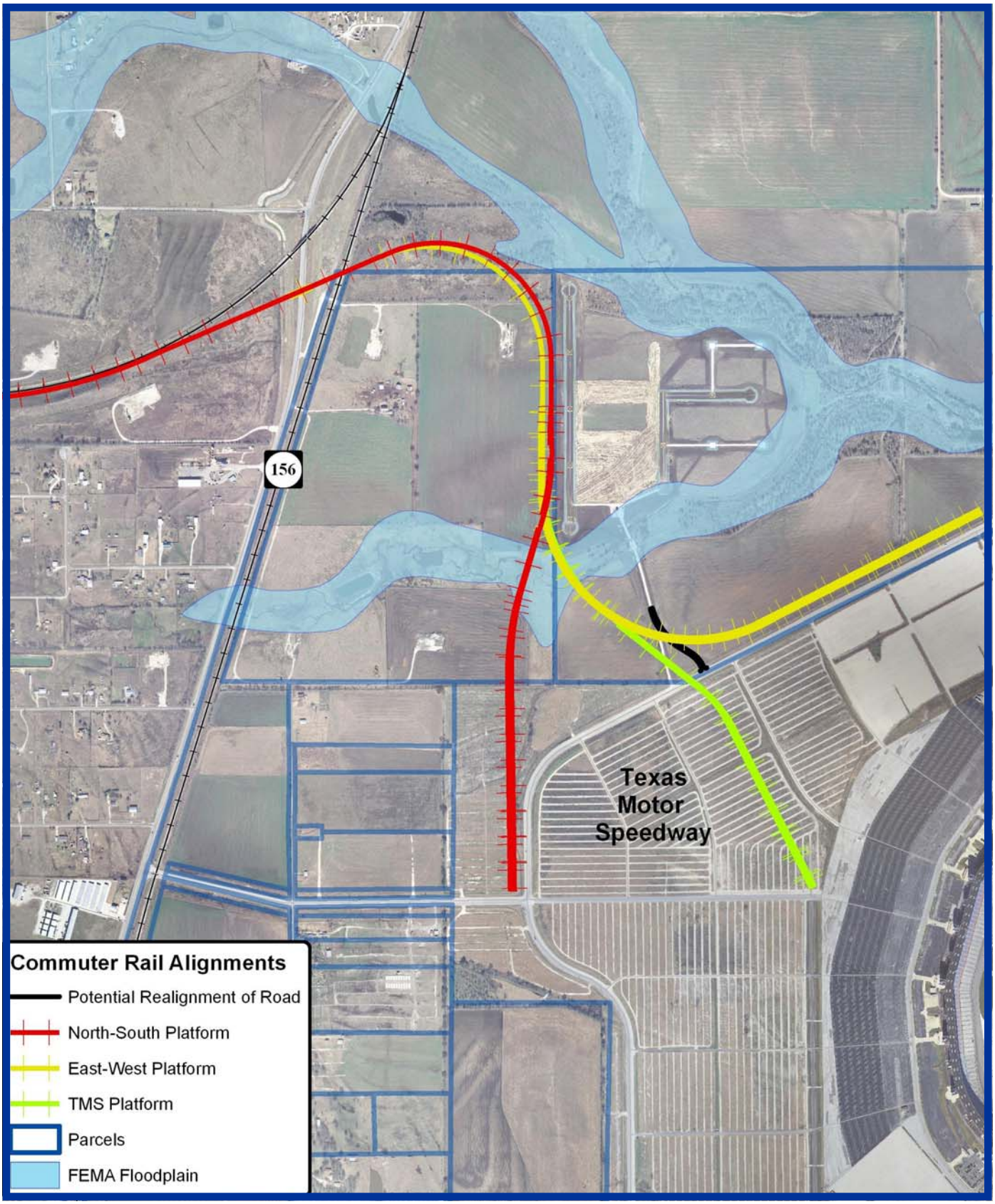


Figure 6.14 Potential Commuter Rail Alignments at TMS