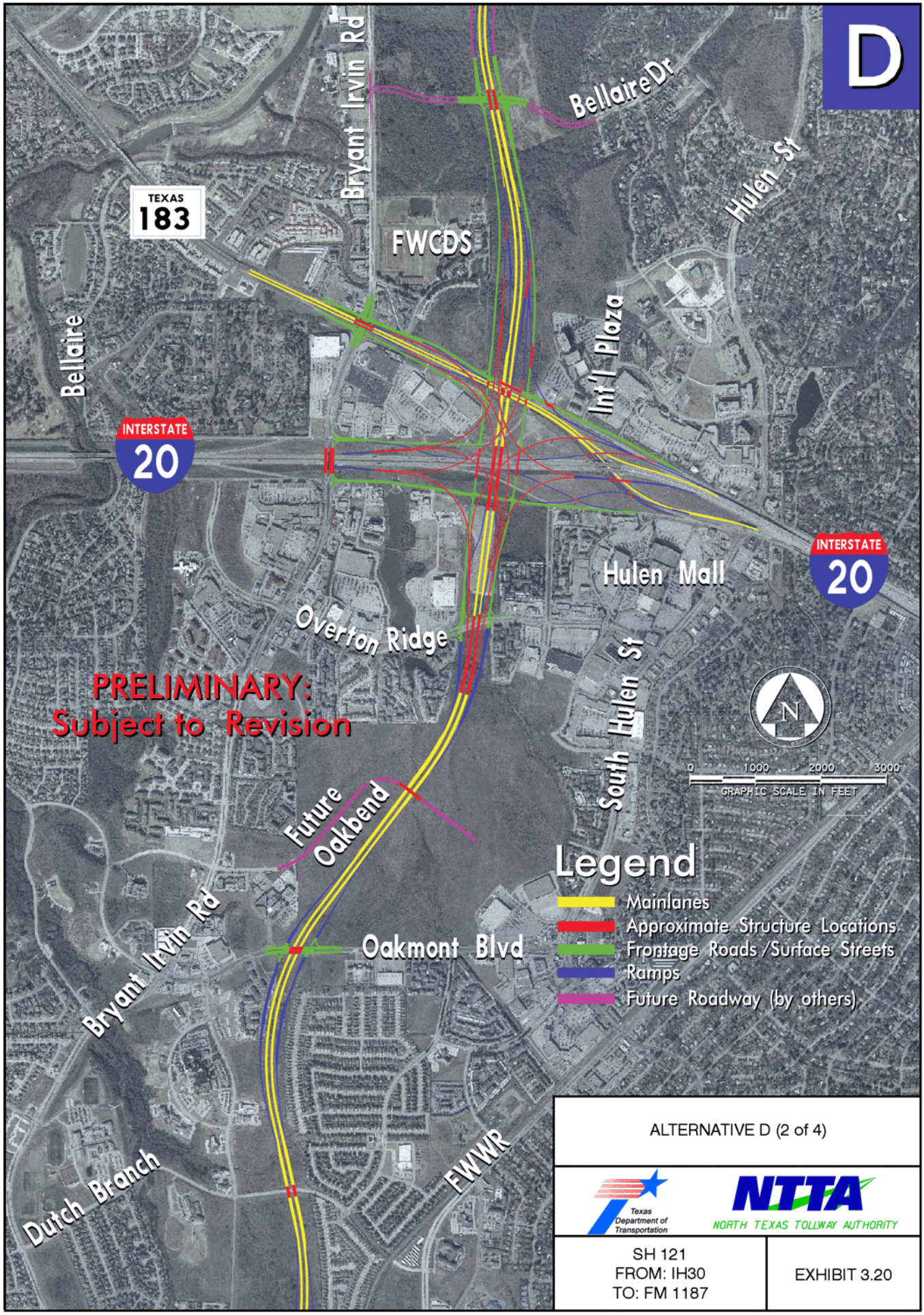
D
Legend
Mainlanes
Approximate Structure Locations
Frontage Roads /Surface Streets
Ramps
Future Roadway (by others)
Camp Bowie
Clover
Montgomery
Botanic Gardens
University Dr.
Trinity Park
Clear Fork Trinity River
Lancaster
7th
Summit
INTERSTATE 30
Pennsylvania
8th
Rosedale
Forest Park
FWWR
Vickery
Hulen St
Proposed Toll Plaza
UPRR
Clear Fork Trinity River
Fort Worth Zoo
Vickery
UPRR
Stonegate
Hulen St
TXU
TCU
University Dr.
Berry
Vickery
Riverpark
Bryant Irvin Rd
Bellaire Dr
PRELIMINARY:
Subject to Revision
0 1000 2000 3000
GRAPHIC SCALE IN FEET
ALTERNATIVE D (1 of 4)
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121
FROM: IH 30
TO: FM 1187
EXHIBIT 3.19



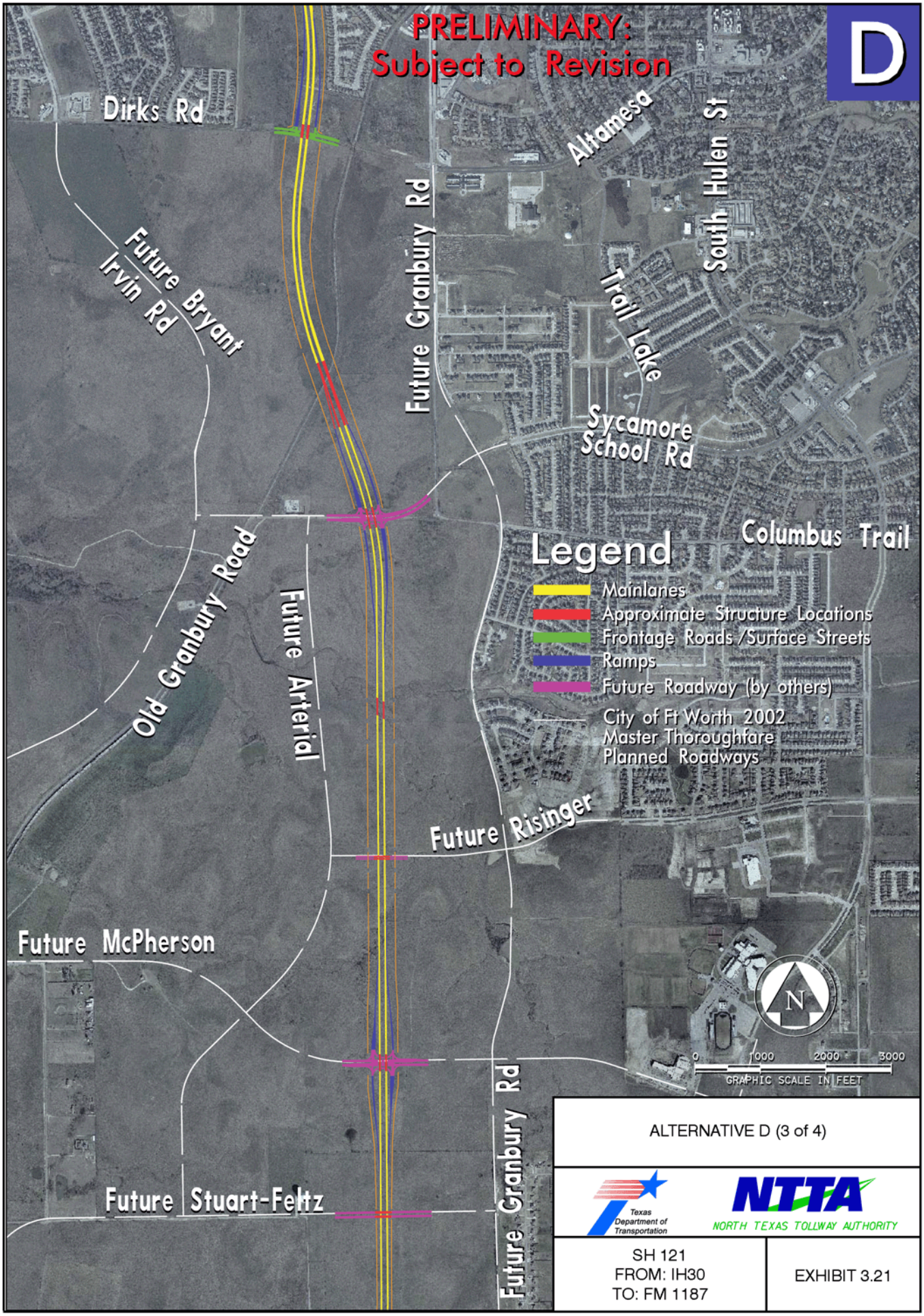
ALTERNATIVE D (2 of 4)

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
FROM: IH30
TO: FM 1187

EXHIBIT 3.20



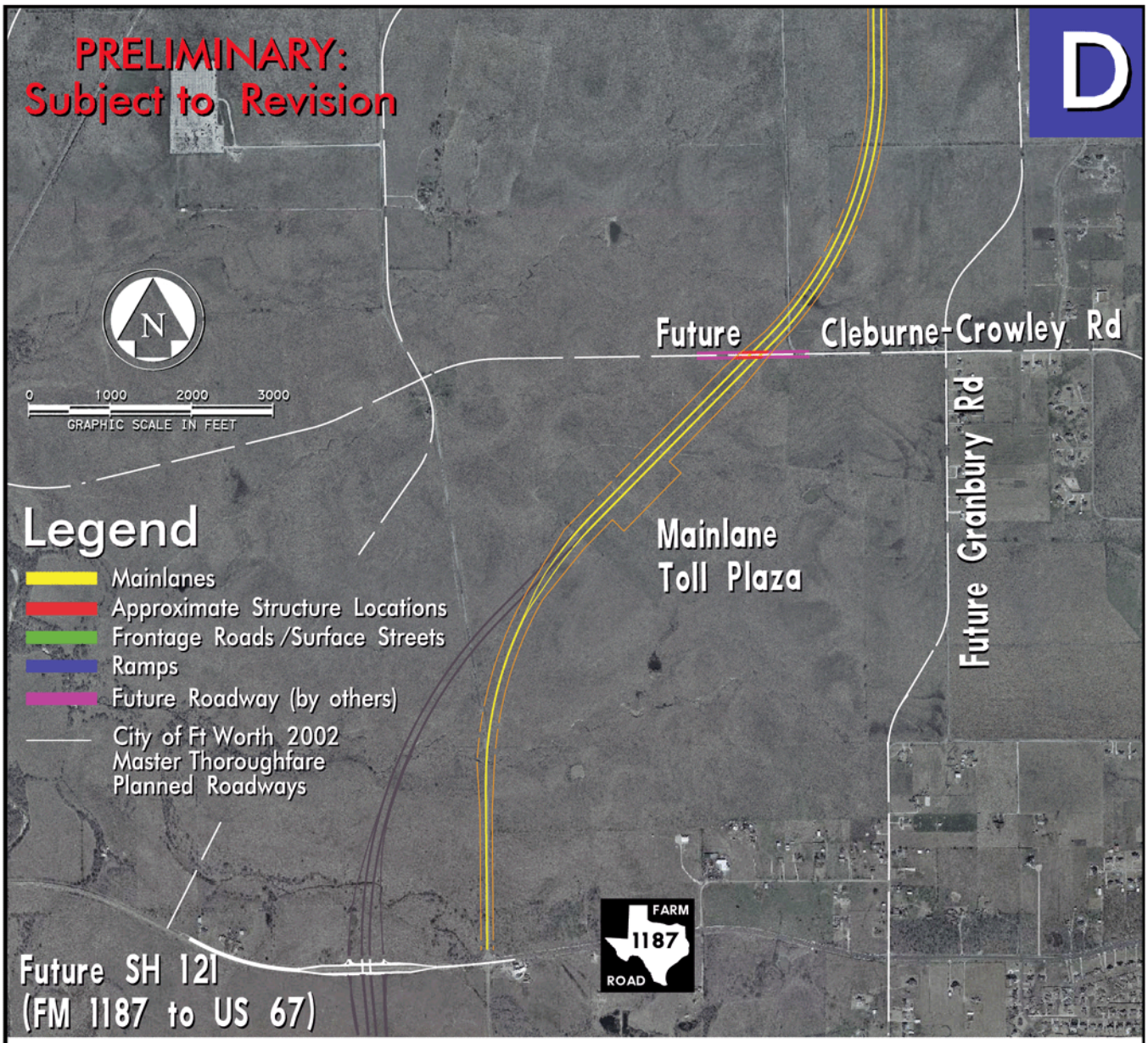
ALTERNATIVE D (3 of 4)

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
FROM: IH30
TO: FM 1187

EXHIBIT 3.21



ALTERNATIVE D (4 of 4)

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
FROM: IH30
TO: FM 1187

EXHIBIT 3.22

Alternative D, displayed at the June 1998 Public Meeting, would tie to the downtown IH 30 improvements, including IH 30, Summit Avenue and the connections to Macon Street, Cherry Street and Lancaster Avenue. This alternative would allow access to Summit Avenue and Forest Park Boulevard by a split diamond with the ramps from and to the west at Forest Park Boulevard and ramps to and from the east at Summit Avenue, in addition to a ramp from westbound IH 30 to Forest Park Boulevard. For this alternative, Forest Park Boulevard would not be relocated. SH 121 would pass under the existing connections between IH 30 and Rosedale Street.

IH 30 to the east would have direct access to and from SH 121. The connection to Forest Park Boulevard would consist of two lane flyover ramps that tie to Forest Park Boulevard near the Lancaster bridge, direct connections from Forest Park Boulevard north to IH 30 west and braided ramps adjacent to the St. Paul Lutheran Church.

Proceeding to the southwest adjacent to the UPRR, the tollroad would cross over the Clear Fork of the Trinity River and University Drive and under the Vickery Boulevard connections to Rosedale Street and the extended Montgomery Street. The mainlane toll plaza would be located between Montgomery Street and Hulen Street with the SH 121 alignment between Vickery Boulevard and the UPRR. A split diamond would serve Montgomery Street and University Drive with access to Rosedale Street. Vickery Boulevard would continue to have access to Rosedale Street. Most of the improvements that would be acquired as part of the ROW acquisition process would occur between Summit Avenue and Hulen Street.

Alternative D would go over the Hulen Street bridge, a future development road and Stonegate Boulevard, which would be located closer to the river than in the other alternatives. A diamond interchange is planned at Stonegate Boulevard with frontage roads along SH 121 on each side of the river between Stonegate Boulevard and Bellaire Drive. At Bellaire Drive, SH 121 would cross over Bellaire Drive and a diamond interchange is planned for this location with frontage roads extended on SH 121 to Overton Ridge Boulevard.

At IH 20, direct connectors would be included for all the movements of IH 20 as well as direct connectors between the south and the west on SH183. A full diamond interchange would be included at Overton Ridge Boulevard. Overton Ridge Boulevard would not be lowered or reconstructed.

SH 121 then would cross under the future Oakbend Trail and existing Oakmont Boulevard. The tollroad would pass over Dutch Branch Road and Altamesa/Dirks Road. A diamond interchange is planned for Oakmont Boulevard with a half diamond at Altamesa/Dirks Road. Ramp toll plazas would be included at the interchanges south of Hulen Street, with the exception of the IH 20 interchange. At Dutch Branch Road, the existing roadway would not be lowered or reconstructed.

South of Altamesa/Dirks Road, SH 121 would cross over the FWWRR and the future Sycamore School Road with a diamond interchange at Sycamore School Road. From this point, SH 121 would continue south and pass under the future Risinger Road and over future McPherson Road with an interchange at McPherson Road. It then would cross under future roads at Stewart-Feltz Road and Cleburne-Crowley Road, with a mainlane toll plaza between Cleburne-Crowley Road and FM 1187.

3.3.6. Summary of Build Alternatives

Alternatives A, B, C, C/A and D are plan alternatives within the same basic horizontal alignment. As such, plan elements and aesthetic components could be combined. As demonstrated in the preceding sections, the identification of a recommended route alignment from among the build alternatives proposed is the result of an interactive process. A thorough evaluation of each alternative was performed at each level of study. Further evaluation of the Build/No-Build alternatives is presented in Chapter 5.0, Environmental Consequences. The environmental, socioeconomic, as well as transportation performance factors are included as part of the list of selection criteria as contained in Table 3-1. The ability of each of the alternatives to meet these criteria has been instrumental in the recommendation process for the recommended alternative.

Table 3-1 – SH 121 Evaluation Matrix

Evaluation Criteria	Units	No-Build	Alternative A	Alternative B	Alternative C	Alternative C/A	Alternative D
Transportation Performance							
Improve Mobility of Existing Facilities	Yes/No	No	Yes	Yes	Yes	Yes	Yes
Improved Route for Truck Traffic	Yes/No	No	Yes	Yes	Yes	Yes	Yes
Improved Community and Local Access (circulation)	Yes/No	No	Yes	Yes	Yes	Yes	Yes
Human Environment							
Single-family Displacements	Number	0	48	5	3	3	10
*Multi-family Displacements	Number	0	3	0	0	0	0
Commercial Displacements	Number	0	82	77	82	82	70
Industrial Displacements	Number	0	0	0	0	0	2
Park Displacements	Number	0	0	0	0	0	0
School Displacements	Number	0	0	0	0	0	0
Church Displacements	Number	0	0	0	0	0	1
Cemetery Displacements	Number	0	0	0	0	0	0
Other Public Facilities	Number	0	0	1	0	0	1
Utility and Pipeline Crossings	Yes/No	No	Yes	Yes	Yes	Yes	Yes
Public Service Facility Access	Worse/Similar/Improved	Similar	Improved	Improved	Improved	Improved	Improved
Public Safety Impacts	Worse/Similar/Improved	Worse	Improved	Improved	Improved	Improved	Improved
Community Cohesion	Worse/Similar	Worse	Similar	Similar	Similar	Similar	Worse
Environmental Justice	Worse/Similar	Similar	Similar	Similar	Similar	Similar	Similar
Economic Impact	Worse/Similar/Improved	Worse	Improved	Improved	Improved	Improved	Improved
Potential Noise Impacts	Yes/No	No	Yes	Yes	Yes	Yes	Yes
Air Quality	Worse/Similar/Improved	Similar	Improved	Improved	Improved	Improved	Improved
Potential Hazmat Sites (Recorded)							
RCRA	Number	0	4	4	4	4	8
VCP	Number	0	2	1	1	1	2
PST	Number	0	10	11	10	10	18
LPST	Number	0	6	7	6	6	10
Other	Number	0	3	3	3	3	3
Historic Resources							
Historic Properties Existing	Existing	0	0	1	0	0	1
Archeological Sites							
Existing Sites (Recorded)	Existing	0	2	2	2	2	2
Potential Sites	Low/Medium/High	Low	Low	Low	Low	Low	Low
Natural Environment							
100-Year Floodplains	Yes/No	No	Yes	Yes	Yes	Yes	Yes
Stream/Floodplain Crossings	Number	0	9	10	10	10	10
Wetlands (Potential) Impact	Acre	0	9.24	8.95	8.10	8.10	8.95
Threatened/Endangered Species	Low/Medium/High	None	Low	Low	Low	Low	Low
Trees, Vegetation, and Wildlife Habitat Impact	Low/Medium/High	None	Low	Low	Low	Low	Low
Prime/Unique Farmland Soils	Yes/No	No	No	No	No	No	No

* *Applies to actual number of apartment complexes potentially affected for which at least one apartment building unit is displaced.*

3.4. Description of the No-Build Alternative

The No-Build Alternative assumes no major investments beyond those already programmed for funding. Improvements assumed under the No-Build Alternative are included in the approved MTP by the NCTCOG (*Mobility 2025 – 2004 Update*) and the *2004-2006 State Transportation Improvement Plan* (STIP). Under the No-Build alternative, improvement along the SH 121 study corridor would primarily consist of maintenance activities or spot improvements that provide near-term service level improvements. Since this is a new location alignment, only existing facilities would be maintained and improved. Generally, the existing transportation network in the southwest portion of Fort Worth would be lacking major improvements in mobility.

3.5. Comparative Analysis – Build and No-Build Alternatives

The following is a comparative analysis of the Build (toll facility) and the No-Build alternatives. The benefits and costs of each were screened in terms of their effect on overall mobility, environmental impacts, cost of ROW and construction as well as time required for implementation. Summary results are depicted in Table 3-1.

3.5.1. Length, Cost and Right-of-way Acreage

Preliminary ROW and cost estimates for the proposed toll facility were prepared in conjunction with the schematic plan for the project. The total project length from IH 30 to FM 1187 is approximately 15 mi. Total ROW acreage required for this facility is estimated to be 635 ac. The total 2001 estimated construction cost for the ultimate facility (six lanes from IH 30 to south of Altamesa/Dirks Road, four lanes from south of Altamesa/Dirks Road to FM 1187), is approximately $342 million. The length, cost and ROW acreage varies slightly for each of the alternatives.

Costs associated with the No-Build alternative would include routine maintenance and reconstruction activities on existing facilities, in addition to various CMS actions identified by NCTCOG. Table 3-2 illustrates the projected effect on various performance measures on the local transportation network based on the demographic data recorded in Table 3-3.

Table 3-2 – SH 121 – 2025 Tollroad Performance Summary

Study Subarea						
Performance Measures	**No-Build**	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative C/A**	**Alternative D**
Vehicle Hours of Delay (VHD) Traffic Control	45,419	43,976	44,036	43,928	43,551	44,036
VHD Congestion	235,771	198,624	198,312	199,012	196,331	198,312
Total VHD	281,190	242,600	242,348	242,940	239,882	242,348
Annual Cost of Congestion Delay*	$957,819,688	$806,910,000	$805,642,500	$808,486,250	$797,594,688	$805,642,500
Vehicle Hours of Travel	569,336	545,511	545,397	545,932	542,174	545,397
VMT	14,053,147	15,286,841	15,283,061	15,284,106	15,277,028	15,283,061
Percent Lane Miles at LOS D, E, or F	68.4%	61.1%	61.6%	61.7%	61.0%	61.6%
DFW Region						
VHD Traffic Control	285,952	282,195	283,479	282,241	281,860	283,479
VHD Congestion	4,057,639	4,003,206	3,997,059	4,002,793	4,000,370	3,997,059
Total VHD	4,343,591	4,285,401	4,280,538	4,285,034	4,282,230	4,280,538
Annual Cost of Congestion Delay*	$16,484,158,438	$16,263,024,375	$16,238,052,188	$16,261,346,563	$16,251,503,125	$16,238,052,188
Vehicle Hours of Travel	7,956,785	7,897,294	7,894,633	7,898,028	7,894,849	7,894,633
VMT	203,231,440	203,688,480	203,734,672	203,743,216	203,740,848	203,734,672
Percent Lane Miles at LOS D, E, or F	70.4%	69.3%	69.3%	69.3%	69.4%	69.3%

* *Calculated using 1.25 average auto occupancy, $12.50 average value of time and 260 commuting days.*

Table 3-3 – Base Year and 2025 Demographic Summary

Demographics	**Population**		**Employment**	
	2000	**2025**	**2000**	**2025**
Study Subarea	373,352	613,533	197,383	346,360
DFW Region	4,536,000	7,952,070	2,690,900	4,943,002

Source: NCTCOG, DFW Regional Travel Model, 2003.

3.5.2. Effect on Existing Network

The impact on the existing network of freeways, arterials and collectors in the PSC can be measured in terms of the percentage of lane miles in that particular Performance District operating at a certain LOS. The LOS rating scale is a simple, widely accepted method for describing traffic conditions. The scale ranges from LOS "A" (free flowing traffic) to LOS "F" (highly congested conditions). In comparing percent lane miles from Table 3-2 at LOS D, E or F for the Subarea between the No-Build and the ultimate build-out scenarios, the following was found:

- Under the No-Build alternative, 68.4 percent of the network in the Subarea would operate at LOS D, E or F.
- The difference between the No-Build and Build alternatives would show a positive change in LOS ranging from: Alternative A, 7.3 percent; Alternative B, 6.8 percent, Alternative C, 6.7 percent; Alternative C/A, 7.4 percent and Alternative D, 6.8 percent for the Subarea, indicating an improvement in LOS for the PSC.

The reduction in the TSM percent lane miles at LOS D, E or F provides an improvement in the annual cost of congestion delay. In comparing the annual cost of congestion for the Subarea from Table 3-2 between the No-Build and Build alternatives, the following was found:

- Annual cost of congestion for the Subarea with the No-Build alternative would be approximately $985 million dollars.
- The difference between the No-Build and the Build alternatives would be an improvement ranging from approximately: Alternative A, $151 million; Alternative B, $152 million; Alternative C, $149 million; Alternative C/A, $160 million and Alternative D, $152 million.

The statistics cited in Table 3-2 for alternatives A, B, C and D were derived using the previously approved *Mobility 2025 Plan* in the released DEIS. Alternative C/A was developed after release of the DEIS based upon Public Involvement. It can be inferred that Alternative C/A would have a similar effect on the existing traffic network as the other Build alternatives due to their similarities.

Based upon the numbers for annual cost of congestion, it was found that the annual cost would decrease between the No-Build and the Build alternatives.

Comparing the total vehicle hours of delay (VHD) from Table 3-2 for the Subarea between the No-Build and the Build scenarios, the following was found:

- The No-Build alternative would cause 281,190 more VHD in the Subarea.
- The difference between the No-Build and the Build alternatives would be a reduction in total VHD ranging from: Alternative A, 38,590 hours; Alternative B, 38,842 hours, Alternative C, 38,250 hours; Alternative C/A, 41,308 hours and Alternative D, 38,842 hours.

It was concluded that the total VHD would decrease between the No-Build and the Build alternatives.

3.5.3. Travel Time-Distance Comparisons

As part of the *1997 Traffic and Revenue Study* (Wilbur Smith Associates), an analysis of estimated travel time and distance comparisons for various typical movements was completed. The *Traffic and Revenue Study* analysis was based upon a proposed facility that begins at the interchange of IH 30 near Forest Park and terminates at Altamesa/Dirks Road.

Table 3-4 represents the comparison of four different routes throughout the PSC of time and distance. The table indicates that although SH 121 would not offer the shortest route in each case, it would allow for higher travel speeds; therefore, the shortest time duration between various points of origin and destination. Each comparison uses a logical route between trip termini that first includes the SH 121 project route and then takes a logical existing highway route that does not use the SH 121 project. Given these comparisons, it was determined that the proposed SH 121, if constructed, would provide the typical user of the SH 121 facility an average travel time savings of 4.7 to 7.5 minutes. Project routes that use SH 121 to the greatest extent possible (minimizing travel on the local arterial routes) would provide the greatest degree of travel distance and time-savings for typical users.

Additionally, Table 3-5 shows traffic forecasts for selected sites in southwest Fort Worth under each alternative scenario.

Table 3-4 – Time-Distance Comparisons During Peak-Period

Typical Destinations	Facility Used	Distance (mi)	Time (minutes)	Ave. Speed (mph)
Fort Worth CBD (IH 30 and IH 35W) To/From Southwest Fort Worth (Granbury Rd. and Columbus Trail)	Proposed SH 121	12.7	13.2	58
	Existing Route using IH 35 W, Frontage Roads, Sycamore School Road and Columbus Trail	13.6	20.7	39
Fort Worth CBD (IH 30 and IH 35W) To/From Benbrook (US 377 and Lakeside Drive)	Proposed SH 121	12.7	13.8	55
	Existing Route using IH 30 and US 377	12.0	18.5	39
Fort Worth CBD (IH 30 and IH 35W) To/From Southwest Fort Worth (Bryant Irvin Road and Oakmont Boulevard)	Proposed SH 121	10.5	10.4	61
	Existing Route using IH 35W, IH 20 and Bryant Irvin Road	13.2	15.8	50
Fort Worth CBD (IH 30 and IH 35W) To/From Southwest Fort Worth (Bryant Irvin Road and Oakmont Boulevard)	Proposed SH 121	10.5	10.4	61
	Existing Route using IH 30 and Bryant Irvin Road	11.4	15.2	45

Source: *Traffic and Revenue Study* - Proposed Southwest Parkway (1997)

Table 3-5 – 2025 Daily Traffic Forecasts by Alternative

Location	No-Build	Alternative A		Alternative B		Alternative C		Alternative D		Alternative C/A	
	2025 ADT	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build
IH 35W S of Allen Ave	198,329	195,316	-1.5%	195,875	-1.2%	196,150	-1.1%	195,875	-1.2%	196,288	-1.0%
IH 30 E of Summit Ave	154,198	188,718	22.4%	186,462	20.9%	186,931	21.2%	186,462	20.9%	191,750	24.4%
IH 30 W of Summit Ave	154,198	149,109	-3.3%	149,929	-2.8%	146,850	-4.8%	149,929	-2.8%	164,690	6.8%
IH 30 Ftg Rd W of Summit Ave	29,362	32,387	10.3%	12,945	-55.9%	13,849	-52.8%	12,945	-55.9%	30,126	2.6%
IH 30 W of Forest Park Blvd	211,813	198,385	-6.3%	198,751	-6.2%	189,639	-10.5%	198,751	-22.7%	193,290	-8.7%
Summit N of IH 30	17,386	15,025	-13.6%	14,883	-14.4%	18,406	5.9%	14,883	-14.4%	16,604	-4.5%
Summit bridge over IH 30	35,129	31,629	-10.0%	22,511	-35.9%	30,354	-13.6%	22,511	-35.9%	32,590	-7.2%
8th Ave S of IH 30	18,133	23,285	28.4%	21,718	19.8%	18,451	1.8%	21,718	-76.1%	16,772	-7.5%
Forest Park N of IH 30	24,823	28,866	16.3%	20,224	-18.5%	29,382	18.4%	20,224	-28.6%	28,778	15.9%
Forest Park S of Rosedale St	22,536	14,885	-34.0%	17,812	-21.0%	13,993	-37.9%	17,812	-21.0%	13,997	-37.9%
W Rosedale W of Forest Park Blvd	7,730	18,448	138.7%	16,983	119.7%	17,541	126.9%	16,983	119.7%	14,512	87.7%
University S of Rosedale St	27,920	31,419	12.5%	25,510	-8.6%	32,717	17.2%	25,510	-8.6%	33,005	18.2%
Hulen S of W Vickery Blvd	38,532	36,300	-5.8%	36,195	-6.1%	35,447	-8.0%	36,195	-6.1%	34,961	-9.3%
Bryant Irvin N of Stonegate Boulevard	30,544	29,487	-3.5%	28,238	-7.5%	28,632	-6.3%	28,238	-7.5%	28,196	-7.7%
Bryant Irvin S of Stonegate Boulevard	28,622	23,412	-18.2%	23,218	-18.9%	23,500	-17.9%	23,218	-18.9%	24,559	-14.2%
Hulen St S of Bellaire Dr	40,048	38,011	-5.1%	36,341	-9.3%	37,856	-5.5%	36,341	-9.3%	37,501	-6.4%
Overton Park S of Bellaire Dr	2,015	1,406	-30.2%	916	-54.5%	1,308	-35.1%	916	-54.5%	1,238	-38.6%
Bryant Irvin N of SH 183	32,392	24,523	-24.3%	23,356	-27.9%	24,298	-25.0%	23,356	-27.9%	24,581	-24.1%
Hulen Street S of IH 20	51,260	49,390	-3.6%	48,047	-6.3%	49,185	-4.0%	48,047	-6.3%	48,115	-6.1%
Bryant Irvin S of IH 20	45,743	44,518	-2.7%	43,188	-5.6%	44,580	-2.5%	43,188	-5.6%	40,481	-11.5%

Source: NCTCOG, 2003 based on *Mobility 2025-2004 Update*

Table 3-5 (continued) - 2025 Daily Traffic Forecasts by Alternative

Location	No-Build	Alternative A		Alternative B		Alternative C		Alternative D		Alternative C/A	
	2025 ADT	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build	2025 ADT	Change from No-Build
Hulen St N of Granbury Rd	49,830	45,681	-8.3%	44,270	-11.2%	44,602	-10.5%	44,270	-11.2%	42,680	-14.3%
Bryant Irvin Rd S of Oakmont	43,344	35,375	-18.4%	34,438	-20.5%	34,317	-20.8%	34,438	-20.5%	32,889	-24.1%
Hulen N of Altamesa Blvd	31,192	31,259	0.2%	30,723	-1.5%	30,725	-1.5%	30,723	-1.5%	30,100	-3.5%
McCart S of Altamesa Blvd	40,674	38,190	-6.1%	38,132	-6.2%	38,355	-5.7%	38,132	-6.2%	37,823	-7.0%
McCart N of Risinger Rd	27,883	27,011	-3.1%	27,193	-2.5%	27,336	-2.0%	27,193	-2.5%	27,065	-2.9%
Westcreek Dr W of McCart	10,917	10,212	-6.5%	10,011	-8.3%	10,379	-4.9%	10,011	-8.3%	9,938	-9.0%
Lovell E of Montgomery St	8,498	7,240	-14.8%	8,659	1.9%	8,755	3.0%	8,659	1.9%	15,510	82.5%
W Vickery E of Clover Lane	26,586	25,007	-5.9%	25,457	-4.2%	25,442	-4.3%	25,457	-4.2%	26,793	0.8%
W Vickery W of Clover Lane	29,801	24,902	-16.4%	25,384	-14.8%	25,684	-13.8%	25,384	-14.8%	27,109	-9.0%
W Vickery W of Westridge Ave	31,109	27,302	-12.2%	28,976	-6.9%	29,419	-5.4%	28,976	-6.9%	30,331	-2.5%
Hartwood Dr E of Hulen St	11,908	8,104	-31.9%	7,944	-33.3%	8,388	-29.6%	7,944	-33.3%	8,752	-26.5%
Oakmont Blvd	23,014	33,064	43.7%	32,399	40.8%	31,179	35.5%	32,399	40.8%	33,477	45.5%
Altamesa/Dirks Road W of Granbury Rd	9,141	7,617	-16.7%	7,421	-18.8%	7,567	-17.2%	7,421	-18.8%	7,252	-20.7%
Altamesa/Dirks Rd E of Bryant Irvin Rd	10,559	13,477	27.6%	13,519	28.0%	13,716	29.9%	13,519	28.0%	14,409	36.5%
Woodway Dr	13,323	10,950	-17.8%	10,421	-21.8%	10,259	-23.0%	10,421	-21.8%	10,232	-23.2%
Granbury Rd S of Hulen St	33,975	23,153	-31.9%	22,601	-33.5%	22,683	-33.2%	22,601	-33.5%	20,994	-38.2%
Briarhaven S of Bellaire Dr	2,013	662	-67.1%	1,435	-28.7%	714	-64.5%	1,435	-28.7%	-	-
Overton Park S of Ranch View Dr	3,148	2,771	-12.0%	2,025	-35.7%	2,630	-16.5%	2,025	-35.7%	2,480	-21.2%

Source: NCTCOG, 2003 based on *Mobility 2025-2004 Update*

3.6. Congestion Management Strategies in Conjunction with Proposed Alternatives

Regardless of the build alternative selected, the NCTCOG's *Mobility 2025 – 2004 Update* addresses several CMS strategies found to be effective transportation measures for southwest Fort Worth. However, most of these were recommended in conjunction with a freeway/tollroad facility serving the same corridor. In addition to these CMS recommendations, a discussion on rail/transit-oriented strategies to reduce congestion on area freeways and to serve future demand in the areas of southwest Fort Worth is presented in the following.

As discussed in *Mobility 2025 - 2004 Update* and in the sections that follow, the option to provide commuter rail service in the study corridor was found to be a legitimate component of the overall transportation system proposed for southwest Fort Worth. As such, each of the following strategies are considered components of, rather than alternatives to, the overall project objectives. They are not carried further into the alternative evaluation discussions of this document, but are considered part of the Build or No-Build alternative as components of the committed improvements for the region.

3.6.1. Rail/Transit-Oriented Strategies

The transit component of the *Mobility 2025 – 2004 Update* includes local bus, express bus, commuter rail, light rail and rail technologies to be determined. The discussion of this alternative is based solely on *Mobility 2025 – 2004 Update*'s analysis of current conditions, discussion of the various alternatives that were identified for evaluation and the results of this evaluation.

To provide a baseline, with which all of the *Mobility 2025 –2004 Update* alternatives could be compared, a future year committed network was developed. The components of this system include the TRE Commuter Rail Line from Dallas to Fort Worth with a peak headway of 10 minutes and an off peak headway of 50 minutes during hours of operation. A network of local and express buses designed to serve the two transit authority service areas and the rail system was also included. Freeway, arterial and HOV lane assumptions were held constant for all of the transit forecasts.

All transit forecasts developed for *Mobility 2025 – 2004 Update* used the same baseline fare assumptions, based on current fare structures for both DART and FWTA. A fare structure for the TRE was based on the anticipated travel distance. Forecasts were then simulated using the year 2025 demographic scenario. Possible rail alternatives for the Metroplex were identified based on previous system planning work, completed major investment studies and information obtained from the *Regional Commuter Rail Feasibility Study*.

The transit system focus was mainly on the evaluation of rail alternatives with the bus system serving as a background feeder system. The bus service would feed the rail through the following services:

- Mobility Impaired Transportation Service (MITS) gives rides to people with disabilities. MITS trips are by reservation and riders must register for the service.
- FWTA offers regular fixed route service seven days a week, with bus stops at the same places, at the same times, every weekday. Local fixed routes have shorter schedules on weekends.
- Most fixed routes connect with at least one of the six transfer stations where routes meet.
- The Rider Request brings the bus to your home or workplace by reservation.
- The TRE has nine transfer stations between Dallas and Fort Worth to help the rider link up to bus service with FWTA and DART.

FWTA reported ridership in the second quarter of 2004 in Table 3-6.

Table 3-6 – Fort Worth Transit Authority Ridership Report

Service	Ridership
MITS	40,702
Commuter Rail	188,377
Transit Service	1,178,712
Total Ridership	1,407,791

Source: FWTA Report, 2004 Quarter 2 (Dec-Feb)

A series of 10 different rail forecasts were developed to use in the evaluation and identifications of recommendations for *Mobility 2025 – 2004 Update*.

Exhibit 2.7 shows the full range of corridors that were identified as alternative rail options for analysis. In cases where the rail corridors had no interaction with one another, such as the extension

of rail into southwest Fort Worth, the rail options were simulated in the same alternative. The FWWRR component in Fort Worth, that would serve the SH 121 PSC, is analyzed as a commuter rail system in the forecasts.

The evaluation of various rail forecasts to determine those sections of the rail alternatives that might be warranted was based on a set of rail system warrants. The rail capital cost per mile was compared with the per mile cost of reconstructing a freeway and the per lane person carrying capacity of a roadway, to result in the daily rail passenger warrants. Due to the realization that the *Mobility 2020* warrants were high in comparison with the actual ridership that was observed on the existing DART rail system, a set of "rail equity warrants" were developed to account for this discrepancy. The rail equity warrants previously established during the development of *Mobility 2020* were used during review of the *Mobility 2025* and *Mobility 2025 Update* forecasts.

Projected ridership for segmented links of the rail systems in each of the 16 forecast simulations was obtained for the year 2020. Based on these forecasts, recommendations were made that included the recommendation to form a "Tarrant Rail Evaluation Task Force" to evaluate the engineering feasibility and environmental implications of commuter rail service along the Cottonbelt corridor, from DFW International Airport through the Fort Worth CBD to the FWWRR line in southwest Fort Worth.

3.6.2. Transportation Systems Strategies

Transportation systems strategies utilize the existing transportation system and incorporate features to maximize or increase its efficiency. The project limits include urbanized (Fort Worth) and rural areas. A regional CMS plan, that incorporates various TSM/TDM strategies, was prepared by NCTCOG and has been operational since October 1, 1997. The CMS is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of traffic to levels that accommodate State and local needs. The regional CMS includes commitments for TDM, TSM,

Advanced Transportation Management (ATM), Bicycle/Pedestrian facilities and arterials widening (Please see Exhibit 2.4 for programmed projects near the PSC).

TDM

The Regional ETR Program was one strategy that is being implemented as a transportation control measure. The program involves continued annual operation of the existing program as a public/private cooperative effort between NCTCOG, DART and the FWTA. This voluntary program targets the region's large employers, focusing both inside and outside of transit service areas. The effectiveness of this strategy is contingent on by the program's success in reducing single occupant vehicle travel.

Ridesharing programs are key elements of any region's TDM effort. The vanpool program is a strategy aimed at increasing average vehicle occupancy during peak travel periods. It is implemented through public agencies, public/private Transportation Management Associations (TMA) and/or individual private sector employers. The program targets long work commute trips. Public subsidy, directed to vanpool riders, targets one-to two-year start-up costs.

Park-and-Ride facilities serve as collection areas for persons transferring to higher occupancy vehicles. Strategies for the PSC include: i) continued operation of existing Park-and-Ride facilities; ii) consideration of candidate future sites; and iii) location and design of facilities that are conducive to bus transit, vanpools and carpools.

Transportation System Management

The various TSM strategies in the PSC are aimed at identifying improvements to new and existing facilities of an operational nature. These include intersection improvements, such as the installation of traffic control devices, traffic channelization, grade separations and addition of turning lanes. Several such projects are currently programmed and included in the TIP. Another strategy that falls under the TSM category is signalization improvements. Programmed projects are included in the TIP, with future projects to include signal optimization, signal upgrades and system interconnection.

Special Events Management

Special events management strategies, such as pre-trip and en-route information dissemination plans, TDM and transportation system management, may be used to minimize traffic disruption and enhance mobility before, during and after special events. Examples of these special events in the general project area include the Southwestern Expo and Livestock Show at the Will Rogers Memorial Coliseum and the Fort Worth Cowtown Marathon and Pioneer Days in the Fort Worth Stockyard District and Texas Motor Speedway races and other events.

Advance Transportation Management

The ATM program is aimed at reducing delay on the freeway system due to traffic incidents such as crashes or stalled vehicles. An Advanced Traveler Information System (ATIS) is recommended as part of this program to provide real-time information on traffic conditions and travel opportunities throughout the region.

A Tarrant County steering committee has completed the Fort Worth Regional ITS Plan. The traffic monitoring and incident detection/response system currently operates on IH 35W south of IH 30, IH 20 (South loop of IH 820), SH 360: IH 20 to SH 183 and SH 183 east of SH 360. A Traffic Management Center currently manages this system. Mobility Assistance Patrols service most of the Tarrant County freeway system.

Another recommendation is the Advanced Traffic Management Systems (ATMS). This system promotes the integration of freeways and tollroads, HOV lanes and strategic arterials across jurisdictional lines. Recommendations included in the ATMS include: operation of changeable message signs to divert traffic around traffic incidents; closed circuit television for traffic monitoring; incident verification and clearance; lane control signals for incident management; and automated ramp metering systems to regulate freeway system access during peak travel periods. Many of these services can be and have been, integrated with the ATIS under the collective title, ITS. ITS projects would strive for consistency with National ITS Architecture and Structures recommendations (FHWA 1998).

An Advanced Public Transportation System (APTS) is recommended. The aim of this system is to use available technology to enhance transit service, increase the safety of riders and to support greater levels of service to transit riders.

Bicycle and Pedestrian Facilities

In an effort to increase the regional level of bicycle and pedestrian trips, various strategies are recommended for immediate and future implementation. Bicycle and pedestrian facilities are generally developed to serve commuter trips of less than five miles in length, especially in high-density areas and along congested travel corridors.

In order to facilitate off-street bike commuter travel and pedestrian access, the veloweb Project, a proposed interconnected system of paved routes with signing and grade separated crossings to facilitate bicycle commuter travel was presented in *Mobility 2025 - 2004 Update*. The veloweb is essentially a series of small roads designated for use by fast-moving bicyclists. Primary considerations of the veloweb include:

- Markings and travel speeds to meet minimum safety standards (proposed design speed of 25 mph).
- Long-lasting impervious pavement surface.
- Grade-separated crossings of roadways with substantial traffic and traffic circle intersections with minor roadways.
- Limited signalized or stop sign intersections.
- Easy access from roadways and to common trip destinations.

In addition to the veloweb there are other recommendations to create a safer environment for bicycle commuting. There is an on-street bicycle and pedestrian access program that involves the widening of outside lanes on arterial streets. Also proposed, was a system of improvements intended to promote bicycle commuting as a more viable mode of travel. Examples of such improvements might include signed on-and-off street routes, bicycle parking in front of retail and business centers, bicycle storage facilities and various other amenities for commuters. Central Fort Worth is a candidate area for future implementation and development assistance for bicycle commuting. A greater emphasis on the planning of pedestrian facilities across the region serving major activity and transit centers is

also proposed, particularly in combination with additional or proposed light rail, commuter rail and HOV lanes.