

EXECUTIVE SUMMARY
of the
PROPOSED IMPLEMENTATION PLAN
for the
HIGH-SPEED RAIL PASSENGER SYSTEM
and the
ASSOCIATED INTERMODAL FREIGHT TRANSIT
in the
TEXAS TRIANGLE AND SOUTHWEST CORRIDORS

Presented to

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November 10, 2009

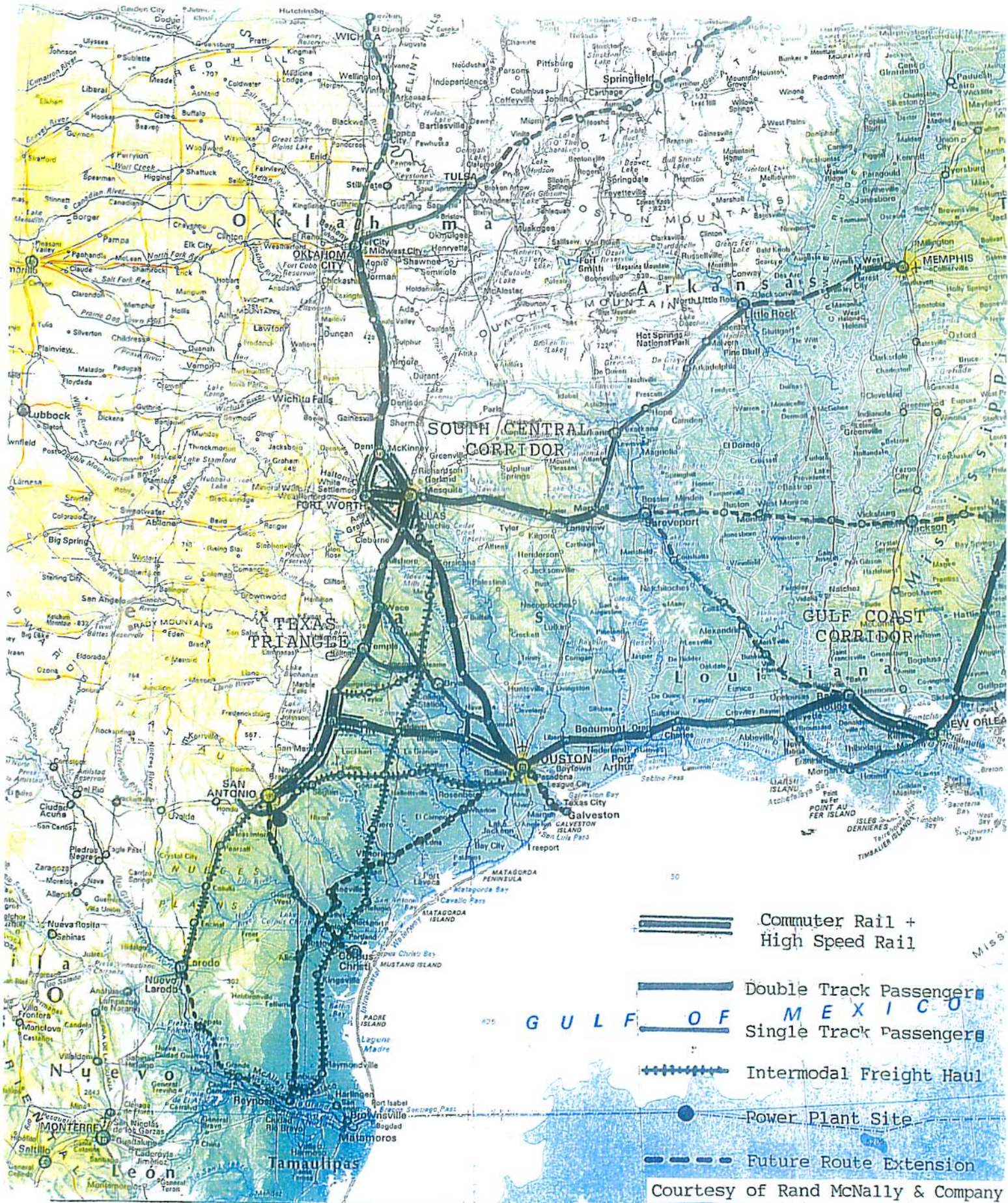
PROJECT SUMMARY

It is proposed to develop and implement a 735 to 945 mile-long electrified high-speed rail passenger system in the Texas Triangle between the Houston-Galveston, Dallas-Fort Worth and Austin-San Antonio metropolitan areas during the 15 year period from 2010 to 2025 plus a 1,240 mile high-speed rail passenger system extension along the South Central and Gulf Coast Corridors in Arkansas, Louisiana and Oklahoma. The proposed electrified high-speed rail passenger system in the Texas Triangle can then be extended into a 1,975 to 2,185 mile-long electrified route network to Oklahoma City and Tulsa in Oklahoma, to the Texarkana and Little Rock in Arkansas, and also to Shreveport, Baton Rouge and New Orleans in Louisiana by a 1,230 mile network and then to the other Southern and Midwestern States. This proposed high-speed rail passenger systems in Texas and the neighboring States can later be extended to the Southeastern States by way of New Orleans and Memphis and also into the Southwestern States to New Mexico, Arizona and California largely along or adjacent to the Union Pacific Railroad freight tracks through entirely separate but parallel operations.

The proposed Texas Triangle speed rail passenger network is intended to reduce travel times between Texas Triangle cities to two hours or less. The proposed high-speed rail passenger network in the Texas Triangle is intended to provide service on an hourly basis or less between these major cities at train speeds of up to 200 miles per hour by using the French TGV or equivalent high-speed train technology, and at future ticket prices of \$50 to \$100 per trip. The proposed high-speed rail passenger network is to be designed so that travel time between the major distant cities in Texas to those located in Arkansas, Louisiana and Oklahoma can then be reduced to three hours or less with service frequencies of one to two hours with fares comparable to those in the Texas Triangle. The preferred route option in the Texas Triangle is the Hempstead-Bryan-College Station-Hearne-Waco line along the Union Pacific Railroad with common corridors between Houston and Hempstead, Dallas-Fort Worth and Hillsboro plus Austin to San Antonio. This route network will include a line from Bryan to Temple with and extension to Belton, Killeen, Fort Hood and Copperas Cove in parallel to the Burlington Northern Santa Fe rail line.

In addition to the high-speed rail passenger system, a separate 1,055 mile-long rail freight operation will be developed by and for the Union Pacific Railroad to haul intermodal freight in and through the Texas Triangle based on truck hauls by rail over a parallel network largely separate from the high-speed rail passenger system so that the two systems do not interfere with each other. This intermodal freight truck haul network will be developed by constructing additional tracks along existing Union Pacific railroad lines between Laredo, Flatonia and Dallas so that traffic volume can be expanded with train speeds to be increased so that travel times can be reduced. This intermodal freight truck haul route network will incorporate the relocation of the existing Union Pacific Railroad freight traffic between Dallas and San Antonio to a new route between San Antonio, Flatonia, Hearne and Dallas in parallel to the cost of the line to be converted to high-speed rail passenger operation. The proposed network will incorporate remediation of the existing Tower 55 interlocking freight bottleneck in Fort Worth which affects both freight and passenger trains operations. The development of the high-speed passengers rail operations requires construction of a separate overpass between the east-west and north-south trackages at Tower 55 which inherently solves the current congestion problem.

PROPOSED ROUTE OF THE HIGH SPEED RAIL PASSENGER SYSTEM IN THE TEXAS TRIANGLE AND THE SOUTH CENTRAL CORRIDOR AND THE GULF COAST CORRIDOR



Courtesy of Rand McNally & Company
Chicago, Illinois, 198

The proposed high-speed rail passenger system in the Texas Triangle will be constructed on or along to specific existing Union Pacific Railroad rights-of-way wherever possible on completely separate tracks from freight train operations or on completely separate rights-of-way with completely separate freight and passenger operations. Where there is common freight and passenger operations on the same routes, there will be suitable protection barriers, separation distances and other provisions as necessary to assure parallel freight and passenger train operations on common routes so as to minimize interference. There will be double track operations of the high-speed passenger trains on the higher ridership routes, with single track lines for the lower density service which incorporates automatic train control and in-cab signaling systems. Parallel commuter train service will be along selected rights-of-way with high-speed passenger trains on separate tracks in the Austin-San Antonio, Houston-Galveston and Dallas-Fort Worth urban regions in cooperation with the individual urban transit authorities.

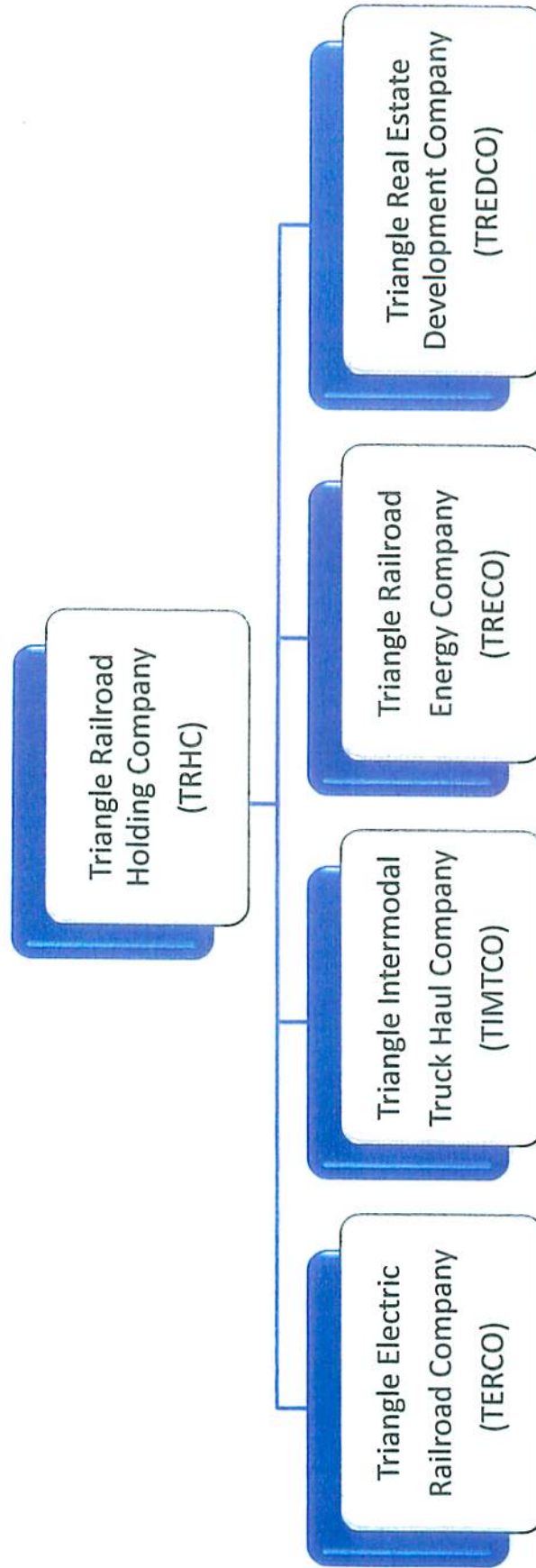
The Triangle Railroad Holding Company will be responsible for developing and implementing the proposed high-speed rail passenger system in the Texas Triangle along with the intermodal truck haul rail network in conjunction with the Union Pacific Railroad along its railroad lines between Houston, Dallas and San Antonio. The proposed high-speed passenger railroad will be built along or adjacent to the existing Union Pacific rail lines in the Houston to Dallas corridor through Bryan College Station. The present Union Pacific freight rail service will be relocated from the existing Dallas to San Antonio corridor line to a new route between San Antonio, Flatonia, Hearne and Dallas where increased truck capacity will be constructed. It will then be possible for the existing Union Pacific freight train service to operate over this line along with a new intermodal truck haul freight service between Laredo, San Antonio, Flatonia and Hearne to Dallas as well as to Houston and Dallas.

The Triangle Railroad Holding Company (TRHC) will have four operating subsidiary companies to implement various components of the high-speed railroad passenger project in the Texas Triangle. The Triangle Electric Railroad Company (TERCO) will be chartered as an operating railroad company whose purpose will be to plant, design, build and operate the high-speed rail passenger system in Texas. The Triangle Railroad Energy Company (TRECO) will be responsible for generating for purchasing as well as transmitting and supplying electricity required for the operation of the electrification facilities to the high-speed passenger and intermodal freight trains in the Texas Triangle.

The Triangle Intermodal Truck Haul Company (TIMTCO) will be responsible for building and operating the intermodal terminals used for truck loading and unloading plus the railroad infrastructure expansion and supply of the required truck haul flat and rolling stock. The Triangle Real Estate Development Company (TREDCO) will be responsible for planning, building and operating the respective stations and terminals required for the high-speed rail passenger project in the Texas Triangle. These four operating subsidiary companies will all be incorporated according to the laws of the State of Texas while the Triangle Railroad Holding Company has already been incorporated in Texas with its registered headquarters at 4688 Matilda Street, Dallas, Texas 75206.

It is understood that the capital cost for the relocation of the Union Pacific freight operations between Dallas and San Antonio will be the responsibility of the Triangle Railroad Holding Company along with the capacity expansion of the San Antonio Flatonia Hearne Dallas freight line plus to Laredo and

PROPOSED ORGANIZATIONAL STRUCTURE
FOR THE
TRIANGLE RAILROAD HOLDING COMPANY AND AFFILIATED SUBSIDIARY COMPANIES



Houston. The proposed intermodal truck haul rail freight service will be operated by the Union Pacific Railroad under contract to the Triangle Railroad Holding Company, who will be responsible for the expense in implementing such a service. In addition, the Triangle Railroad Holding Company is planning to incorporate the expected investment in electrification of the high-speed rail passenger lines in the Texas Triangle to include the associated freight rail lines to be used for intermodal truck hauls to be operated under contract by the Union Pacific Railroad on a "hook and haul" basis between Laredo, San Antonio, Houston, Flatonia and Dallas through its Triangle Intermodal Truck Haul Company.

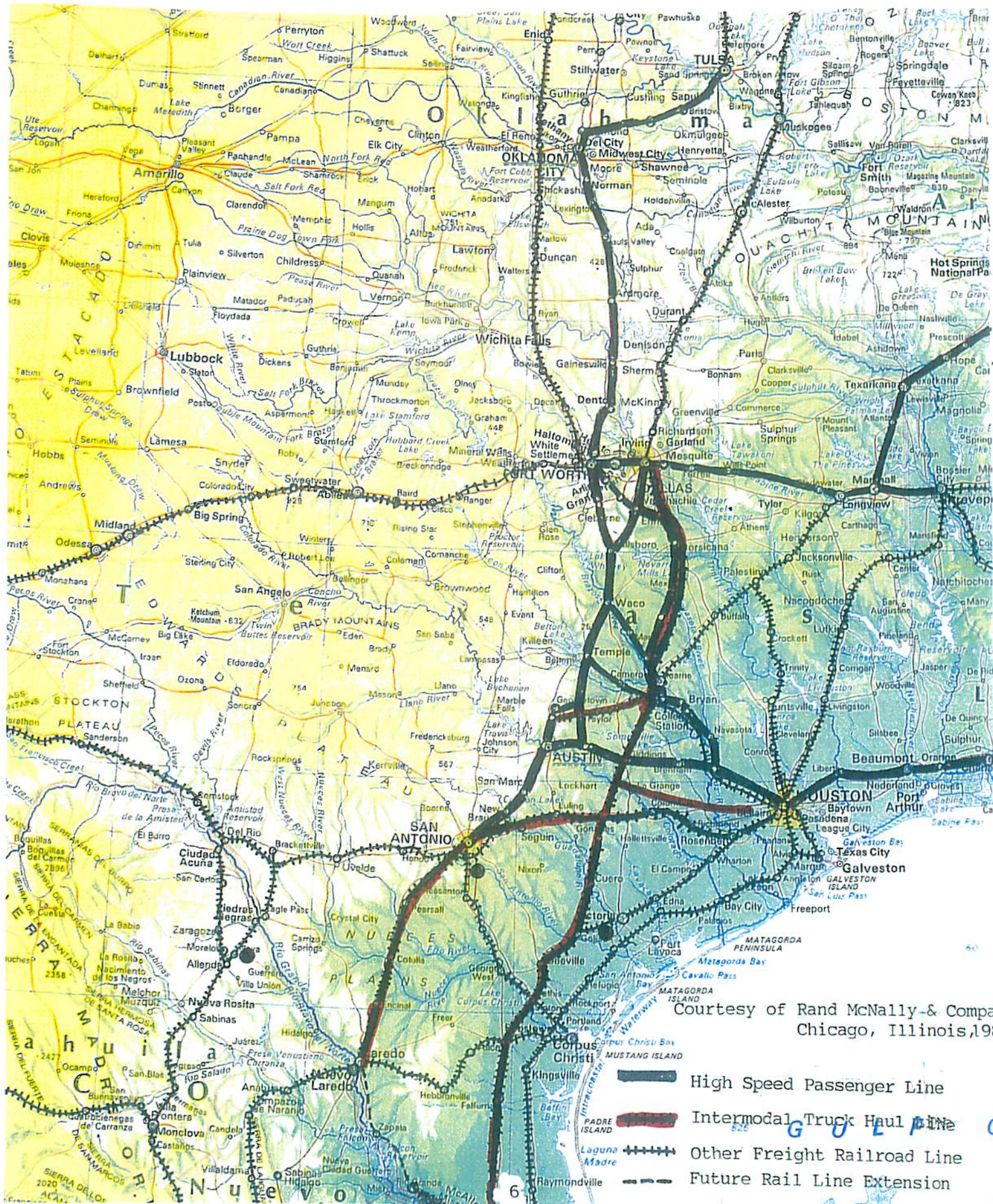
The capital expense of electrification of the railroad lines in the Texas Triangle will be the responsibility of the Triangle Railroad Holding Company (TRHC) through its Triangle Railroad Energy Company (TRECO) subsidiary company. This electrification shall include the capital construction of any electric generation facilities plus associated remote transmission lines plus the traction substations, phase circuit breakers and overhead catenaries, wires and transmission feed lines plus support structures. The proposed electrification will include the 735 to 945 miles of high-speed rail passenger lines plus the 1,055 miles of intermodal truck haul freight lines in the Texas Triangle.

The provision of electricity for the above 1,790 to 2,000 miles of electrified railroad lines by the Triangle Railroad Energy Company subsidiary of the Triangle Railroad Holding Company will include the electricity for the high-speed train operation plus the intermodal truck haul freight trains in the Texas Triangle. This electrified railroad operation could then be extended to other freight train operations along these Union Pacific lines and could include other Union Pacific freight operations on other rail lines if they so desire. This provision would be subject to the provision that the electricity be purchased from the Triangle Railroad Holding Company.

The expected basis for the energy cost expense reimbursement by the Union Pacific Railroad for such a service would then be on the basis of direct electricity sales purchase cost plus an allowance for incremental capital amortization base on long-term low interest rate project financing mechanisms. It is planned to incorporate at least a portion of the incremental capital cost of the remediation of the existing Tower 55 interlocking rail congestion point bottleneck in Fort Worth by overpass construction and line depression as a part of the Texas Triangle high-speed rail project investment on an incremental impact basis as the result of the recent agreement between the Union Pacific Railroad and the City of Fort Worth, Texas. It may also be possible to extend the electrification of the railroad lines in the Texas Triangle to the commuter rail operations between Houston and Hempstead, Elgin and Austin, Georgetown and San Antonio as well as in the Dallas-Fort Worth metropolitan area..

It is planned that the proposed new high-speed rail passenger rail system in the Texas Triangle will be developed by the Triangle Railroad Holding Company by a network of 735 to 945 miles parallel to the Union Pacific Railroad right-of-way along with a 1,055 mile-long expanded intermodal truck haul rail system with a total rail network of approximately 1,730 to 2,000 miles. The estimated capital costs for the truck and fixed facilities for these two parallel but separate railway operations are \$23.5 billion to \$26.40 billion for the high-speed rail passenger system and \$7.65 billion for the intermodal truck haul system. The total capital investment of the fixed facilities alone for both the high-speed passenger and

PROPOSED HIGH SPEED PASSENGER AND INTERMODAL TRUCK HAUL RAILROAD NETWORK
ALONG THE UNION PACIFIC RAILROAD RIGHTS OF WAY IN THE TEXAS TRIANGLE AREA



intermodal truck haul rail services is estimated as \$31.15 to \$34.05 billion for the entire 2,000 mile-long route network.

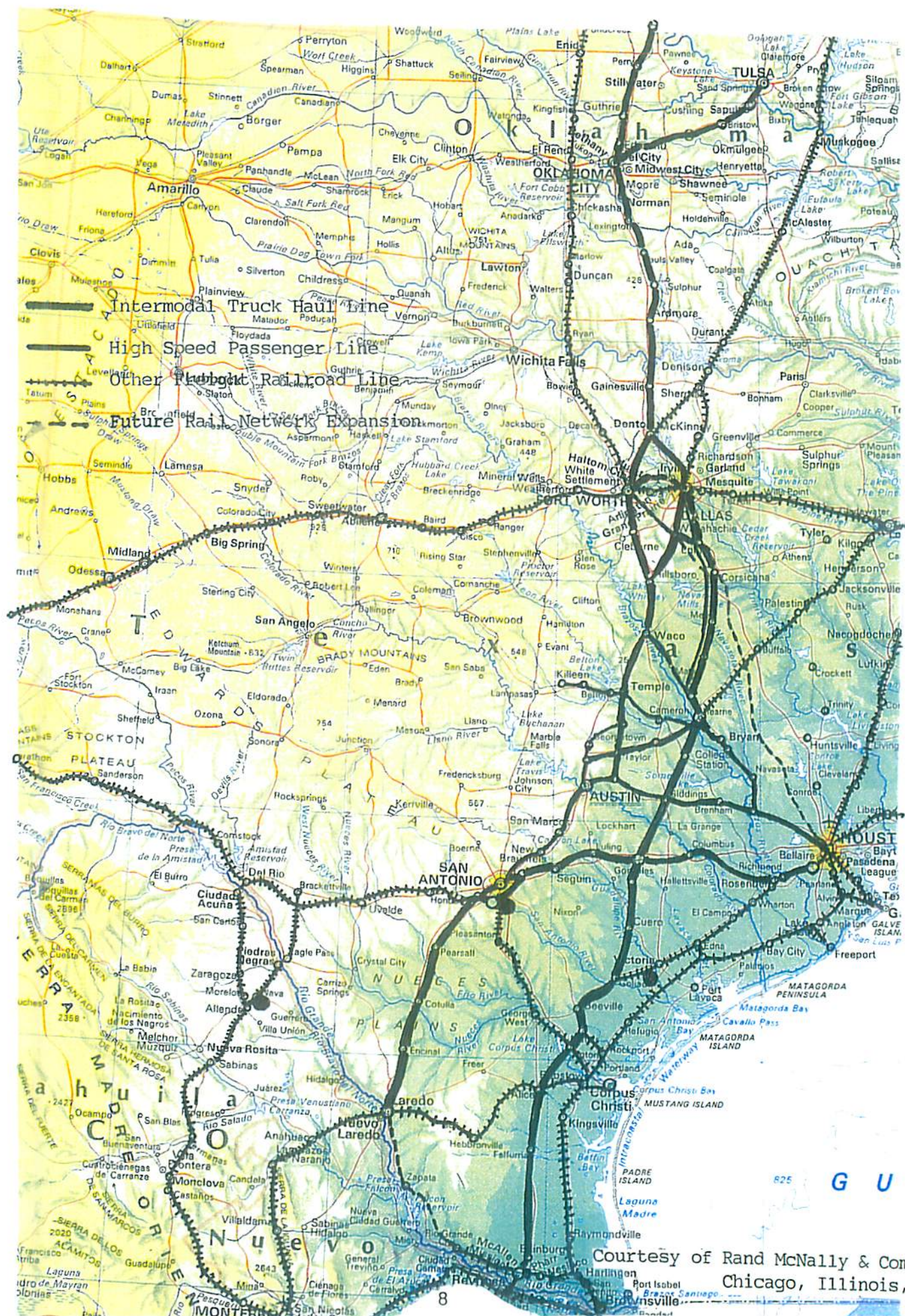
The rolling stock investment requirements between a 2010 startup and a 2025 full scale operation must also be included in the capital cost estimate unless the equipment is leased from the supplies. In Texas, the total rolling stock purchase costs between 2010 and 2025 are \$2.00 billion for the high-speed passenger train sets and \$2.10 billion for the intermodal freight truck haul system for locomotives plus flat cars and passenger cars for drivers using a "hook and haul" system with a total rolling stock cost of \$4.10 billion in the Texas Triangle. For both the fixed facilities and rolling stock, the total capital cost for the entire Texas Triangle high-speed passenger rail and intermodal truck rail haul service is estimated at \$35.25 billion to \$38.15 billion for the entire 1,730 to 2,000 mile route network.

The connecting routes along the South Central and Gulf Coast high-speed rail passenger corridors must be included as they impact the overall capital cost of the regional high-speed rail connections. The estimated capital costs of the connecting South Central and Gulf Coast Corridor high-speed rail passenger lines in Arkansas, Louisiana and Oklahoma are expected to nearly double the overall project cost by \$30.75 billion for a 1,230 mile network. The total capital cost of the 3,230 mile-long high passenger and intermodal truck haul route network in Texas, Arkansas, Louisiana and Oklahoma will be \$70.30 billion when an added charge of \$1.40 billion is included for additional rolling stock with \$64.30 billion for fixed facilities and \$5.50 billion for rolling stock in total for the entire route network.

The proposed high-speed rail passenger system is intended to be financed through a public-private partnership through a combination of debt and equity private sources as well as through Federal, State and Local transit authority contributions. It is intended that the Triangle Railroad Holding Company will be the primary financing entity through private sector loan and bond investments for the high-speed rail passenger service. The Union Pacific Railroad will have the primary role of being landowner of the actual railroad rights-of-way plus to provide contract maintenance and operated services to the high-speed passenger railroad as well as to operate the intermodal freight transport system. These private sector arrangements will be based on the ability of the Triangle Railroad Holding Company and the Union Pacific Railroad to formulate and implement a joint venture to build and operate the proposed high-speed rail passenger system in the Texas Triangle plus the associated intermodal and other rail freight services in conjunction with a series of Federal, State, County and Municipal governmental partners.

It will also be necessary to provide coordination with the Burlington Northern Santa Fe (BNSF) Railway for the collocation of the high-speed rail passenger line with their existing freight tracks between Cameron, Temple and Copperas Cove, Texas. There will be new rights-of-way to be acquired between Mumford and Cameron for the eastern extension of this line for the connection plus for the bypasses at College Station plus from Mumford to Bremond and around Bremond, Groesbeck, Mexia, Corsicana and Marlin. Major new infrastructures plus a new tunnel for station access in downtown Austin and for the Union Pacific freight rail line lowering and other infrastructure improvements at and adjacent to the Tower 55 interlocking junction in Fort Worth in which some additional lands will need to be acquired. The Giddings portions of the former Southern Pacific Railroad line between Hempstead and Giddings,

LOCATION OF THE INTERMODAL TRUCK HAUL RAIL NETWORK IN THE TEXAS TRIANGLE



Courtesy of Rand McNally & Company
Chicago, Illinois

Texas along the U.S. 290 highway route from Houston to Austin which was previously abandoned will need to be repurchased as a future rail corridor for the high-speed rail passenger service.

In the public sector, the Texas Department of Transportation will be responsible for the coordination of all public sector activities related to the planning, development, and implementation of the high-speed rail passenger system in the Texas Triangle, including environmental review, regulatory permitting, and grade separation construction and public facilities. The Federal Railroad Administration will be asked to provide some financial support and will be responsible for all Federal regulatory permitting and environmental reviews for the Texas Triangle high-speed rail project. The local urban transit authorities will be responsible for combined commuter and high-speed rail operations in their respective urban areas. In particular, the Austin San Antonio Intermunicipal Commuter Rail District will jointly operate the Austin San Antonio commuter rail corridor service in conjunction with high-speed rail operation by the Triangle Railroad Holding Company where the Union Pacific freight trains will be relocated.

The support and assistance of the Texas Department of Transportation plus the affected City and County governments will be required in order to facilitate the acquisition through purchase or condemnation through eminent domain of the lands required for the new rail lines mentioned above. The need to widen the existing rights-of-way to accommodate both high-speed passenger and intermodal freight tracks with a maximum concern for safety will also necessitate the support and assistance of the Texas Department of Transportation as well as the affected City Department of Transportation as well as the affected City and County governments while maintaining minimal adverse impacts upon affected landowners. The Triangle Railroad Holding Company has already met with the Texas Farm Bureau to begin the dialogue to address the concerns of affected farms and ranches with regard to future high-speed rail development in the Texas Triangle as it would impact agricultural operations in the rural areas adjacent to the high-speed rail passenger line.

A series of economic analysis have been made of the Texas Triangle high-speed rail passenger project. The initial financial projections indicate that there will be sufficient passenger ridership to assure economic viability and profitability after a reasonable startup period for routes in the Texas Triangle and at least some of the connecting corridors as well. The proposed high-speed rail passenger system does not currently incorporate high-speed rail freight transport of high value cargoes such as express mail and package services. The containerized shipments of high value freight cargoes in parallel to high-speed passenger service on the same track would substantially enhance the economic viability of the overall high-speed rail system. This future high-speed rail network could be substantially expanded into an overall regional network throughout the Central and Southern United States as a combined network to serve both high-speed rail passenger and express cargo transport between the East Coast, West Coast and Midwest starting in Texas, including on the Union Pacific railroad lines between Fort Worth, San Antonio, and El Paso to Tucson, Phoenix and Los Angeles.

It is proposed to construct the high-speed rail passenger system in the Texas Triangle in a series of stages in parallel with the construction of the intermodal freight system. It will first be necessary to relocate the Union Pacific freight rail service from the Dallas-San Antonio corridor to a combination of new and existing lines to connect Houston, Dallas and San Antonio through Flatonia and Hearne. Then

PROPOSED ROUTE CONCEPT ILLUSTRATION OF THE HIGH SPEED AND COMMUTER RAIL LINE AT SAN MARCOS TEXAS



Concept Rendering

BALCONES CORRIDOR HIGH SPEED RAIL LINE

South Central Intermodal Transportation
Corridor
Texas Triangle High Speed Rail Project
San Marcos, Texas

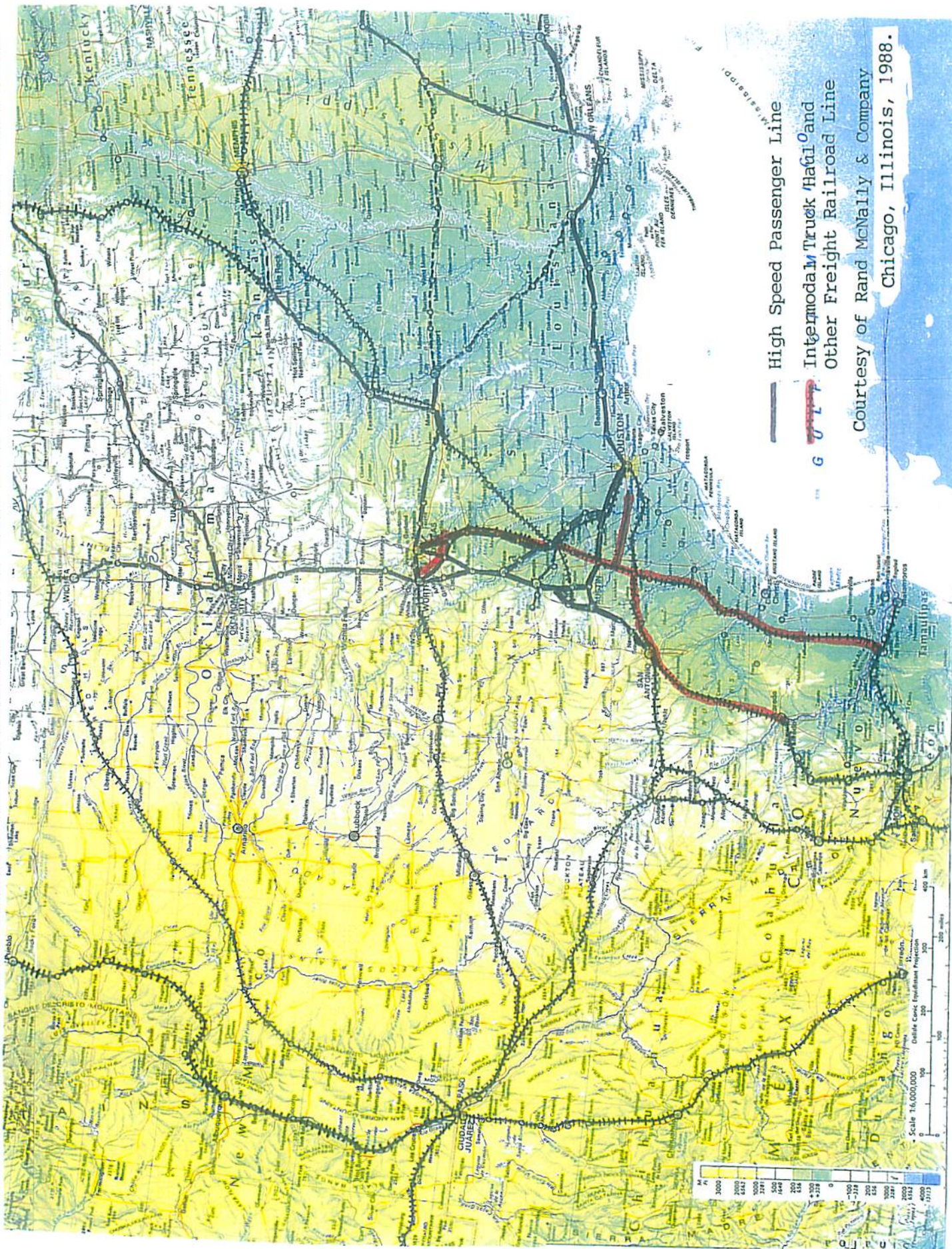
Commissioned by the
Triangle Railroad Holding Company
Dallas, Texas

Presented to the
Texas Department of Transportation
Austin, Texas
and the

Austin San Antonio Intermunicipal
Commuter Rail Authority
San Marcos, Texas

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PROPOSED HIGH SPEED PASSENGER AND INTERMODAL TRUCK HAUL RAIL LINE NETWORK IN THE TEXAS AREA



High Speed Passenger Line

Intermodal Truck Haul and Other Freight Railroad Line

GULF

Courtesy of Rand McNally & Company
Chicago, Illinois, 1988.

construction can simultaneously begin between Houston, Hempstead and Hearne through College Station, to San Antonio and Austin from Dallas and Fort Worth to Waco with initial service for high-speed rail and commuter train operations between Austin and San Antonio as the most heavily travelled corridors of the entire Texas Triangle high-speed rail project.

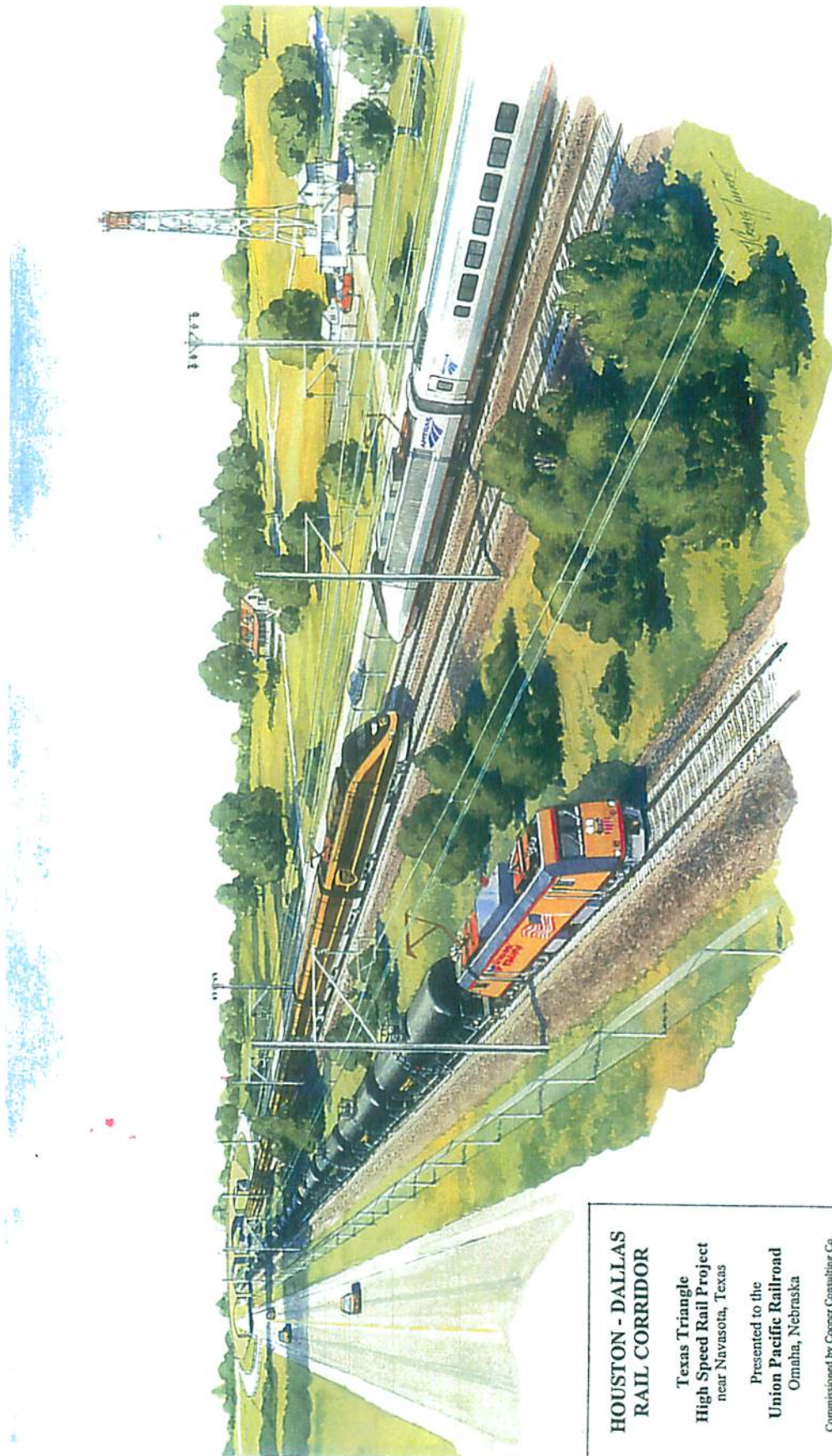
The entire intermodal truck haul rail line between Laredo and Dallas through San Antonio, Flatonia, Hearne and Corsicana must first be built so that the Union Pacific freight service can be relocated between Dallas and San Antonio without delay or interruption. A second track will need to be built over this entire route in five sections between Laredo and San Antonio from San Antonio to Flatonia, from Flatonia to Hearne, from Hearne to Corsicana, and from Corsicana to Ennis and Dallas and Waxahachie. This initial relocated freight service will use diesel locomotives with eventual conversion to electric locomotives. The six intermodal truck loading terminals will need to be built at Laredo, San Antonio, Houston, Austin and Hearne, and near Dallas plus a future terminal in McAllen in the Rio Grande Valley.

The initial development of the high-speed rail passenger system in the Texas Triangle is proposed to be the construction of an initial 270 mile-long demonstration project as a double track electrified route between Houston and Dallas through Hempstead, Hearne and Waco over the existing line of the Union Pacific Railroad. This high-speed rail passenger corridor will also be built in five sections between Houston and Hempstead, Hempstead and Mumford, Mumford and Hearne, Hearne and Corsicana, and between Corsicana and Dallas. There will be parallel high-speed passenger and intermodal truck haul railroad tracks between Mumford and Dallas on parallel separate tracks which will employ sidings at periodic intervals and a relocated freight track along the existing Union Pacific Railroad right-of-way between Hearne and Corsicana as the major part of a 250 mile-long high-speed rail line between Houston and Dallas if the Waco route is not used. This high-speed rail line will have 100 miles of common routes at both the southern and northern ends between Houston and Hempstead of 50 miles and another 50 miles between Hillsboro and Dallas with a separate 50 mile route from Hillsboro to Fort Worth over which commuter trains would operate with high-speed passenger trains.

The existing Union Pacific rail freight service between Houston and Hempstead and Mumford would need to be accommodated over a single track operation would be partially on tracks for commuter rail. There would be initial commuter rail and high-speed passenger service between Houston and Hempstead with high-speed passenger service to College Station and then to Waco and Dallas. The high-speed rail service extensions from Mumford to Temple and from Hearne to Waco would be built as a track lines with a single track line from Mumford to Temple with passing sidings and appropriate signaling plus safety separations from parallel freight service operations on either the Union Pacific or Burlington Northern Santa Fe. It is possible that the high-speed rail passenger line could be relocated from Ennis to Waxahachie and then on a common track into Dallas with a separate line to Fort Worth.

The connecting rail corridor will then go between Austin and Waco and Dallas, Fort Worth along the Interstate 35 freeway corridor with a junction at Hillsboro, and between Hempstead and Austin along U.S. Highway 290 and between Hearne and Waco along State Highway 6 will be completed as a double track line. Separately, the intermodal rail freight bypass network between Laredo and San Antonio and Houston to San Antonio plus Flatonia to Dallas will serve as the main freight transport network for the

ROUTE CONCEPT ILLUSTRATION OF HIGH SPEED RAIL PASSENGER SERVICE IN PARALLEL TO RAILROAD FREIGHT SERVICE ALONG THE UNION PACIFIC RAILROAD LINE IN THE TEXAS TRIANGLE AT NAVASOTA



HOUSTON - DALLAS RAIL CORRIDOR

Texas Triangle
High Speed Rail Project
near Navasota, Texas

Presented to the
Union Pacific Railroad
Omaha, Nebraska

Commissioned by Cooper Consulting Co.
Kirkland, Washington

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Union Pacific Railroad's intermodal and other freight trains. There will be a separate track over the route for local freight service primarily at night along the entire Dallas to San Antonio corridor which will be used for commuter rail service during the day which could later be expanded to double track.

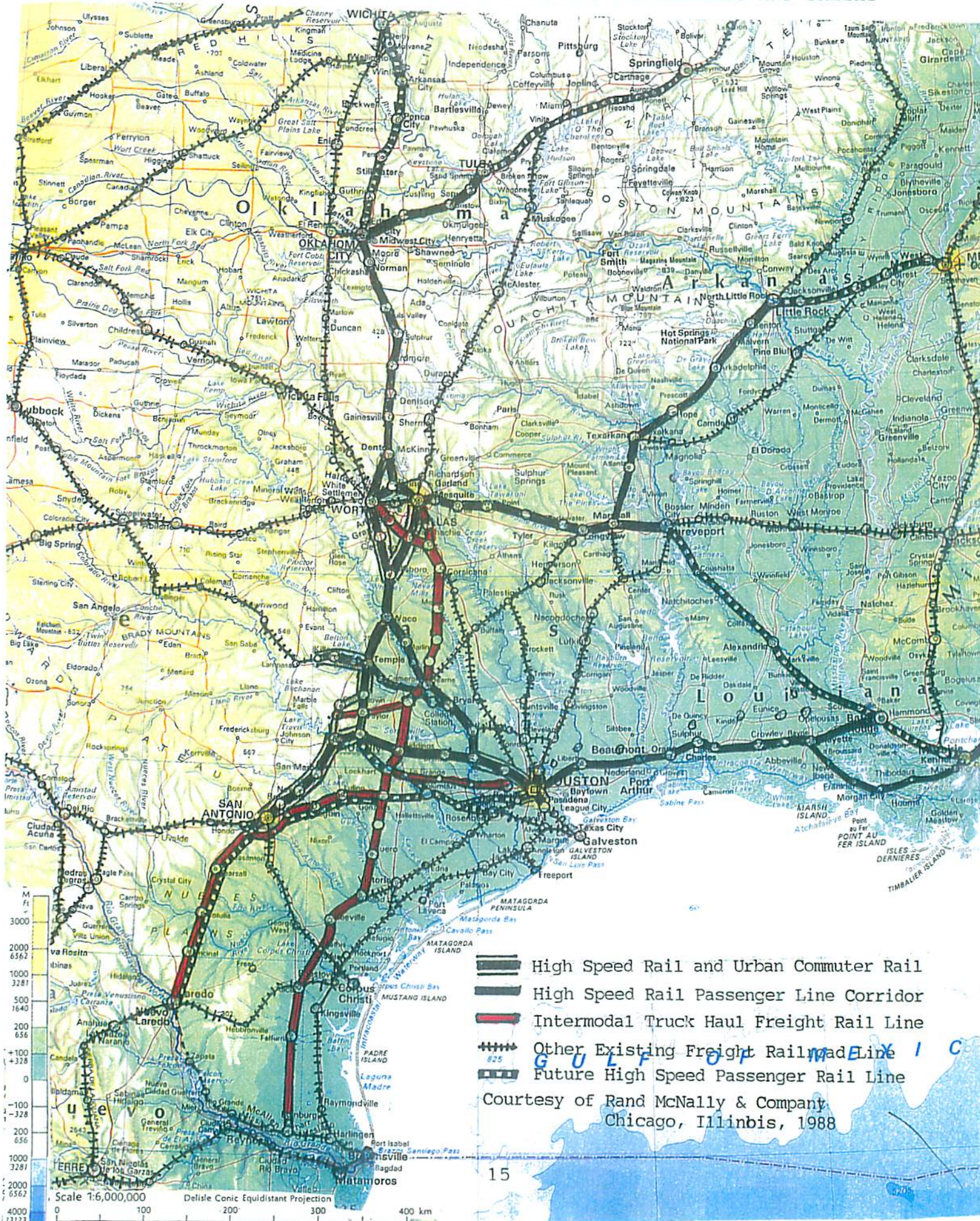
It is suggested that the ownership of the high-speed rail track and facilities be with the Triangle Railroad Holding Company between Houston and Dallas-Fort Worth, between Houston and Austin, and between Austin and Dallas-Fort Worth with the right-of-way continuing to be owned by the Union Pacific Railroad along the entire routes as well. The Austin to San Antonio corridor can then be jointly owned by the Triangle Railroad Holding Company (TRHC) and the Austin San Antonio Inter-Municipal Commuter Rail District (ASAIMCRD), or else be owned by TRHC with an operating lease to ASAIMCRD, or the reverse. Similar arrangements may be necessary with the Houston Metro for commuter rail service between Houston and Hempstead and the Dallas Area Rapid Transit between Dallas and Corsicana and the Fort Worth Transportation Agency between Fort Worth and Hillsboro. It will be necessary to have cooperative service agreements with each of the above listed commuter rail authorities for combined high-speed passenger and commuter rail service along common routes which may also include a connection between Temple and Copperas Cove.

The advantage of the Union Pacific Railroad right-of-way for high-speed rail passenger service in the Texas Triangle is that trains can go to multiple locating from each end point urban location over common trackage to reduce costs. The trains on the southern end will go between Houston and Dallas as well as Houston and Austin while they will go between Houston and Dallas as well as San Antonio and Dallas on the northern end. There will be an intermediate section from Hempstead to Hearne where trains can go between Houston and Dallas by way of Waco with some trains going to Waco. There will be separate single track freight lines in parallel to the high-speed passenger tracks between Mumford and Waco. There will also be common high-speed rail trackage for trains going between Austin and San Antonio as well as for trains going to both Houston and Dallas.

The proposed high-speed rail passenger line between Houston and Dallas along the Union Pacific Railroad line is intended to have separate parallel commuter rail operations at both its southern and northern ends and direct combined rail service to both the Houston Bush Inter-Continental Airport and the Dallas-Fort Worth airport. The Harris County Metropolitan Transit Authority (Houston Metro) plans to implement a commuter rail service from downtown to northwest Houston to Hempstead as well as to implement service to Houston Bush Inter-Continental Airport. Commuter rail service may also be initiated from Waxahachie or Ennis or both Dallas and Fort Worth in parallel to the proposed high-speed rail service to both cities at the northern end of the high-speed rail line, including to Dallas Fort Worth Airport on the Trinity Rail Express commuter rail line between Dallas and Fort Worth.

The proposed high-speed rail passenger line of the Triangle Railroad Holding Company between Houston and Dallas will be double track and electrified throughout the entire distance. The high-speed trains going between Houston and Fort Worth will go on the single track route between Hearne and Waco and then transfer to the Dallas Fort Worth San Antonio route from Waco to Hillsboro and the single track line to Fort Worth. The end point section from Houston to Hempstead will have four tracks

ROUTE LOCATION OF THE PROPOSED HIGH SPEED RAIL PASSENGER PROJECT IN THE TEXAS TRIANGLE AND THE SOUTHWESTERN STATES PLUS THE INTERMODAL TRUCK HAUL NETWORK IN TEXAS TO CONNECT LAREDO, HOUSTON, SAN ANTONIO AND DALLAS



for combined commuter and high-speed passenger service at the south end as well as the route between Corsicana and Ennis to Dallas either directly or by way of Waxahachie to Dallas.

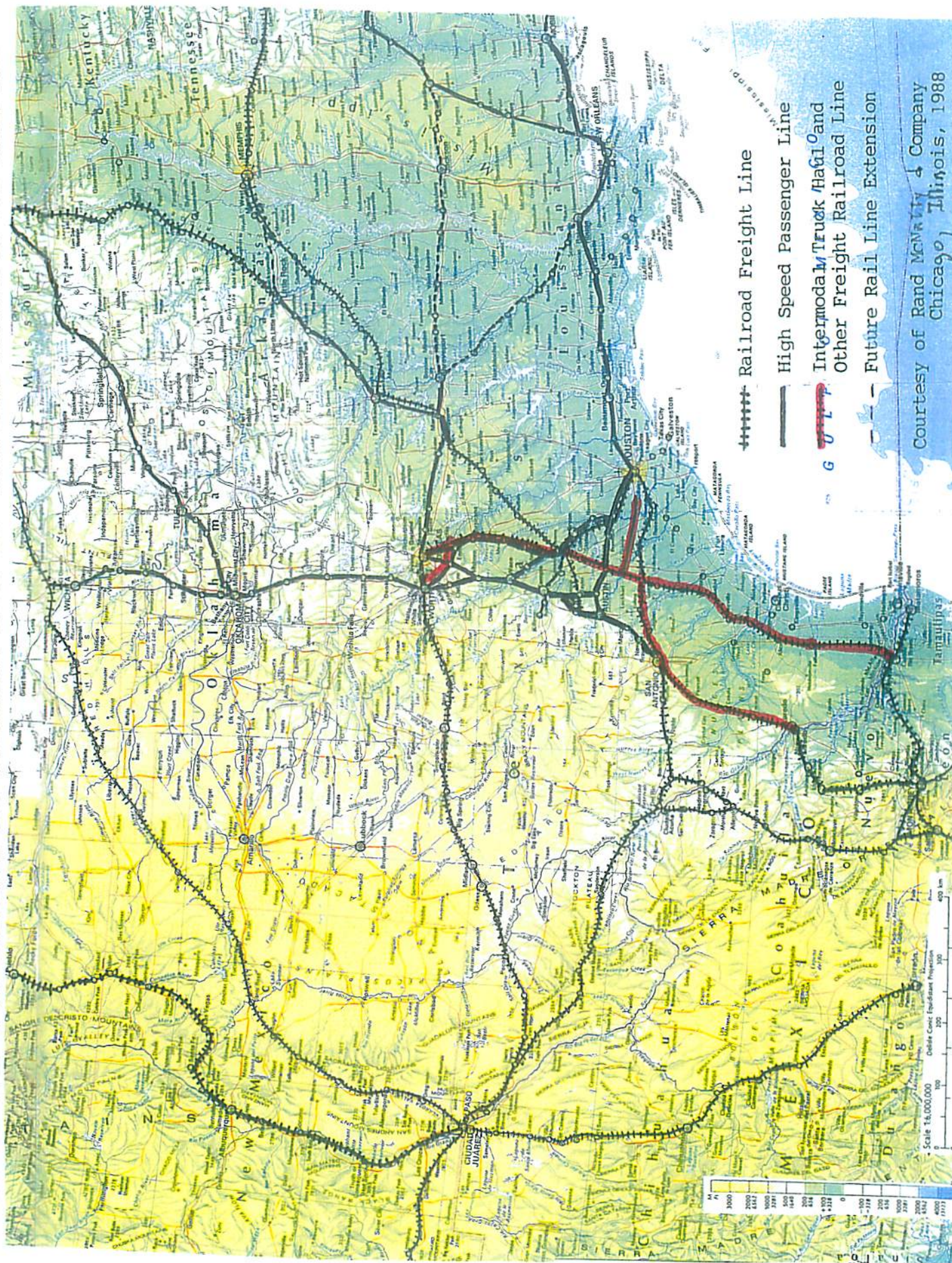
The proposed station locations for the proposed high-speed rail line in the Houston-Bryan College Station-Dallas intercity corridor are as follows. A new terminal will be built near downtown Houston at the interchange between the Gulf and Katy Freeways, while the northern end terminal will be at the existing Dallas Union Station. There will be intermediate stations located in northwest Houston, Hempstead, College Station, Hearne, Mexia, Corsicana and South Dallas between Houston and Dallas and Waxahachie if the route from Ennis to Waxahachie is used. For the high-speed passenger trains going from Houston to Fort Worth, there will be stops at northwest Houston, Hempstead, College Station, Hearne, Marlin, Waco, Hillsboro and Alvarado. The commuter rail sections will be from Houston to Hempstead, Hillsboro to Dallas and Fort Worth, and Corsicana to Dallas through Waxahachie. It is emphasized that there will be parallel double track electrified high-speed passenger and intermodal truck haul rail freight lines operating between Mumford and Ennis along the Union Pacific Railroad line from Houston to Dallas for the 945 mile-long route option.

The second high-speed rail route in the Texas Triangle is planned to be on the 160 mile-long route between Houston and Austin. This high-speed rail line will be built in parallel to and along the existing former Southern Pacific Railroad line. The eastern 50 mile portion of this line between Houston and Hempstead will be built along the existing Union Pacific Railroad right-of-way and will be developed into a future commuter rail corridor. The western 25 mile section of this high-speed rail line from Austin to Elgin will be built along the route now owned by Capital Metro in Austin, and is expected to be developed into a commuter rail corridor. The central 85 mile-long section of the right-of-way will be built on the abandoned railroad line in parallel to the U.S. Highway 290 corridor formerly owned by the Southern Pacific Railroad. There will be 75 miles of commuter rail lines along the Houston to Austin high-speed rail corridor between Houston and Hempstead on the east and from Austin to Elgin on the west. Both of these lines are expected to have four tracks with electrified service, including for commuters.

The Houston to Austin high-speed rail line will have a double track electrified rail route for the high-speed rail throughout, with an additional double track commuter rail service at each end. There will be intermediate stops northwest Houston, Hempstead, Brenham, Giddings, Elgin and Austin. The end point terminals will be at a new site in downtown Houston at the intersection of the Gulf and Katy Freeways. The Austin terminal can be located to the immediate east of downtown near the Austin Convention Center or on the west side of the downtown at the existing Amtrak rail passenger station. The high-speed passenger tracks from the east including commuter trains will go through a 2.5 mile-long tunnel under East Austin. The high-speed passenger trains will come from Houston or Dallas and Fort Worth while the commuter trains will come from Georgetown or Elgin and possibly Temple if extended.

The high-speed passenger trains and the commuter trains will leave the Austin passenger terminal and go across the Colorado River Bridge to the south to San Marcos, New Braunfels and San Antonio. The Dallas to San Antonio high-speed rail line is expected to be the most complex and expensive to build because it has a large number of communities along the route with many road-rail grade separations required. This 285 mile-long route will have two electrified high-speed rail tracks as well as either one or

PROPOSED HIGH SPEED PASSENGER AND INTERMODAL TRUCK HAUL RAIL LINE NETWORK IN THE TEXAS AREA



Courtesy of Rand McNally & Company
Chicago, Illinois, 1988

two commuter rail tracks throughout, plus the use of freight service at night. There will be end point terminals at the existing Dallas Union Station and the Amtrak (former Southern Pacific) station in downtown San Antonio, with intermediate stops at Waxahachie, Hillsboro, Waco, Temple, Georgetown, Austin, and San Marcos and at San Antonio Airport. There will be separate route exits for the commuter rail and high-speed rail leaving the San Antonio high-speed rail station which rejoins at New Braunfels. There will be trains going to multiple locations in both the southern and northern ends of the Dallas-San Antonio corridor over the 85 miles between Austin and San Antonio as well as in the future to the south of Laredo, Corpus Christi and to the Rio Grande Valley in south Texas.

It is expected that much, if not all of the future railroad line between San Antonio and Dallas will be owned by an expanded Austin-San Antonio Inter-Municipal Commuter Rail District through a turnkey privatization design, build, operate contract agreement. An alternative arrangement would be for the Austin-San Antonio high-speed rail corridor to be owned by the Triangle Railroad Holding Company with a lease payment or usage fee paid by the Commuter Rail District where TRHC would be responsible for financing, building and operating the commuter rail facilities on a reimbursement basis. An agreement would be made with a consortium to include the Triangle Railroad Holding Company plus the French National Railways and the Stantec engineering company in conjunction with other construction and equipment supply companies. Additional public financial support for the Dallas to San Antonio corridor high-speed rail line will come from the Texas Department of Transportation and the Federal Railroad Administration in addition to local funds. It is planned to build the section of the route between Dallas-Fort Worth and Austin first and place it in operation before the Austin to San Antonio section. The construction of the Austin to San Antonio section will proceed as a joint commuter and high-speed rail corridor with the initial operation for commuter trains.

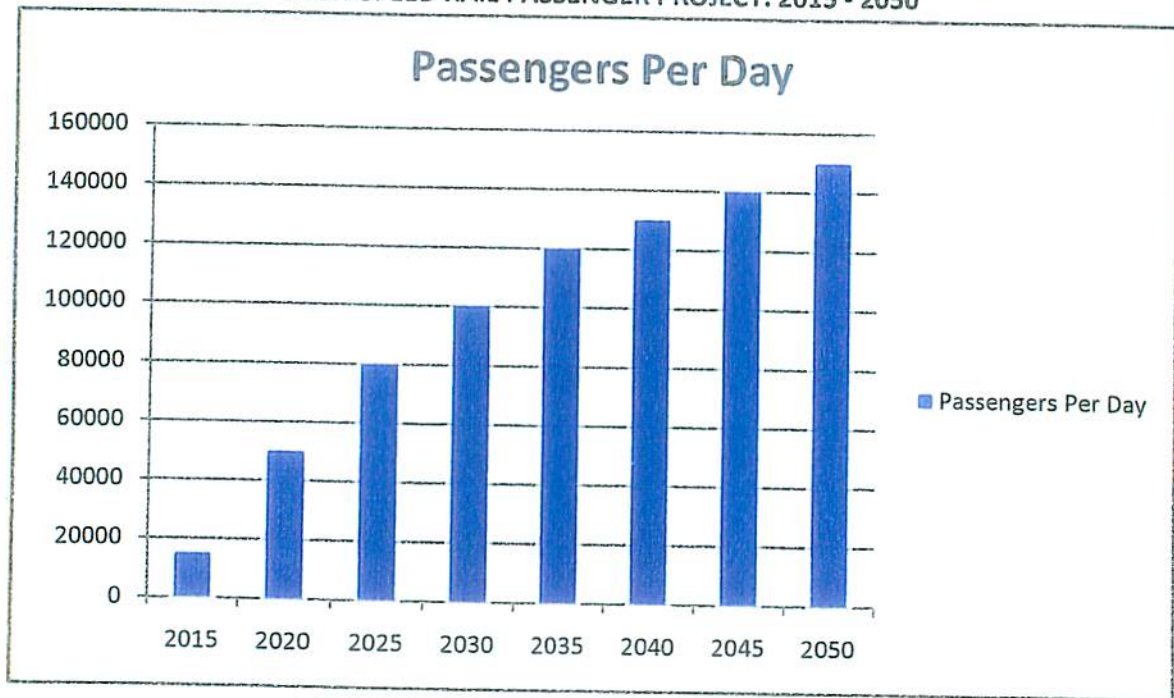
One issue which will impact both high-speed passenger and commuter rail service is the route location. The possibility of having separate routes between Houston and Austin as well as Houston to San Antonio involves the real question of the long term goal of the high-speed rail project as being only within the Texas Triangle. The possibility of having separate routes between Austin and San Antonio to Houston would necessitate constructing new routes between Columbus and La Grande and perhaps from Houston to Harwood with a total distance of 42 miles. However, the high-speed passenger trains could then avoid the congested Austin to San Antonio route with its high construction costs and constrained train speeds. It is estimated that the separate route options to Austin and San Antonio from Houston would raise the capital cost of the high-speed rail system by as much as \$4.5 billion, but could result in increased total system ridership as much as 10,000 passengers per day.

It will be necessary to conduct additional studies to validate these above estimates of capital cost and passenger ridership for the alternative routes between San Antonio and Houston. It will also become necessary to evaluate the alternative routes and the proposed financial structure for this initial high-speed rail corridor service between Houston and Dallas plus between Houston and Austin as well as between Dallas and Austin is through a combination of private, State, Federal, local transit and foreign investment sources. This project is intended to be developed as a joint partnership between the Triangle Railroad Holding Company and the Union Pacific Railroad Company and the French National Railways (SNCF) in cooperation with the Texas Department of Transportation and the Federal Railroad

**ESTIMATED PASSENGER RIDERSHIP BY CORRIDOR FOR THE
TEXAS TRIANGLE HIGH-SPEED RAIL PASSENGER PROJECT**

Inter-City Corridor	Startup Year	<u>Passenger Ridership – Passengers/Day</u>		
		2020	2030	2050
Houston-Dallas	2015	25,000	45,000	51,000
Dallas-San Antonio	2018	15,000	30,000	38,000
Houston-Austin	2017	8,000	20,000	23,000
Hempstead-Waco	2020	2,000	5,000	8,000
Total System	—	50,000	105,000	120,000

**ESTIMATED PASSENGER RIDERSHIP FOR THE TEXAS TRIANGLE
HIGH-SPEED RAIL PASSENGER PROJECT: 2015 - 2050**

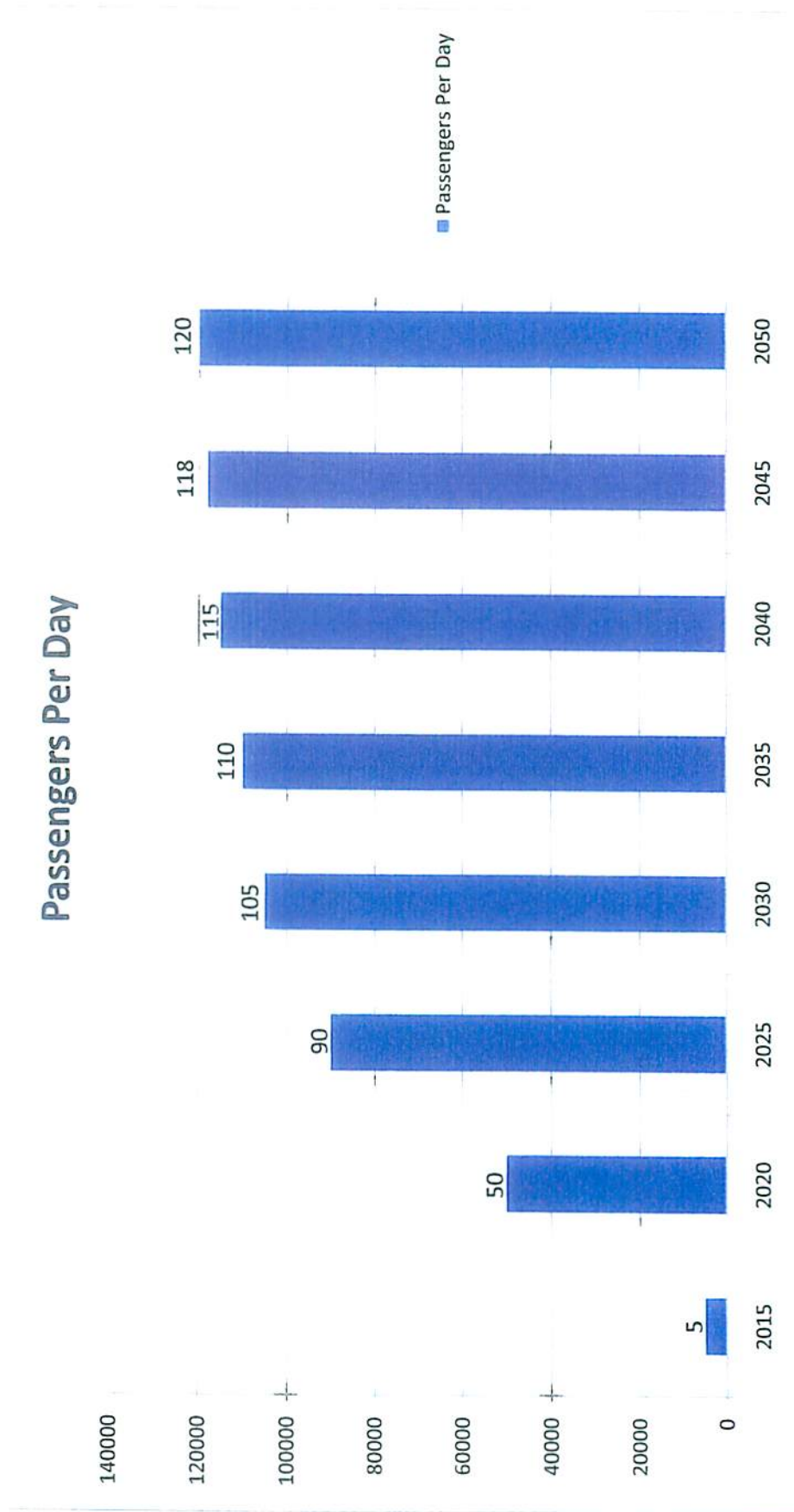


**ESTIMATED TRUCK TRAFFIC VOLUMES FOR THE
TEXAS TRIANGLE INTERMODAL RAIL TRUCK HAUL SERVICE**

Inter-City Corridor	Startup Year	<u>Intermodal Truck Hauls – Trucks/Day</u>		
		2020	2030	2050
Laredo-San Antonio	2014	5,000	7,500	15,000
San Antonio- Dallas	2013	101,000	15,000	25,000
Houston-Dallas	2016	3,000	10,000	15,000
Houston-San Antonio + Austin-Dallas	2018	2,000	5,000	10,000
Total System	—	15,000	30,000	50,000

Notes: 1. Assumes Laredo traffic goes to Dallas from San Antonio.
2. Combined traffic for the two routes together.

ESTIMATED PASSENGER RIDERSHIP FOR THE TEXAS TRIANGLE HIGH-SPEED RAIL PASSENGER PROJECT MINIMUM ROUTE NETWORK (735 MILES): 2015 – 2050



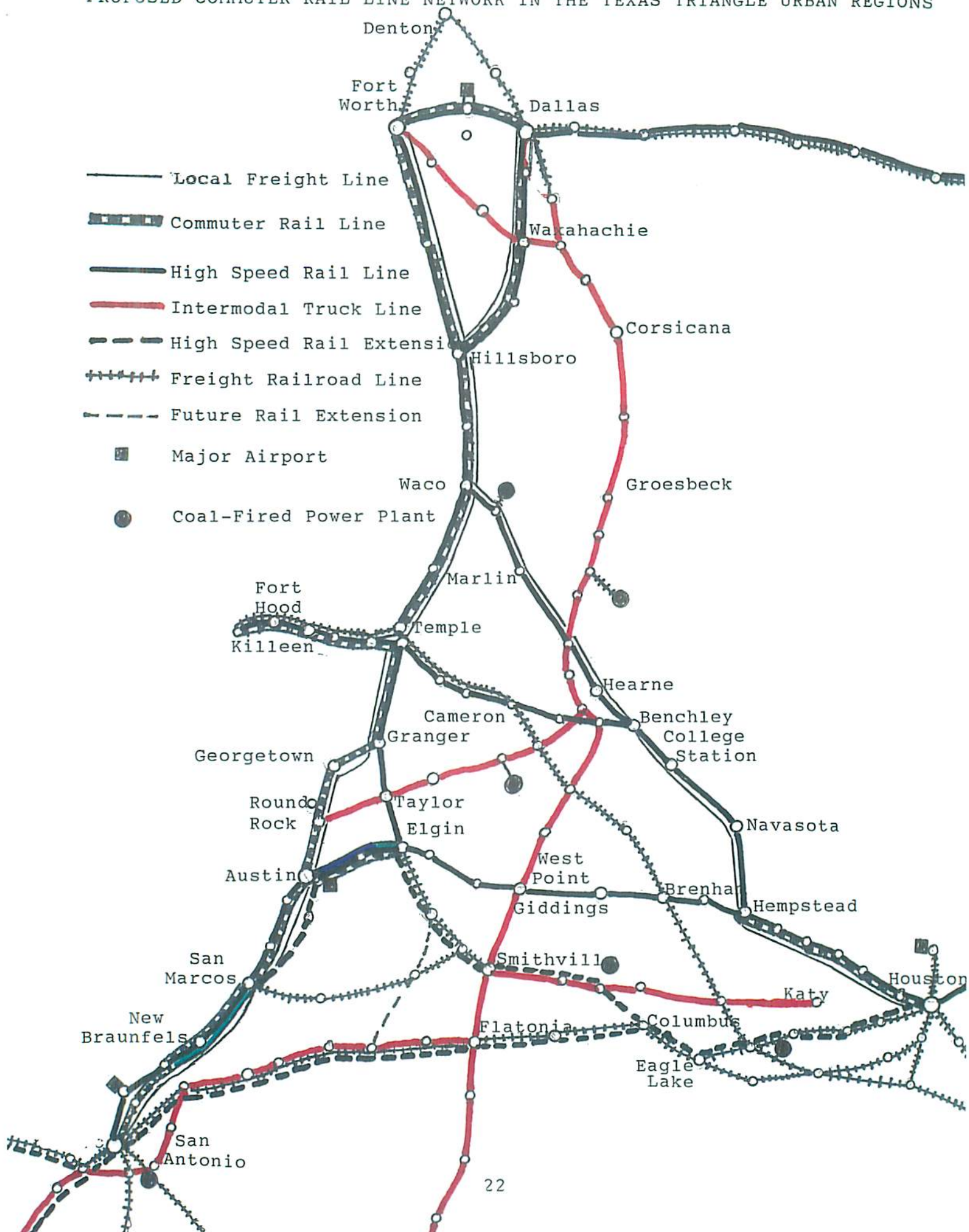
Administration of the U.S. Department of Transportation, plus the Houston, Dallas and Fort Worth urban transit agencies. This project in the Houston-Dallas-San Antonio Triangle inter-city corridor is intended as a development program for both high-speed rail passenger services as well as for inter-city freight railroad electrification. The existing Union Pacific Railroad main line freight service is expected to be continued or expanded, whether on the existing routes between Houston and Dallas and San Antonio which will generally be relocated to other existing Union Pacific Railroad lines between Houston and San Antonio through Flatonia and Hearne to Dallas and Fort Worth and elsewhere in Texas.

There will be several rail commuter operations within the Texas Triangle where high-speed passenger trains will operate in combination along common rights-of-way. These combined rail commuter and high-speed rail passenger services along common routes will become an integral part of the overall high-speed passenger networks in the Texas Triangle in the Houston-Dallas, Houston-Austin and Dallas-San Antonio corridor. The proposed high-speed rail passenger line between Houston and Waco and Dallas-Fort Worth on the Union Pacific Railroad line is intended to have separate parallel commuter rail operations at both its southern and northern ends. Commuter service between Houston and Hempstead with the Houston Metropolitan Transit Authority will be operated on the same line as high-speed rail service between Houston and Dallas plus Houston and Austin. Commuter service at the northern end between Corsicana, Ennis, Waxahachie and Dallas would be operated by the Dallas Area Rapid Transit District, which would serve the Dallas-San Antonio route between Dallas and Waxahachie and Hillsboro. Separate commuter rail passenger service would operate between Fort Worth Alvarado and Hillsboro and between Fort Worth, Mansfield and Waxahachie by the Fort Worth Transportation Authority.

Commuter rail service will be operated by the Capital Metropolitan Transit Authority (Capital Metro) on the western end of the Houston-Austin high-speed rail corridor between Austin and Elgin. This commuter rail service will go to a new central rail passenger terminal which will be at a site to be determined in Austin on either the east side or in the downtown area. It is then suggested that there will be an initial high-speed rail terminal on the east side of Austin for the high-speed rail line from Houston at the same point at the commuter rail service to Elgin. A future high-speed rail station in or near downtown Austin can later be developed in conjunction with the Dallas to San Antonio rail line. The Houston to Austin high-speed rail line will be built primarily by the Triangle Railroad Holding Company in conjunction with the Houston Metro and Capital Metro transit agencies. Financial support will be from the State of Texas and the Federal Government of the Houston-Hempstead and Austin-Elgin commuter railroad route segments in the Houston Austin high-speed rail corridors.

It is expected that much, if not all of the future railroad line between San Antonio and Dallas will be owned by an expanded Austin-San Antonio Inter-Municipal Commuter Rail Authority through a turnkey privatization design, build, operate contract arrangement. This agreement will be with a consortium of the Triangle Railroad Holding Company plus the French National Railways, Stantec and AECOM engineering companies in conjunction with other construction and equipment supply companies. Additional financial support for the Dallas to San Antonio corridor high-speed rail line will come from the Texas Department of Transportation and the Federal Railroad Administration. It is planned to initially have commuter rail service between San Antonio and Austin to Georgetown which will then be extended to Temple and Waco from the south along the Union Pacific Railroad lines. In addition, there is

PROPOSED COMMUTER RAIL LINE NETWORK IN THE TEXAS TRIANGLE URBAN REGIONS



expected to be commuter rail service from Temple to Belton and Killeen to Copperas Cove via Fort Hood along with high-speed rail branch line along the Burlington Northern Santa Fe Railway line. Commuter rail service can be extended to the north from both Dallas and Fort Worth to Waxahachie and Hillsboro to Waco to join the entire system together into a single combined network with the San Antonio Austin Georgetown route along the expanded Dallas-San Antonio corridor.

The proposed plans for the development of the South Central Corridor and Gulf Coast Corridor high-speed rail passenger projects are somewhat more uncertain at the present time. There are two segments of the South Central Corridor emanating from Dallas to both Oklahoma City and Tulsa to the north, as well as Shreveport and Little Rock to the east, both of which are 370 miles long. Initially, the Oklahoma high-speed rail line serves both Dallas and Fort Worth, metropolitan areas with connections to Oklahoma City and Tulsa. A combination of double track electrified routes is used from Dallas to Oklahoma City, with a double track electrified route from Oklahoma City to Tulsa. The Dallas to Oklahoma City route segment is planned to be built along the Burlington Northern Santa Fe Railway main line, while the Oklahoma City to Tulsa route segment would be built in the center median of the Turner Turnpike. In addition, the Dallas-Oklahoma City high-speed rail line can be extended to Wichita, Kansas and eventually to Kansas City. The Oklahoma City to Tulsa high-speed rail line could be extended from its Tulsa terminals and the line extended in the future to Springfield and St. Louis and to Chicago.

The other South Central Corridor high-speed rail line emanating from Dallas only would go along the existing Union Pacific Railroad main line to the east to Longview and Marshall as a double track electrified line. This line then splits into separate single track electrified routes with one going east to Shreveport and the other going north to Texarkana and to the northeast to Little Rock. All of these routes are on Union Pacific Railroad line, where the lines to Little Rock can be extended to Memphis and St. Louis. The Dallas-Shreveport high-speed rail lines can then be extended to the southeast to New Orleans and to Meridian, Mississippi but would need to connect to Norfolk Southern or to Kansas City Southern railroad lines. It is possible that the future high-speed rail line from Shreveport to Baton Rouge could be built in part on the Union Pacific Railroad line to Opelousas, and then connects to the line to Houston near Port Allen across from Baton Rouge on the west side of the Mississippi River.

The proposed Gulf Coast Corridor high-speed rail line between Houston and New Orleans will be the longest and most complicated route to build because it is the longest distance at 500 miles, with much of it having to be built on elevated causeways over swamps with large bridges over wide rivers. The Houston to New Orleans high-speed electrified rail line will have a double track northern route from Houston to Lafayette to Baton Rouge to New Orleans. In addition, there will be a single track electrified rail line from Lafayette to Thibodaux to New Orleans over the existing Amtrak line of the Union Pacific Railroad on the southern route. The main northern route will operate over the Union Pacific rail line on the western side from Houston to Lafayette and over the Kansas City Southern rail line between Baton Rouge and New Orleans at the eastern end. The center section will need to be built largely over a 35 mile-long elevated causeway over the Atchafalaya Swamp with a two mile-long bridge over the Mississippi River from Port Allen to Baton Rouge. It is also possible to build an alternative route from Lafayette to the north to Opelousas to connect with the Union Pacific northern route to Baton Rouge where an existing bridge already is in place over the Mississippi River.

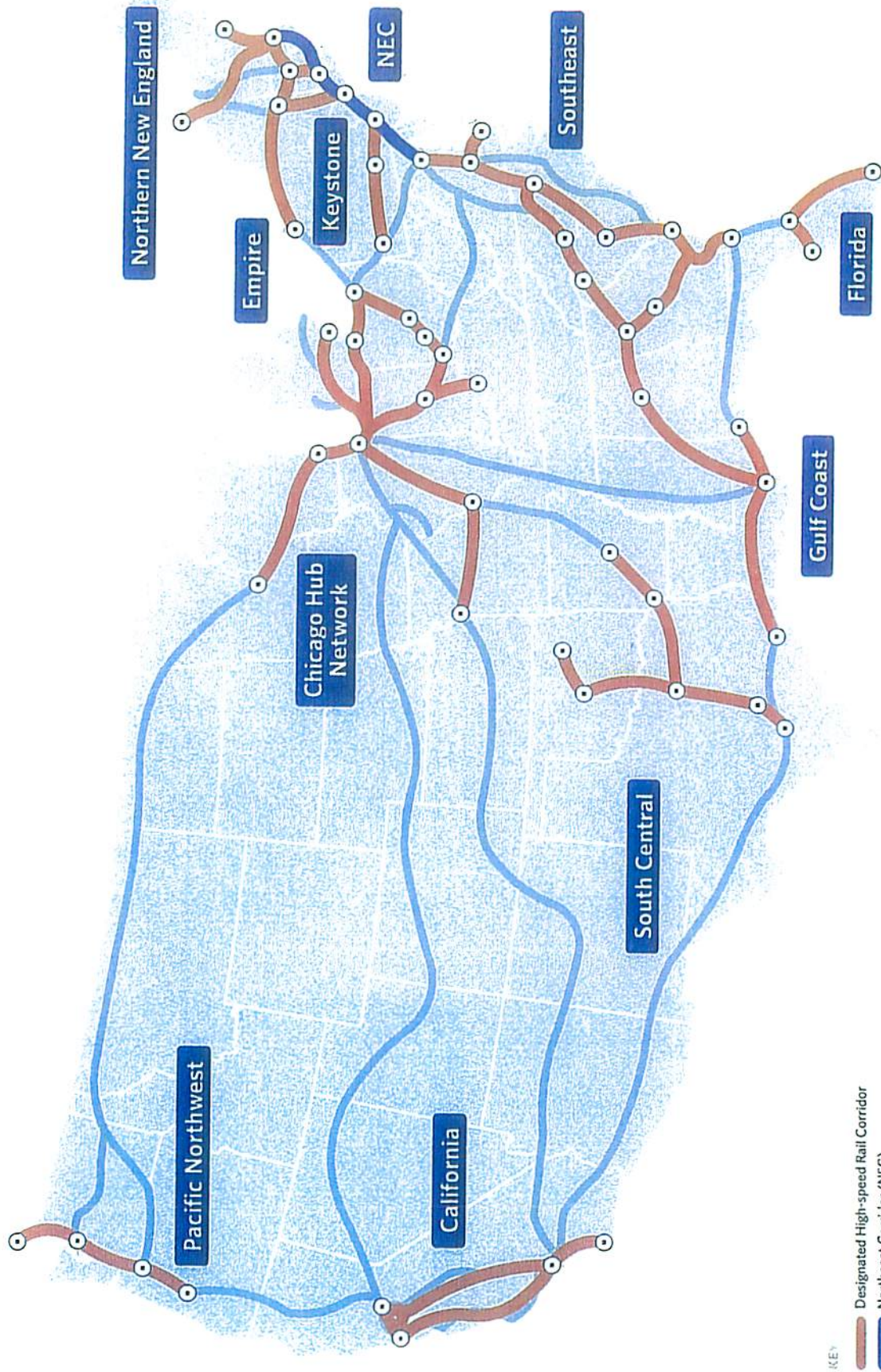
A fully integrated high-speed rail network could be developed to the southwestern United States beginning in Texas. This network could be extended to the west from Fort Worth and San Antonio to El Paso, Tucson, Phoenix and Los Angeles in the future. A future high-speed rail system across the Southwestern United States could be built so that a comprehensive network could exist between the Atlantic and Pacific Oceans. This high-speed rail system would be intended to haul both passengers and freight by a fully electrified double track system on parallel separate track of common rights-of-way, of which could be located on or adjacent to the existing Union Pacific railroad lines. This proposed western extension of the high-speed rail system would be intended to have separate high-speed and conventional railroad tracks with separate electrification facilities from a common route. It would then be advantageous to build separate high-speed rail lines from Houston to Austin and to San Antonio.

The business plan for the implementation of the high-speed rail passenger project in the Texas Triangle in Texas and the adjacent South Central Corridor and Gulf Coast Corridor involves a cooperative effort between the Triangle Railroad Holding Company and the affected State and local governments plus urban transit authorities in Texas, Oklahoma, Arkansas, and Louisiana as a public-private partnership. Every effort will be made to build the respective high-speed railroad lines along or adjacent to existing railroad rights-of-way of the Burlington Northern Santa Fe, Union Pacific and Kansas City Southern as appropriate in order to minimize adverse impacts upon landowners or other land uses. It is intended that there be no adverse impacts upon freight railroad operations in any way resulting from the construction or operation of the planned high-speed passenger railroad system with mitigation as required. The payment of these mitigation expenses will be the responsibility of the Triangle Railroad Holding Company as necessary to maintain and enhance separate parallel freight railroad service along common routes with the high-speed rail passenger service with the Union Pacific Railroad.

It is understood that in the case of the present Union Pacific Railroad line between Dallas and San Antonio that it is planned to provide an alternative route for their freight trains in exchange for being able to use their existing right-of-way. Nighttime online services to existing shippers would be preserved for local freight switching operations by the Union Pacific Railroad along the existing Dallas-Fort Worth to San Antonio rail line. The relocation of the Union Pacific Railroad's main line freight service to the new routing over the present existing route requires the installation of a second main line track over the entire route between San Antonio and Flatonia to Hearne and Dallas over a 350 mile distance. The construction and financing of this new track for the Union Pacific Railroad will be the responsibility of the Triangle Railroad Holding Company, which then makes it possible to initiate the planned San Antonio-Austin-Georgetown commuter rail service by separating the freight traffic.

The proposed high-speed rail passenger system will have the Houston-Dallas rail corridor built in stages between 2013 and 2015, while the Houston-Austin corridor is expected to open in stages between 2015 and 2017. The Austin to Dallas corridor segment is expected to open in stages between 2017 and 2018, while the Austin to San Antonio route segment is expected to open for commuter rail service between 2015 and 2017 in steps with the high-speed rail system to open between 2018 and 2020. The expected passenger ridership for the proposed high-speed rail passenger system in the Texas Triangle is expected to increase from 50,000 passengers per day in 2020 to 90,000 per day in 2025 to 110,000 per day in 2035 to 120,000 per day in 2050, including the Hempstead-Temple-Waco corridors.

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The construction of this new main line track between San Antonio and Dallas can then be extended to Laredo with a revised line from McAllen to a central junction point in Flatonia. The Triangle Railroad Holding Company will then purchase locomotives and flat cars for the Union Pacific Railroad to operate intermodal truck haul service can be initiated between Laredo, San Antonio, Flatonia and Dallas-Fort Worth over an estimated 500 mile route. Service will be on an hourly service basis in each direction with initial average train speeds of 50 miles per hour with a 10 hour one-way transit time.

The Triangle Railroad Holding Company will construct the required intermodal loading and unloading terminals at Laredo, San Antonio, Flatonia, Hearne and at Waxahachie or Dallas in the Dallas-Fort Worth area as well as later in Houston and Round Rock near Austin. An initial purchase of 50 locomotives, 25 passenger cars for drivers, and 2,500 flat cars plus spares are required for the initial services to haul 5,000 trucks per day in 2015 between Laredo and Dallas-Fort Worth by way of San Antonio, Flatonia and Hearne by the Triangle Railroad Holding Company for contract operation by the Union Pacific Railroad on a "hook and haul" basis to start the high-speed rail project in the Texas Triangle. The number of trucks to be hauled by rail in the Texas Triangle is expected to increase to 20,000 per day in 2025 and to as much as 50,000 per day in 2050 to significantly reduce roadway traffic congestion.

This intermodal truck haul rail freight service would be operated over new tracks to be financed by the Triangle Railroad Holding Company for the Union Pacific Railroad in order to relocate its existing rail service from Dallas-Austin-San Antonio line to the San Antonio-Flatonia-Hearne-Dallas line. It is planned to seek the cooperation of the Texas Department of Transportation in this intermodal truck haul effort as well as for the high-speed rail passenger service, where their role would include the construction of new grade separations along the railroad lines. The State of Texas could include roadway mitigation fees assessed to trucks to encourage them to use the rail service as is now occurring in Switzerland for trucks going between Stuttgart, Germany and Milan, Italy through the Alps Mountains. Trucks using this service should be eligible to receive greenhouse gas emission credits plus driver rest time.

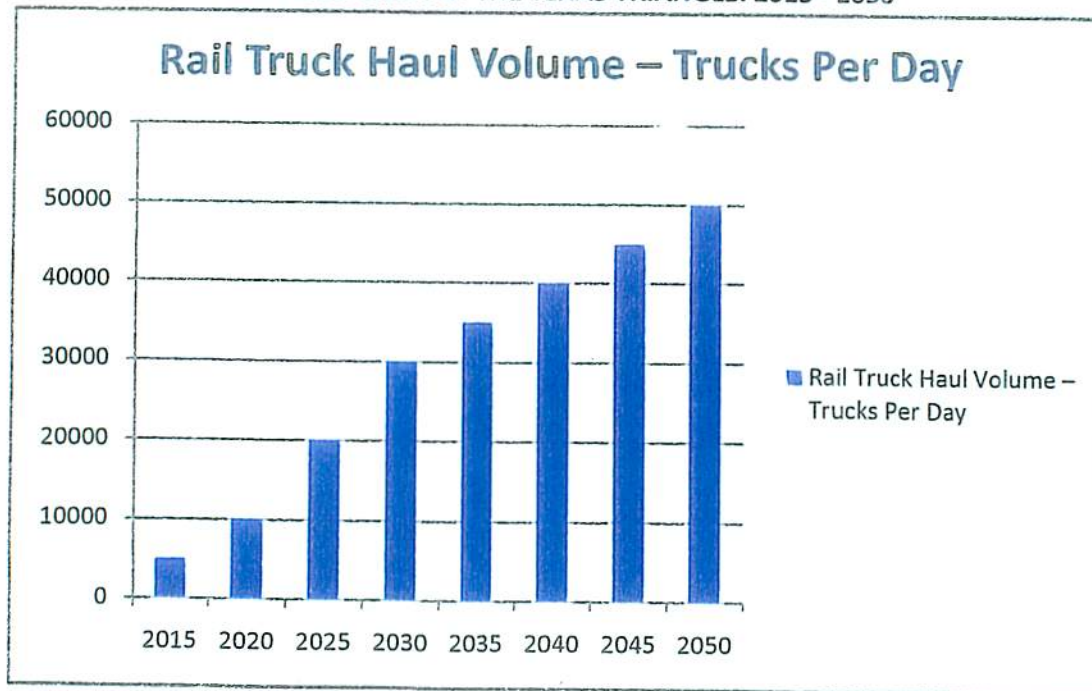
It is recommended that the minimum distance, high-speed rail passenger network by way of Hearne and Waco would be implemented over a 735 mile route of the Union Pacific Railroad in the Texas Triangle between Houston, Dallas and San Antonio with a capital cost of \$23.5 billion with construction taking place over a 10 to 15 year period. The proposed high-speed rail passenger system will generate revenues which are expected to increase from \$66 million in 2015 to \$3,385 million in 2025 to \$4,063 million in 2050, while the annual direct operating and maintenance expenses, which will increase from \$49 million in 2015 to \$389 million in 2025 to \$695 million in 2050. The expected net income will increase from \$17 million in 2015 to \$1,996 million in 2025 to \$3,368 million in 2050 for the proposed high-speed rail passenger project in the Texas Triangle along the Union Pacific Railroad right-of-way.

An intermodal truck haul transport system by rail will also be implemented in the Texas Triangle along a 1,055 mile-long intermodal truck haul rail network along the union Pacific Railroad lines. The intermodal truck haul rail system will generate annual sales revenues which are expected to reach \$650 million in 2015 and \$2,050 million in 2025 and as much as \$4,450 billion in 2050. These revenues can be compared to operating and maintenance expenses which are expected to increase from \$250 million in 2015 to \$50 million in 2025 to \$1,500 million in 2050. As a result, the estimated net available income for the

**ESTIMATED EFFECT OF INTERMODAL TRUCK HAUL TRAFFIC VOLUMES
IN THE TEXAS TRIANGLE ON UNION PACIFIC RAILROAD ROLLING STOCK REQUIREMENTS**

Calendar Year	Truck Traffic Trucks/Day	Train Traffic Trains/Day	Locomotives Number	Flat Cars Number
2015	5,000	50	25	2,500
2020	10,000	100	50	5,000
2025	20,000	200	100	10,000
2030	30,000	300	150	15,000
2035	35,000	350	175	17,500
2040	40,000	400	200	20,000
2045	45,000	450	225	22,500
2050	50,000	500	250	25,000

**ESTIMATED INTERMODAL TRUCK HAUL VOLUME BY RAIL
BETWEEN CITIES IN THE TEXAS TRIANGLE: 2015 - 2050**



intermodal truck haul shuttle service in the Texas Triangle will increase from \$400 million in 2015 to \$1,470 million in 2025 to \$2,950 million in 2050.

The combined operation of the high-speed rail passenger and intermodal rail truck haul systems in combination is expected to generate combined revenues which are expected to increase from \$716 million in 2015 to \$5,435 million in 2025 to \$8,513 million 2050. The expected operating and maintenance costs for the combined high-speed rail passenger and intermodal truck haul rail system are expected to increase from \$299 million in 2015 \$969 million in 2025 to \$3,195 million in 2050. As a result, net income is expected to increase from \$417 million in 2015 to \$3,466 million in 2025 to \$6,318 million in 2050 for both the high-speed rail passenger system and the intermodal truck haul rail network in the Texas Triangle between Houston, Dallas, San Antonio and Laredo.

The proposed high-speed rail passenger project in the Texas Triangle is expected to create between 5,000 and 15,000 direct construction jobs over a 15 year period plus 1,000 to 2,000 direct operating jobs over a 30 to 50 year period. The combined projects are expected to increase economic activity as well as to lower roadway maintenance costs, highway traffic congestion and air pollution emissions in the Texas Triangle along with increasing Federal, State and Local tax revenues. The overall project is expected to have a rate of return on investment of 10 to 15 percent per year and a payout period of 15 to 20 years.

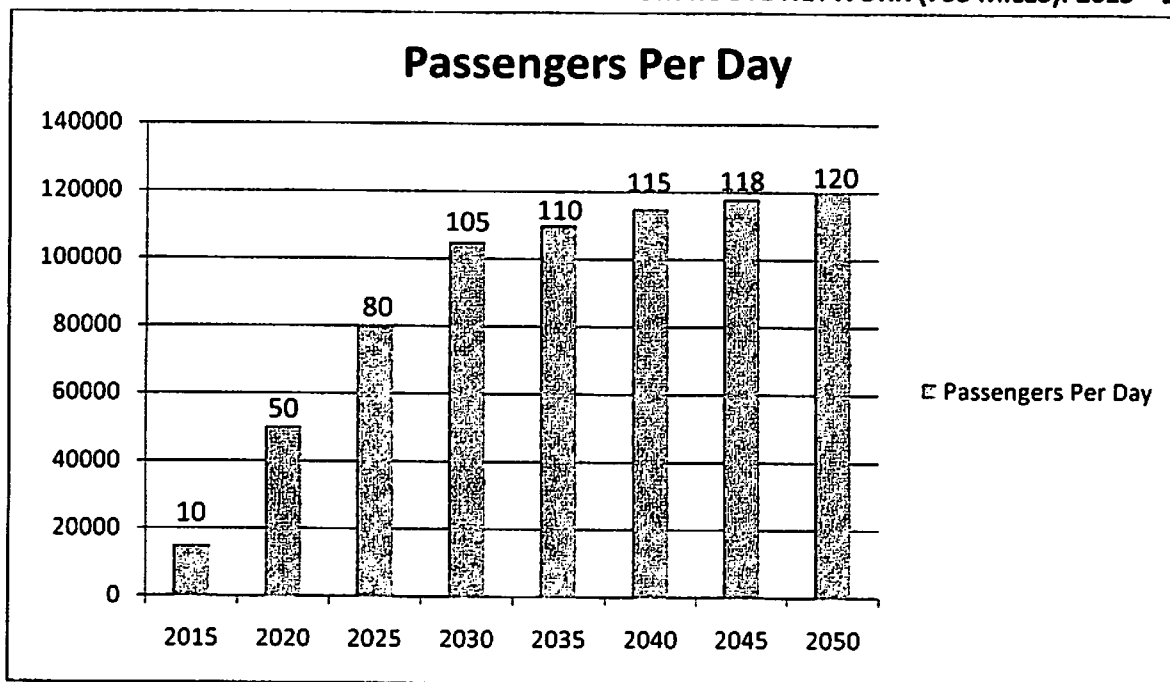
In all, the combined high-speed rail passenger and intermodal truck haul rail system can generate a significant economic return when operated in combination. It is expected that the Texas Department of Transportation will be an active participant in the combined projects by assessing user charges to trucks in the Austin San Antonio corridor plus in constructing grade separations and major non-operating income junction with the federal government infrastructure. The Austin San Antonio Inter-Municipal Commuter Rail District is expected to be an active participant in implementing commuter rail service in the Austin-San Antonio corridor with the urban transit agencies in Austin, Dallas-Fort Worth, Houston and San Antonio who are also potential active participants wire combination of high-speed rail passenger and commuter rail service is needed in the Texas Triangle.

It is recommended that the proposed high-speed rail passenger system in the Texas Triangle be planned, developed, owned, operated and financed by the Triangle Railroad Holding Company, primarily as a private sector profit-making enterprise through its Triangle Electric Railway Company connecting railroad company subsidiary. The proposed intermodal truck haul rail freight service will be planned and built for the Union Pacific Railroad by the Triangle Intermodal Truck Haul Company subsidiary of the Triangle Railroad Holding Company as a non-operating terminal and rolling stock infrastructure developer. The intermodal truck haul service would then be operated under contract by the Union Pacific Railroad for the Triangle Railroad Holding Company on a so called "hook-and-haul" basis. The electric power supply for the high-speed rail system will be provided by the Triangle Railroad Energy Company while real estate development of stations and terminals and other properties will be the responsibility of the Triangle Real Estate Development Company as operating subsidiaries of the Triangle Railroad Holding Company along with the Triangle Electric Railway Company and Triangle Intermodal Truck Haul Company.

**SUMMARY OF THE HIGH-SPEED RAIL PASSENGER SYSTEM IN THE TEXAS TRIANGLE AND THE
SOUTHWESTERN STATES WITH THE MINIMUM UNION PACIFIC TEXAS ROUTE NETWORK**

Inter-City Corridor	Distance Million	Total Cost Million \$	Unit Cost \$/Mile	Ridership Passengers/Day
Hempstead-Waco	130	3,250	25,000,000	10,000-45,000
Houston-Austin	160	5,125	32,030,000	5,000-35,000
Dallas-San Antonio	285	11,325	39,735,00	8,000-40,000
Other Routes	160	3,800	23,750,000	2,000-5,000
Total System	735	23,500	31,975,000	25,000-125,000
Dallas-Oklahoma City-Tulsa	370	7,7000	20,810,008	8,000-40,000
Dallas-Shreveport-Little Rock	370	6,650	17,975,000	5,000-35,000
Houston-Lafayette-New Orleans	500	16,400	32,800,000	7,000-45,000
Total System	1,240	30,750	24,800,000	20,000-120,000
Overall System	1,975	54,250	27,147,000	45,000-250,000
Freight Bypass	1,055	9,750	9,240,000	5,000-50,000
Total System	3,030	64,000	21,120,000	45,000-250,000

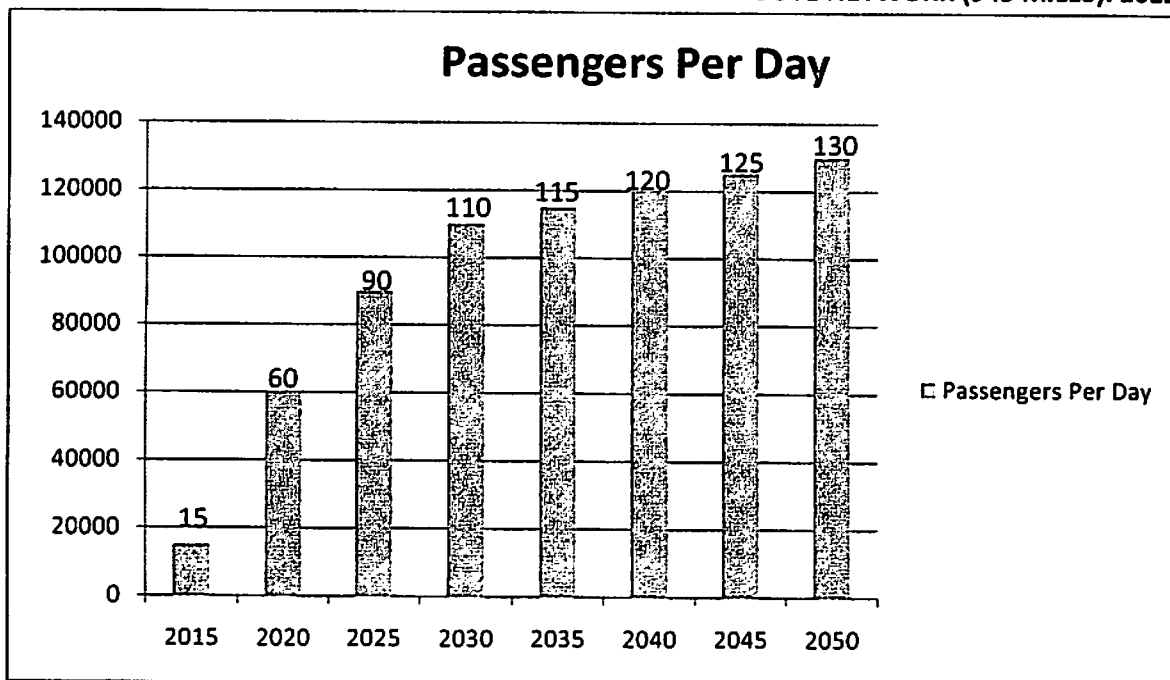
**ESTIMATED PASSENGER RIDERSHIP FOR THE TEXAS TRIANGLE
HIGH-SPEED RAIL PASSENGER PROJECT MINIMUM ROUTE NETWORK (735 MILES): 2015 – 2050**



**SUMMARY OF THE HIGH-SPEED RAIL PASSENGER SYSTEM IN THE TEXAS TRIANGLE AND THE
SOUTHWESTERN STATES FOR THE MEDIUM UNION PACIFIC TEXAS ROUTE NETWORK**

Inter-City Corridor	Distance Miles	Capital Cost Million \$	Unit Cost \$/ Mile	Ridership Passengers/Day
Hempstead-Dallas	210	5,125	24,405,000	15,000-50,000
Houston-Austin	160	5,125	32,030,000	8,000-30,000
Dallas-San Antonio	285	11,325	39,735,000	10,000-40,000
Other Routes	290	4,825	16,640,000	2,000-10,000
Total System	945	26,400	27,935,000	35,000-130,000
Dallas-Oklahoma City-Tulsa	370	7,700	20,810,000	8,000-40,000
Dallas-Shreveport-Little Rock	370	6,650	17,975,000	5,000-35,000
Houston-Lafayette-New Orleans	500	16,400	32,800,000	7,000-45,000
Total System	1,240	30,750	24,800,000	20,000-120,000
Overall System	2,185	57,150	26,155,000	55,000-250,000
Freight Bypass	1,055	9,750	9,250,000	5,000-50,000
				Trucks/Day
Total Network	3,240	66,900	20,650,000	20,000-120,000

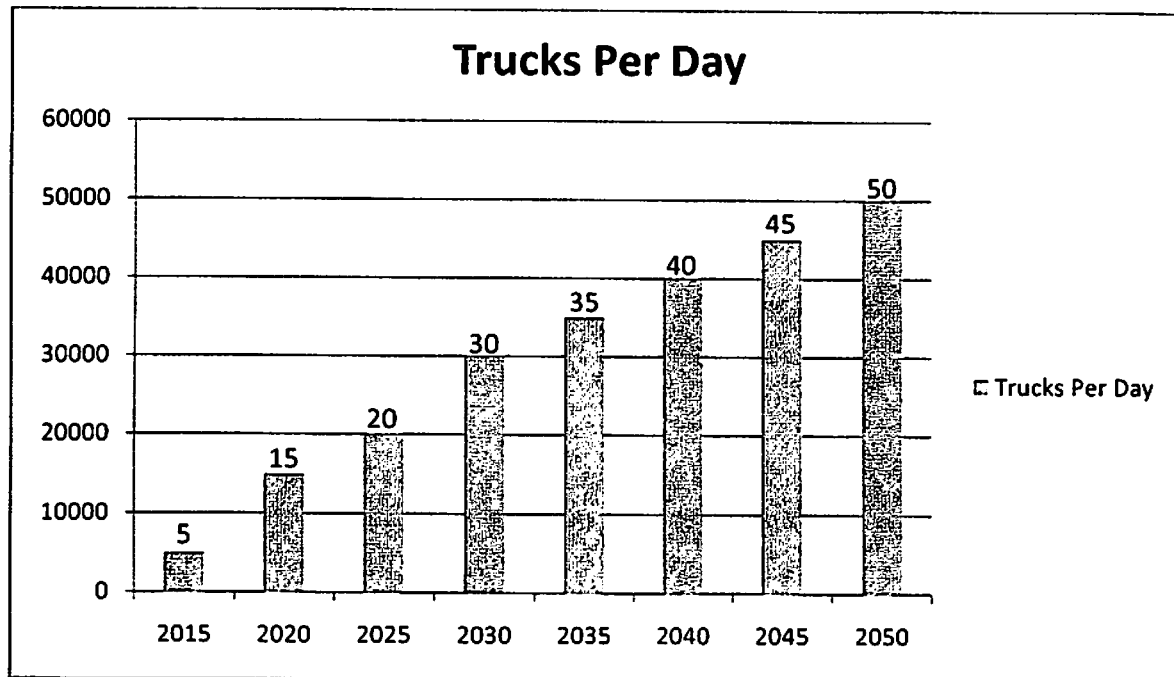
**ESTIMATED PASSENGER RIDERSHIP FOR THE TEXAS TRIANGLE
HIGH-SPEED RAIL PASSENGER PROJECT FOR THE MEDIUM ROUTE NETWORK (945 MILES): 2015 – 2050**



**SUMMARY OF THE HIGH-SPEED RAIL PASSENGER SYSTEM IN THE TEXAS TRIANGLE AND THE
SOUTHWESTERN STATES FOR THE MEDIUM UNION PACIFIC TEXAS ROUTE NETWORK**

Inter-City Corridor	Distance Miles	Capital Cost Million \$	Unit Cost \$/Mile	Ridership Passengers/Day
Hempstead-Dallas	210	5,125	24,405,000	15,000-50,000
Houston-Austin	160	5,125	32,030,000	8,000-32,000
Dallas-San Antonio	285	11,325	39,735,000	10,000-41,000
Other Routes	290	4,825	16,840,000	2,000-7,000
Total System	945	26,400	27,935,000	35,000-130,000
Dallas-Oklahoma City-Tulsa	370	7,700	20,810,000	8,000-40,000
Dallas-Shreveport-Little Rock	370	6,650	17,975,000	5,000-35,000
Houston-Lafayette-New Orleans	500	16,400	32,800,000	20,000-120,000
Total System	1,240	30,750	24,800,000	20,000-120,000
Overall System	2,185	57,150	26,155,000	55,000-250,000
Freight Bypass	1,055	9,750	0,250,000	5,000-50,000
				Trucks/Day
Total Network	3,240	66,900	20,650,000	20,000-120,000

**ESTIMATED INTERMODAL TRUCK HAUL TRAFFIC
IN THE TEXAS TRIANGLE**



**SUMMARY OF THE HIGH-SPEED RAIL PASSENGER SYSTEM IN THE TEXAS TRIANGLE AND THE
SOUTHWESTERN STATES FOR THE MAXIMUM COMBINATION BNSF UPRR TEXAS ROUTE NETWORK**

Inter-City Corridor	Distance Miles	Capital Cost Million \$	Unit Cost \$/Mile	Ridership Passengers/Day
Houston Dallas	270	6,750	25,000,000	18,000-50,000
Houston-Austin	160	5,125	32,030,000	11,000-35,000
Dallas-San Antonio	285	11,325	39,735,000	13,000-42,000
Other Routes	300	5,000	16,395,000	3,000-8,000
Total System	1,020	28,200	27,645,000	45,000-135,000
Dallas-Oklahoma City-Tulsa	370	7,700	20,810,000	8,000-40,000
Dallas-Shreveport-Little Rock	370	6,650	17,975,000	5,000-35,000
Houston-Lafayette-New Orleans	500	16,400	32,800,000	7,000-45,000
Total System	1,240	30,750	24,800,000	20,000-120,000
Overall System	2,260	58,950,000	26,085,000	65,000-255,000
Freight Bypass	1,055	9,750	9,250,000	5,000-50,000
				Trucks/Day
Total Network	3,315	68,700	20,725,000	65,000-255,000

**ESTIMATED EXTERNALIZED COST SAVINGS RESULTING FROM THE IMPLEMENTATION OF THE
PROPOSED INTERMODAL TRUCK HAUL RAIL SERVICE IN THE TEXAS TRIANGLE REGION**

Cost Savings Description	Externalized Annual Cost Savings- Million \$/Year	
	2015	2050
Roadway Maintenance Cost	300	3,550
Traffic Congestion Reduction	500	4,500
Diesel Fuel Cost Savings	800	5,450
Transportation Cost Savings	800	5,550
Non Health Savings	2,400	19,050
Air Pollution Health Effects	2,820	6,650
Total Savings	5,220	25,700

ESTIMATED INTERMODAL TRUCK HAUL VOLUME BY RAIL
BETWEEN CITIES IN THE TEXAS TRIANGLE: 2015 – 2050

