



City of Laredo Railroad Relocation Feasibility Study

November 13, 2006



Laredo Texas

Census 2000 Population: 176,576

U.S. Census Tracts

- | | |
|-------------------------|------------------------|
| ■ Water Treatment Plant | ■ Hospital |
| ✈ Airport | ✈ International Bridge |
| ⊖ Cemetary | ⊖ Landfill |
| ⊠ City Hall | ⊠ Post Office |
| ⊠ Civic Center | ⊠ Public Library |
| ⊠ Golf Course | ⊠ School |
| | ⊠ State Park |
| | □ Census Tracts |
| | □ City Limits 2003 |



November 13, 2006

Mr. Keith Selman
City of Laredo Planning Department
MPO Coordinator
1120 San Bernardo
P.O. Box 579
Laredo, TX 78042

Subject: City of Laredo
Railroad Relocation Feasibility Study

Dear Mr. Selman,

Hanson-Wilson Inc., in association with PBS&J and Alliance Transportation Group, Inc. is pleased to present the final submittal of the City of Laredo Railroad Relocation Feasibility Study. Enclosed herein is the completed Study including the data collected, the environmental fatal flaw analysis, and the evaluation of identified railroad alternatives.

We have enjoyed working with the City on this Study and believe it will support the City's future growth and planning needs within the project limits.

Sincerely,

A handwritten signature in blue ink, appearing to read "JA", is positioned above the typed name of the sender.

Jimmy Anderson, P.E.
Texas Operations Manager

City of Laredo, Texas

Railroad Relocation Feasibility Study
November 13, 2006



Executive Summary

Over the years a variety of studies have reviewed the interaction between the existing Railroad infrastructure and the businesses, residences and transportation systems within the City of Laredo and Nuevo Laredo. The Union Pacific Railroad (UPRR) and the Tex-Mex Railroad (TMRR) each provide service through Laredo crossing the international border between Mexico and the United States.

This Study will focus exclusively on the corridors in the United States within the region of the City of Laredo. The purpose of this study is to provide a high-level review of the two existing rail corridors and three proposed corridors to determine if there is a preferred alternative. The corridors to be studied include:

- The Existing UPRR Mainline Corridor
- The Existing Tex-Mex Mainline Corridor
- The Proposed Camino Colombia Corridor (SH 255)
- The UPRR Spur Corridor
- The Bypass Corridor (North and South of the Tex-Mex Line. The South Rail Bypass offers two alternatives, East and West)

The Study has been divided into three major elements:

- Data Collection
- Environmental Fatal Flaw Analysis
- Evaluation of the identified Railroad Alternatives

The Data Collection phase of this project included gathering available information from other studies, railroads, the City of Laredo and Webb County. Each corridor will be reviewed and summarized for Environmental issues. The evaluation of the Railroad Alternatives has been divided into two groups. The first group is the evaluation of the existing alignments for the UPRR and TMRR. The second group is the evaluation of the proposed corridors which will be done primarily by developing a concept alignment utilizing available aerial photography.

This study has reviewed several different alignment options and has attempted to compile the results using a weighted comparison spreadsheet to aid in developing the apparent preferred alternative.

The Corridor Evaluation Comparison Matrix ranked the Existing UPRR and Existing TexMex lines the highest at 7.945 and 7.91 respectively out of a possible score of 10.

This study thus concludes that utilizing the existing UPRR and TexMex lines is a preferred solution taking into account this studies data and criteria.

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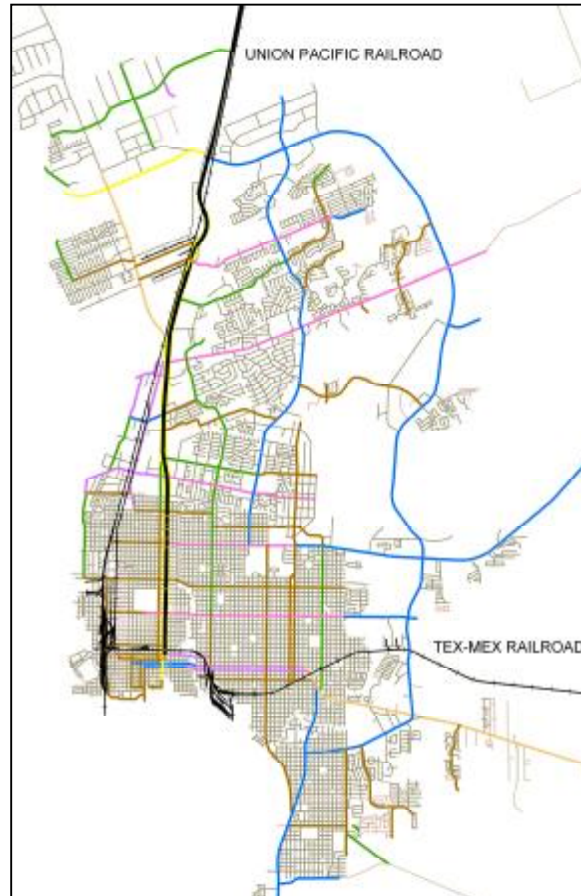
Introduction

Background

Over the years a variety of studies have reviewed the interaction between the existing Railroad infrastructure and the businesses, residences and transportation systems within the City of Laredo and Nuevo Laredo. The Union Pacific Railroad (UPRR) and the Tex-Mex Railroad (TMRR) each provide service through Laredo crossing the international border between Mexico and the United States. As depicted to the right, the UPRR mainline is generally oriented in a north-south arrangement and the TMRR mainline approaches downtown Laredo from the east. A variety of freight commodities are carried on each line between the two countries. There are also a variety of industries served from each railroad within the City and other portions of Webb County.

Previous studies have identified alternative new rail corridors that may satisfy a variety of needs. Some of those needs include:

- Improve public safety by reducing or eliminating train/vehicular interaction (grade crossings)
- Improve air quality and reduce noise within the City
- Enhance the economic development of the City
- Increase the through-put of freight traffic crossing the border



As a result, there have been a variety of corridors identified that could be considered.

Study Description

This Study will focus exclusively on the corridors in the United States within the region of the City of Laredo. The purpose of this study is to provide a high-level review of the two existing rail corridors and three proposed corridors to determine if there is a preferred alternative. The corridors to be studied include:

- The Existing UPRR Mainline Corridor
- The Existing Tex-Mex Mainline Corridor
- The Proposed Camino Colombia Corridor (SH 255)
- The UPRR Spur Corridor
- The Bypass Corridor (North and South of the Tex-Mex Line. The South Rail Bypass offers two alternatives, East and West)



Each of these corridors will be evaluated using a fatal-flaw analysis to determine if an alternative would be unable to be further developed. A fatal-flaw is defined as a condition within the proposed corridor that would prevent the corridor from being used by rail. Following the fatal-flaw analysis, each corridor will undergo a high-level evaluation to determine if there is a preferred corridor to consider for further development.

Study Process

The Study has been divided into three major elements:

- Data Collection
- Environmental Fatal Flaw Analysis
- Evaluation of the identified Railroad Alternatives

Data Collection

The Data Collection phase of this project included gathering available information from other studies, railroads, the City of Laredo and Webb County. Example information gathered includes available:

- GIS data
- Aerial Photography (November, 2003)
- Maps of Rail Lines
- Rail Traffic Data
- Fleet data
- Future Highway and Rail Construction Plans

The intent of the data collection phase is not to create new data such as traffic counts or train counts, but rather only use the data that is available today. The data will be presented in a variety of formats including mapping and tabular.

Environmental Fatal-Flaw Analysis

Each corridor will be reviewed and summarized. The summary evaluation will include:

- Status of any NEPA documentation for the existing facility
- Required NEPA documentation for each of the proposed alignments
- The types of impacted environmental resources requiring mitigation such as wetlands, archaeological sites, historic structures and hazardous materials sites
- Identification of potential fatal flaws
- Environmental Compliance (EC) costs based on probable construction costs
 - Based primarily on right-of-way requirements
 - Requirements of an Environmental Assessment, Environmental Impact Statement, or re-evaluation of an existing NEPA document.
- Identification of potential Environmental Mitigation Costs based on probable construction costs (similar to EC costs)

Understanding the timeframe to complete Environmental Compliance and Mitigation process is also a key factor in determining a preferred alignment. A comparison table has been developed to contrast each alternative schedule for the environmental processes.

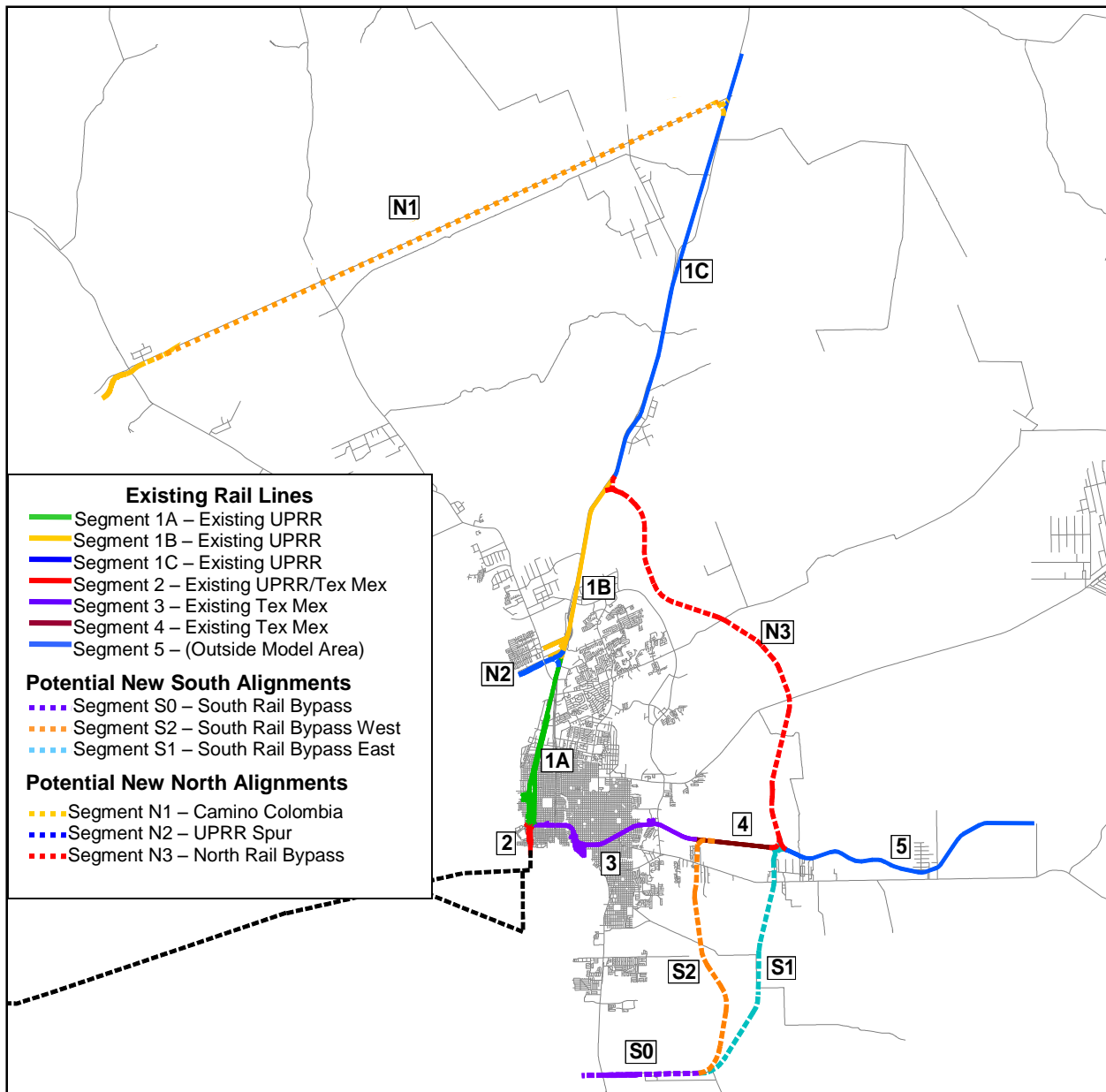
Right-of-way and utility costs will be identified on a conceptual basis. Existing aerial photography and GIS mapping will be primarily utilized to evaluate potential costs for each corridor.

Evaluation of the Railroad Alternatives

The evaluation of the railroad alternatives has been divided into two groups. The first group is the evaluation of the existing alignments for the UPRR and TMRR. This will be accomplished primarily through a site visit (windshield survey) of the alignments, grade crossings and grade separations in-effect today. Our field review will result in recommendations of closure based upon physical characteristics found along the alignments. Those recommendations will be tabulated and costs evaluated to determine the amount of rail/vehicle interference that can be reduced and the result of crossing closures on the traveling public.

The second group is the evaluation of the proposed corridors which will be done primarily by developing a concept alignment utilizing available aerial photography. Assumptions will be made as to the construction quantities for grading as can best be determined by features depicted in the aerial photography. Probable construction costs will be determined utilizing typical industry standards.

To aid the study analysis, the corridors were segmented into the following arrangement:



An operational review will be conducted for the proposed alignments and considerations including customs operations, effective train speeds, through freight and local operations. Areas that are not specifically included in this study include, but may not be limited to, crew change points and required facilities, union rules, future capacity requirements, maintenance and fueling facilities, etcetera. Areas that will require negotiations with each railroad will be identified. It would be inappropriate to comment in this report to the potential success of reaching agreements with either or both railroads on any of the alignments, including the apparent preferred alignment. Therefore, fatal flaws may exist in the negotiations phase with all stakeholders on this project.

The order of presentation of the analysis is as follows:

- Existing UPRR Alignment and Improvements
- Existing Tex-Mex Alignment and Improvements

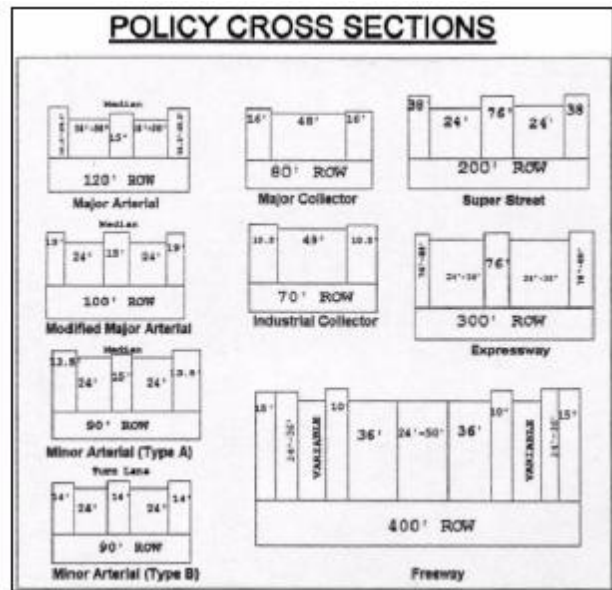
Proceeding from North to South:

- The Camino Colombia Corridor (SH 255)
- The North/South Rail Bypass Corridor
- The UPRR Spur Corridor

Key Understandings

Future Grade Separations

The Long Range Thoroughfare Plan for the City of Laredo identifies future road construction throughout the city. That plan also defines the future roadways in terms of various roadway sections and right-of-way requirements. The policy cross sections are depicted to the right.



For purposes of this study the following estimates are utilized for future grade separations. These estimates assume that the rail and roadway alignments are created to accommodate future grade separations. It should be noted that grade separation costs will vary widely based on required right-of-way, construction sequencing requirements and whether the separation is a railroad or a roadway structure. Since an analysis of each future grade separation would require significant assumptions, simple budget numbers were assigned for each future separation as identified in the table below:

Section Name	Grade Separation Estimate
Major Arterial	\$11,000,000
Modified Major Arterial	\$10,000,000
Minor Arterial (A&B)	\$10,000,000
Major Collector	\$6,000,000
Industrial Collector	\$6,000,000
Super Street	\$13,000,000
Expressway	\$15,000,000
Freeway	\$20,000,000

Values in the table above should not be used for budgeting purposes.

Right of Way

The right of way cost estimates are based on historical data for projects in the Laredo District area similar to the proposed projects. It is assumed there will be minimal impacts to billboards and other improvements common to existing corridors. The right of way costs recognize fees particular to partial acquisition, as may be the case at grade crossings.

For the purpose of this estimate, data was collected for acreage costs using recent sales in the surrounding areas. Costs for right of way on a per mile basis were also researched in an effort to recognize not only land values but those fees associated with the acquisition of right of way.

The right of way estimates were evaluated on a conceptual basis and do not take into consideration parcel by parcel values and their associated fees.

Utilities

The utility estimates are based on past historical data for projects in the Laredo District area similar to the proposed projects. It is assumed that typical utilities are located within the existing corridors and no major utility facilities would be affected that would impact the corridor. Considerations were given to new alignment corridors that were concentrated in rural areas and crossings.

The utility estimates were evaluated on a conceptual basis and assumptions were made as to the existing facilities located along the existing corridors and new alignment alternatives.

Traffic Analysis

The assumptions shown in the table below were used in developing projected 2030 delay statistics for existing and proposed new rail alignments. Traffic volume assignments for 2030 obtained from TxDOT were used to estimate the traffic in corridors crossing the existing and proposed rail lines. Peak and off-peak period traffic volumes were calculated by applying time-of-day adjustment factors to 24-hour traffic volume assignments from the travel demand model for Laredo. An evenly distributed arrival rate was applied to the period traffic volumes to estimate the number of vehicles crossing the tracks each minute during the analysis period.

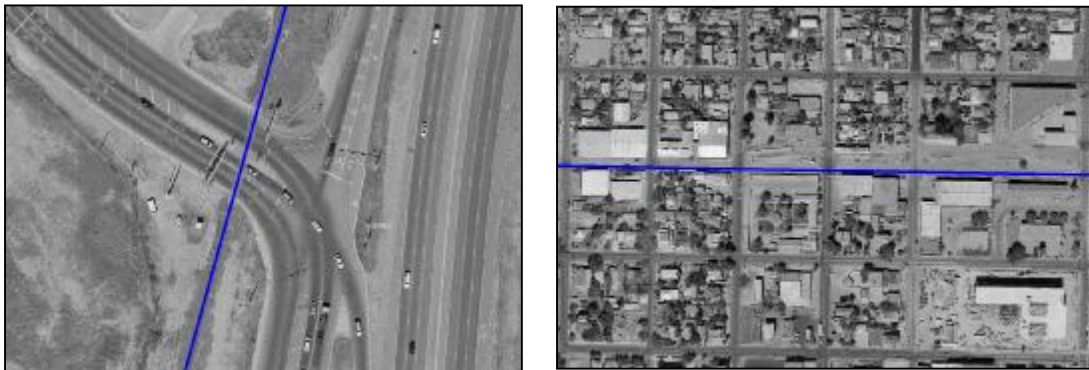
The crossing delay consists of the time the crossing is occupied by the train plus the time to cycle the gate or lights prior to and after the train crossing. The number of trains using a given segment were distributed evenly throughout the day. The number of trains was then multiplied by the total crossing delay to determine the amount of time the crossing was closed during the period. This time was multiplied by the vehicle arrival rate for the period to estimate the total number of vehicles delay at the crossing during the period. The total vehicles were multiplied by one-half the total crossing delay. An assumption was made that due to the even traffic distribution, the average delay per vehicle would be one-half the total crossing delay. The delay by period was totaled to provide an estimate of total daily delay for each segment.

Assumptions of Rail Use Parameters	
Total Gate Delay (seconds)	40.0
Total Gate Delay (minutes)	0.67
Average Train Unit (car) Length (ft.)	55.0
Number of Units per Train	100
Total Train Length (ft.)	5,500.0
Total Train Length (miles)	1.04
Average Travel Speed of Train (mph)	20.0
Average Travel Speed of Train (fps)	29.40
Delay due to Train (seconds)	187.07
Delay due to Train (minutes)	3.12
Total Train + Gate Delay (seconds)	227.07
Total Crossing Delay = Train + Gate Delay (minutes)	3.78

Need and Purpose

Existing Setting

The urban core of the City of Laredo is typical of most urban cores with a combination of business retail and transportation infrastructure. Freight railroads comprise a portion of that infrastructure and cross many local primary and secondary travelways. The photographs below illustrate two samples of at grade railcrossings within the city core. Trains crossing the international border will pass these crossings and block vehicular traffic.



Today, all of these crossings provide warning device protection varying from cross bucks only, to gates, flasher and bells. Train service throughout the area is restricted to 20 miles per hour with exceptions noted at Arkansas Avenue and Mann Road.

International Considerations

Although the International Considerations are not a focus of this study, it remains important to briefly discuss issues that may influence the selection of a preferred alternative alignment.

Each of the Proposed Corridors will require track and bridge construction by Mexico. A significant investment in infrastructure is required in all cases. The UPRR Spur track and the South Rail Bypass Alternatives will each require additional trackage to be constructed within the city limits of Nuevo Laredo.

Customs Operations

Current Customs Inspections Facilities (CIF) are located in the existing UPRR yard in Laredo and TexMex yard in Nuevo Laredo, Mexico. Each corridor will require the use of customs inspection for trains arriving on U.S. soil. This study does not delve into details required for the customs operations and makes some basic assumptions that would contribute to construction costs. Those assumptions include an inspection yard consisting of 4 tracks approximately 5000' in length thereby driving additional right-of-way purchase. Where Customs Inspections Facilities (CIF) exist, then only an expansion of those facilities would be required.

Customs and Border Protection Inspections are currently being conducted in the respective UPRR and KCS (aka TexMex) yards. All trains undergo a Vehicle and Cargo Inspection Systems (VACIS) scan to identify any anomalies. If anomalies are identified those rail cars are cut out for more intensive inspection at the respective rail yards. In addition, each train has to undergo 1,000 mile brake inspection once they cross the border. The brake inspections are conducted by the same firm on both sides of the border. UPRR is petitioning the FRA and USDOT to allow the inspections to occur further inland due to staging restrictions at the border

and or acceptance of the Mexican brake inspections. Each brake inspection takes approximately 30 to 45 minutes per train, and impedes the operation at the Laredo yard

Land Uses

The existing land uses vary widely among each of the existing corridors and proposed corridors. Throughout the city core there is a mix of industrial, light manufacturing, retail, multi-tenant and single family residences. The outlying areas consist of a mix of agricultural, live stock and open land.

Land uses in this study will be reviewed and their study impact will be recognized primarily in the cost of right-of-way. Future land uses are not a part of this study.

Roadway System

The roadway system will be considered for both the current and future conditions. Included in the analysis is a review of future roadway development as provided in the Long Range Thoroughfare Plan for Laredo. Current traffic counts and mix are considered as provided by the available data from the city of Laredo.

Pedestrian Facilities

Pedestrian facilities are a consideration of the existing corridors and are a part of the field reconnaissance review. Modifications of existing crossing will offer considerations of pedestrian facilities.

National/International Transportation Growth and Development Patterns

There are two elements of consideration as a part of this study. Roadway developments will be considered as provided through other studies and the Long Range Thoroughfare Plan. The Freight Rail Operations will also be considered as a part of the analysis.

Roadway Conditions

Interstate 35 is the one major Interstate Route traveling north and south that serves North Laredo. It terminates in downtown Laredo as a six-lane divided freeway. Continuing North-South service to the south is State Route 83. Primary east-west transportation needs are provided by State Highway 359 and U.S. 59.

Loop 20 (Bob Bullock Loop) provides circulation on the east side of Laredo and recently opened State Highway 255, a tolled facility, provides western circulation from Interstate 35 on the north side of town.

Freight Rail Operations

Freight rail operations are managed by the Union Pacific Railroad and the Tex-Mex Railroad. Each carrier provides service across the international crossing which is owned by Tex-Mex. Union Pacific Railroad pays Tex-Mex a fee for every car that travels across the international crossing.

The operations run 24 hours a day, seven days per week. Each train traveling into the United States is stopped for customs inspection. Trains headed into Mexico do not stop at the bridge for customs inspection.

Alternatives

Railroad Design Parameters

The UPRR and TMRR each have standard design parameters that will be followed as a part of the final design process. For purposes of this study the basic horizontal curves have been designed to facilitate train operating speeds in excess of 40 mph throughout the length of the alignment. However, minimum standard turnouts off of the existing Mainline tracks have been used which will reduce speed at those connection locations to 20 mph.

Superelevation was only conceptually considered and not implemented into the design. It is anticipated that this assumption will not impact the basic comparisons between alignments.

Vertical alignments were not developed for this study. However, best judgment was incorporated while analyzing the available aerial photography. In many instances alignments would closely follow existing roadways or drainage ways. Bridges were based on visual inspection of aerial photography of adjacent highway structures and approximate width of stream beds.

Railroad System Routing

The overall routing of each of the proposed alternatives deserves careful considerations to realize benefits that may be afforded to both the railroad and the City of Laredo. The goal of the rail relocations is to reduce rail traffic through the city of Laredo and increase the capacity of the tracks to accommodate future growth of rail traffic. Today, the bulk of the train traffic travels north/south on the UPRR line. An alternative that reduces this traffic would become a first order alternative. The alternative that accomplishes the removal of the UPRR train traffic from the existing line would require a new crossing of the Rio Grande River. Each of the three alternatives can accomplish this task. However, there would be no advantage in constructing the North Rail Bypass Alternative without constructing the South Rail Bypass segment to reach the desired goal.

Reducing or removing through train service on the Tex-Mex line offers a similar constraint. Constructing only the North Rail Bypass Alignment would only shift traffic to the UPRR line through the downtown area. To achieve the goal of train traffic reduction in downtown, the North Segment would have to be constructed in association with either the UPRR Spur Alignment or the Camino Colombia Alignment. The same goal could also be achieved by constructing the South Outer Alignment only, however this would have no affect on reducing train traffic on the UPRR tracks.

Therefore, from a system-wide viewpoint, the Alternative Corridors routing generate the following table. In each case where through train service can be achieved via a new river crossing, each railroad would recognize another route across the border and, therefore, potential additional capacity or emergency/bridge maintenance relief.

CORRIDOR ALTERNATIVES ROUTING IMPACTS			
Corridor	UPRR	Tex-Mex	City Benefit
Camino Colombia alone (SH 255)	<ul style="list-style-type: none"> All thru trains diverted to new route with potential higher capacity 	<ul style="list-style-type: none"> Additional service capacity across existing bridge Longer route than existing 	<ul style="list-style-type: none"> Reduction of trains on both UPRR and TMRR if both agree to use new crossing.
UPRR Spur alone	<ul style="list-style-type: none"> All thru trains diverted to new route with potential higher capacity 	<ul style="list-style-type: none"> Additional service capacity across existing bridge. Longer route than existing 	<ul style="list-style-type: none"> Reduction of trains on the UPRR tracks south of Spur Potential increase of trains south of Spur if TMRR uses Crossing
North Rail Bypass alone¹	<ul style="list-style-type: none"> No perceived routing benefit 	<ul style="list-style-type: none"> No perceived routing benefit 	<ul style="list-style-type: none"> May reduce train traffic on TMRR
North Rail Bypass with Camino Colombia or UPRR Spur²	<ul style="list-style-type: none"> All thru trains diverted to new route with potential higher capacity 	<ul style="list-style-type: none"> Additional service capacity across existing bridge Will require agreements to operate on UPRR 	<ul style="list-style-type: none"> Reduction of thru train traffic seen on both UPRR and Tex-Mex
South Rail Bypass alone	<ul style="list-style-type: none"> Additional service capacity across existing bridge Alternate route 	<ul style="list-style-type: none"> Alternate route Longer route 	<ul style="list-style-type: none"> Thru-trains reduced on Tex-Mex Line east of connection
South Rail Bypass with North Rail Bypass	<ul style="list-style-type: none"> Alternate route Longer route 	<ul style="list-style-type: none"> North Rail Bypass not used by Tex-Mex Trains Alternate Route Longer route 	<ul style="list-style-type: none"> Remove/reduce through trains on Tex-Mex and UPRR lines
South and North Rail Bypass with UPRR Spur or Camino Colombia³	<ul style="list-style-type: none"> All thru trains diverted to new route with potential higher capacity Multiple alternative routes 	<ul style="list-style-type: none"> Multiple alternative routes Longer route(s) 	<ul style="list-style-type: none"> Thru-train service reduced on UPRR and Tex-Mex downtown

Other Operating Concerns

Crew change points currently exist at the center of the existing international crossing in Laredo. Because this is a crew change point, it is logical to assume that similar crew change points will be required at each new proposed international crossing alternative. However, even with the selection and construction of one of the alternatives, there will be no relief from maintaining the existing crew change point. This may require additional consideration on Union Agreements for the train operations.

Dispatching of trains through the alternatives also deserves consideration. In addition to actually dispatching trains across the proposed alignments, interlocking constraints (an interlocking is where two tracks of different carriers cross one another at grade) will also need to be considered on the North/South Rail Bypass with crossing of TMRR.

¹ This option should not be carried forward into the analysis as it does not benefit the stakeholders

² This option is not considered valid for the purposes of this study. Combinations that include the construction of two international bridge crossings are considered beyond the financial availability of the concept and therefore, will not be carried any further for discussion.

Sidings allow trains to pass one another where there is only a single track territory. These passing sidings are typically spaced on 5 to 10 mile intervals. For this study, it has been assumed that sidings would be required for the Camino Colombia and North Rail Bypass alternatives. The sidings are each 10,000 feet in length.

Trackage rights, the ability of one carrier to operate on another carrier's property, will be a consideration on this project. For example, if the UPRR Spur Alignment is considered, it will require that the TMRR operate on a portion of the UPRR trackage.

Existing Tex-Mex Corridor

The Tex-Mex Corridor runs generally east-west through downtown Laredo. The Corridor is characterized by its many at-grade crossings. The study limits of this corridor extend from the grade separation at Loop 20 West to the international bridge located in Downtown Laredo. (See exhibit below). The tracks serve several industrial customers along the route.



The operating train speed through this corridor is 20 mph. The corridor length is approximately 5 miles extending from the UPRR connection downtown to Loop 20 east of town. There are approximately 8³ trains per day on the Tex-Mex track. The railroad operates 24 hours per day and alternates 4 hour windows with UPRR to cross the international bridge.

A recent grade crossing improvement program has been implemented which added gates and other protection primarily in the downtown area. Other improvements have been noted along the corridor.

The FRA Database for Crossing Incidents was queried for the Tex-Mex line within the project limits and since January, 1999, the following incidents were reported:

Street	Injury	Non-Injury
Buena Vista South of Guatemozin		1
Logan at Willow		2
Moctezuma at Flores		1
Arkansas		2

There has been no fatality incidents reported in the last 10 years.

Future Roadway Development

In accordance to the Long Range Thoroughfare Plan, the future roadway work along the existing Tex-Mex corridor is as depicted in the following table:

³ Laredo Comprehensive Mobility Plan, September, 2001

Corridor	Expressway	Industry Collector	Major Arterial	Major Collector	Minor Arterial	Modified Major Arterial
Existing Tex-Mex	1		2			
Existing UPRR			2			
UPRR Spur						
Camino Colombia					3	
North Rail By-pass			7	2	2	
South Rail Bypass (East)	1		1			
South Rail Bypass (West)			3	1	3	1

The Existing Tex-Mex corridor consists of segments 2, 3 and 4. Traffic projections and delays are depicted in the following table.

Max. Train Speed (mph)	Segment	Road Name	2030 Volume @ Crossing	Driver Cost Due to Delay			
				Daily Cost (dollars)	Days / Year	Annual Cost	20-Year Cost Projection (current dollars)
B	2	Segment Total (20 mph)	2,501	\$ 25	250	\$ 6,219	\$ 124,382
20	2	Segment Total (20 mph)	2,501	\$ 25	250	\$ 6,219	\$ 124,382
25	2	Segment Total (20 mph)	2,501	\$ 25	250	\$ 6,219	\$ 124,382
30	2	Segment Total (20 mph)	2,501	\$ 25	250	\$ 6,219	\$ 124,382
35	2	Segment Total (20 mph)	2,501	\$ 25	250	\$ 6,219	\$ 124,382
40	2	Segment Total (20 mph)	2,501	\$ 25	250	\$ 6,219	\$ 124,382
B	3	Segment Total (20 mph)	434,186	\$ 2,159	250	\$ 539,832	\$ 10,796,645
20	3	Segment Total (20 mph)	434,186	\$ 882	250	\$ 220,558	\$ 4,411,151
25	3	Segment Total (20 mph)	434,186	\$ 882	250	\$ 220,558	\$ 4,411,151
30	3	Segment Total (20 mph)	434,186	\$ 882	250	\$ 220,558	\$ 4,411,151
35	3	Segment Total (20 mph)	434,186	\$ 882	250	\$ 220,558	\$ 4,411,151
40	3	Segment Total (20 mph)	434,186	\$ 882	250	\$ 220,558	\$ 4,411,151
B	4	Segment Total (20 mph)	75,884	\$ 377	250	\$ 94,348	\$ 1,886,962
20	4	Segment Total (20 mph)	75,884	\$ 377	250	\$ 94,348	\$ 1,886,962
25	4	Segment Total (25 mph)	75,884	\$ 263	250	\$ 65,818	\$ 1,316,364
30	4	Segment Total (30 mph)	75,884	\$ 199	250	\$ 49,644	\$ 992,887
35	4	Segment Total (35 mph)	75,884	\$ 158	250	\$ 39,486	\$ 789,711
40	4	Segment Total (40 mph)	75,884	\$ 131	250	\$ 32,629	\$ 652,576

The values in the delay projection table are cumulative between segments. For example, should a train be able to attain an average 20 mph throughout the corridor, then the projected annual cost due to train delay would be \$6,219 plus \$220,558 plus \$94,348 for a total annual cost of approximately \$321,000.

Right of Way

This project will require right of way for less than 10 crossings and, based on aerial maps provided, appear to have minimal impacts to improvements. The estimated miles are 5.05 for the existing Tex-Mex facility.

Utilities

The utility estimate is based on less than 10 grade separations for the estimated 5.05 miles of the existing Tex-Mex facility.

Environmental Considerations

To comply with NEPA, the enhanced Tex-Mex rail corridor would require an Environmental Assessment (EA) and a public hearing prior to project construction. Environmental mitigation would likely be required for potential impacts to hazardous material sites at 10 grade-separation locations. No fatal flaws have been identified for this proposed project.

Noise and Vibration

This enhanced existing alignment rail option would create minimal additional noise and vibration impacts that do not currently exist today. There is no known noise or vibration mitigation measures currently being implemented on the existing freight rail lines in the Laredo area, and no mitigation measures have been assumed for this new alignment option. It is likely that this corridor is a candidate for a quiet zone study.

Air Pollution

The project area is located in an area that is considered in attainment for Federal air quality standards. Air quality analysis would not be required for the proposed improvements.

Endangered Species

The alignment improvements would be constructed almost entirely within existing right-of-way (ROW). None of the new ROW areas occur in rural areas or areas that have any potential for Threatened or Endangered species habitat.

Hazardous Materials

A hazardous materials site survey would be required for the proposed grade separations. It is likely that some hazardous material sites in these new ROW areas would require mitigation.

Drainage and Floodplain Considerations

There is no new drainage or floodplain considerations as a part of this proposed enhancement.

Cultural Resources

No cemeteries or Section 4(f) properties have been identified that would be impacted by this project.

Archeological Impacts

It is not anticipated that archaeological sites would be impacted by the proposed project.

Historic Preservation

It is not anticipated that historic structures or other historic resources would be impacted by the proposed project.

National Environmental Policy Act (NEPA)

The proposed enhanced alignment would require an Environmental Assessment (EA) and a public hearing prior to project construction.

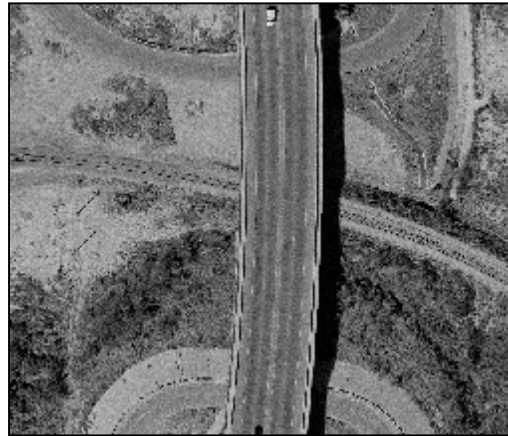
Crossing Summary

Following is a brief description and summary of each crossing (traveling west to east).

Railroad Under Loop 20

Description: The railroad passes beneath Loop 20 running adjacent to an apparent drainage ditch. The track is on fill and elevated above the piers and footings of the highway.

Recommendation: Add Crash walls for Pier Protection.



OWK Street East of Aguila Azteca and East of Tex-Mex

Description: These tracks are industrial spur tracks leading to nearby facilities.

Recommendation: Upgrade signage to Manual on Uniform Traffic Control Devices (MUTCD) Standards.



Arkansas Street South of Guadalupe

Description: This is the single main track that is presently protected with cross-bucks, flashing lights and cantilever signals.

Recommendation: It is recommended that this crossing be grade separated. This crossing has been warded \$1 million for grade separation and therefore not fully funded.



Chihuahua and Guadalupe Underpass

Description: This crossing is presently grade separated with both Chihuahua and Guadalupe passing beneath the tracks.

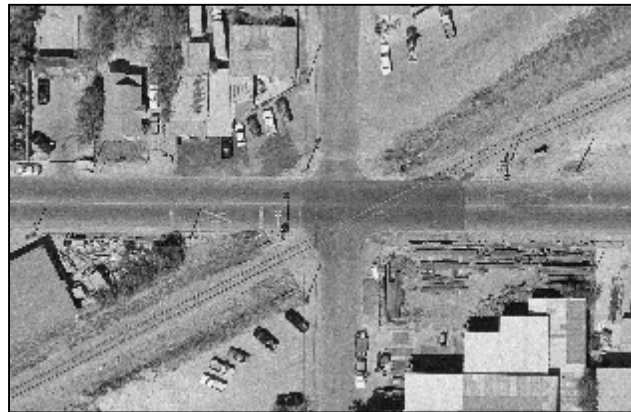
Recommendation: There are no recommendations for this grade separation.



Market at Jarvis

Description: This is a single main track crossing Market on an extreme skew at the former intersection of Jarvis and Market. Our field reconnaissance revealed that Jarvis is now closed at Market.

Recommendation: Market is a main thoroughfare in Laredo and this crossing should be grade separated.



Bartlet South of Market

Description: There is no crossing in existence today – the road has been closed.

Recommendation: There are no recommendations at this location.



Malinche at Cortez

Description: This is a single main track crossing Malinche and is protected with signage only.

Recommendation: This crossing is a minor secondary street and should be maintained as an at-grade crossing. There should be an upgrade to the protection by adding gates and flashers. It is understood that this additional protection has been funded.

**Guatemozin at Buena Vista**

Description: This is a single main track crossing Malinche and is protected with signage only.

Recommendation: This crossing is a minor secondary street and should be maintained as an at-grade crossing. There should be an upgrade to the protection by adding gates and flashers. It is understood that this additional protection has been funded.

**Meadow at Aldama**

Description: This crossing is presently grade separated.

Recommendation: There should be no additional requirements for this crossing. Protection of piers/abutments should be verified.



Seymour at Aldama

Description: This crossing is currently closed.

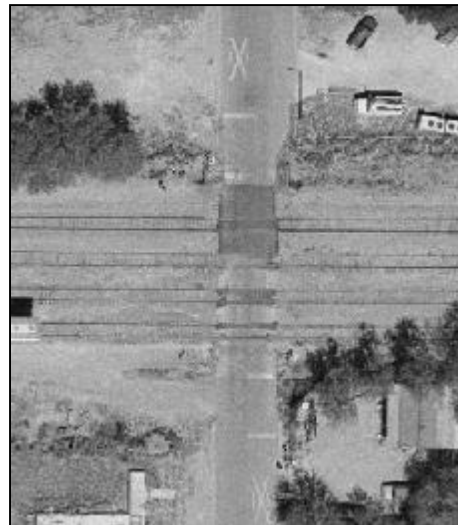
Recommendation: There are no changes recommended



Loring at Aldama

Description: This crossing is currently open.

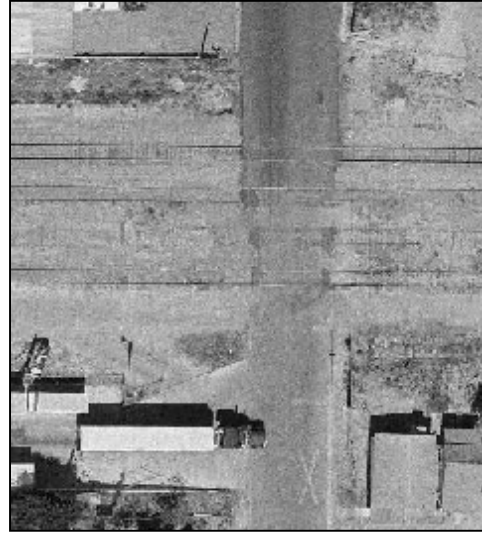
Recommendation: It is recommended that this crossing be closed.



Stone at Aldama

Description: This crossing is currently open.

Recommendation: It is recommended that this crossing be upgraded with Gates, Flashers and bells.



Aldama at Hendricks

Description: This crossing is currently open and protected with cross-bucks only.

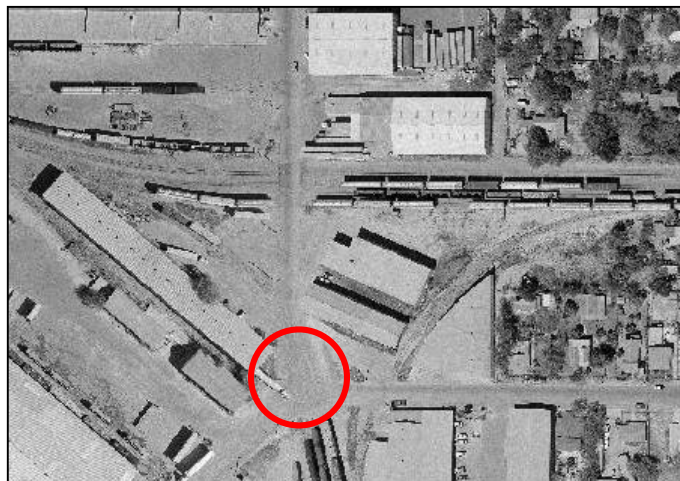
Recommendation: It is recommended to close this crossing.



Logan at Willow

Description: This is an industrial track crossing protected with cross bucks.

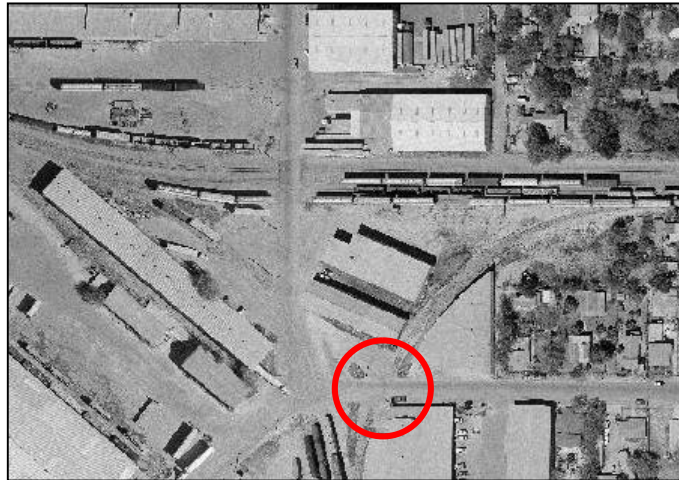
Recommendation: It is recommended to upgrade the signage to MUTCD Standards.



Willow east of Logan

Description: This is an industrial track crossing protected with cross bucks.

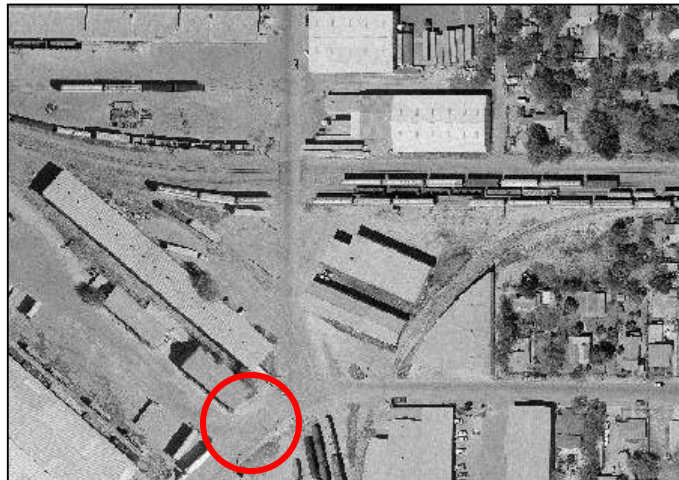
Recommendation: It is recommended that the signage be upgraded to MUTCD standards.



Unnamed road southwest of Willow/Logan

Description: This crossing is currently protected with cross bucks.

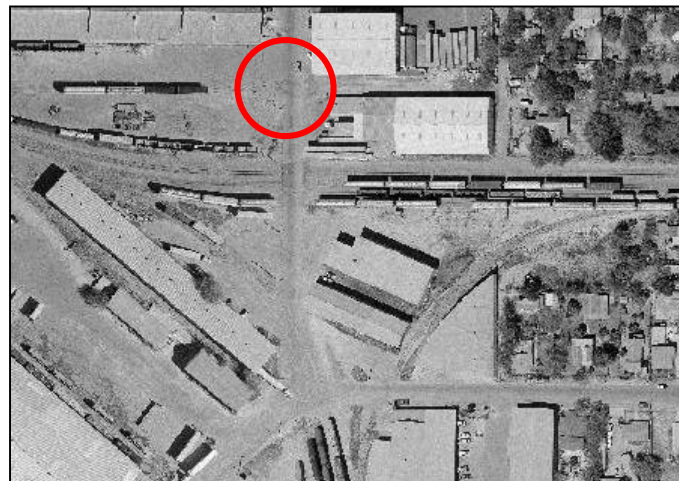
Recommendation: It is recommended that the signage be upgraded to MUTCD standards.



Logan North of Aldama

Description: This crossing is currently protected with cross bucks.

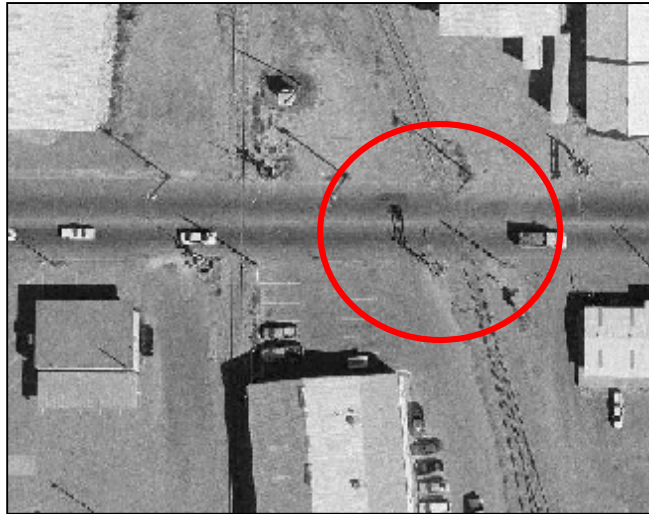
Recommendation: It is recommended that the signage be upgraded to MUTCD standards.



Market east of Springfield

Description: This crossing is currently protected with flashers and gates.

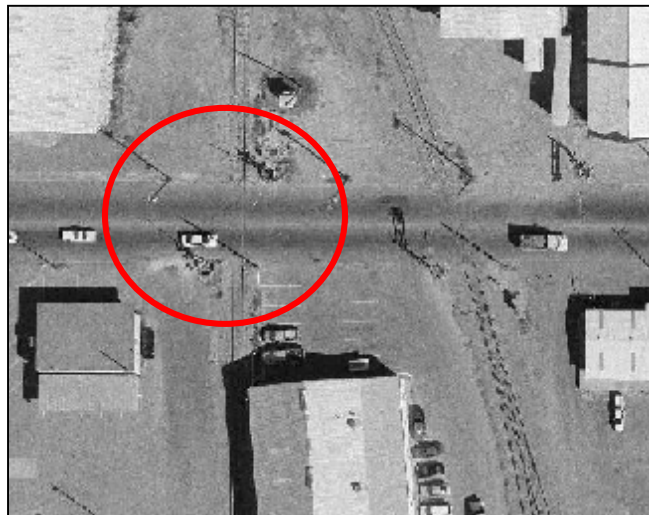
Recommendation: It is recommended that this crossing be grade separated.



Market at Springfield

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended that this crossing be grade separated.



Chihuahua west of Springfield

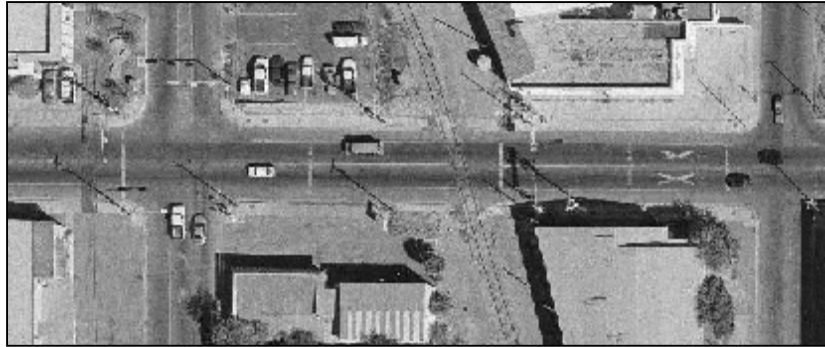
Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended that this crossing be grade separated.



Guadalupe west of Springfield

Description: This crossing is currently protected with flashers and gates.



Recommendation: It is recommended that this crossing be grade separated. However, please note the industrial track just west of Marcella. It may also require grade separation due to it's proximity to the mainline grade separation.

Marcella north of Laredo

Description: This crossing is currently protected with cross bucks.



Recommendation: It is recommended that this crossing be grade separated. Note that this grade separation and the crossing of Washington east of Marcella will require close coordination.

Washington east of Marcella

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended that this crossing be grade separated.



Sanders north of Washington

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended that this crossing be closed.



San Eugenio at Garfield

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended that this crossing be closed.



Moctezuma at San Jorge

Description: This crossing is currently protected with flashers and gates.

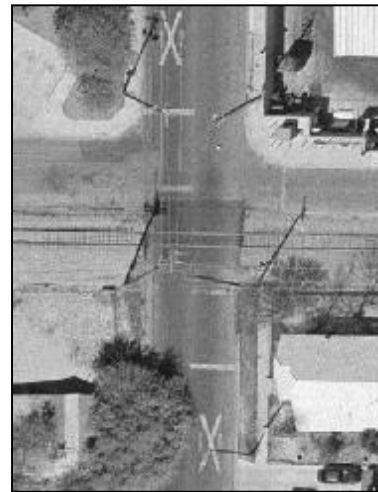
Recommendation: It is recommended that this crossing be closed.



Moctezuma at San Francisco

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended that this crossing be closed.



Moctezuma at San Eduardo

Description: This crossing is currently protected with flashers.

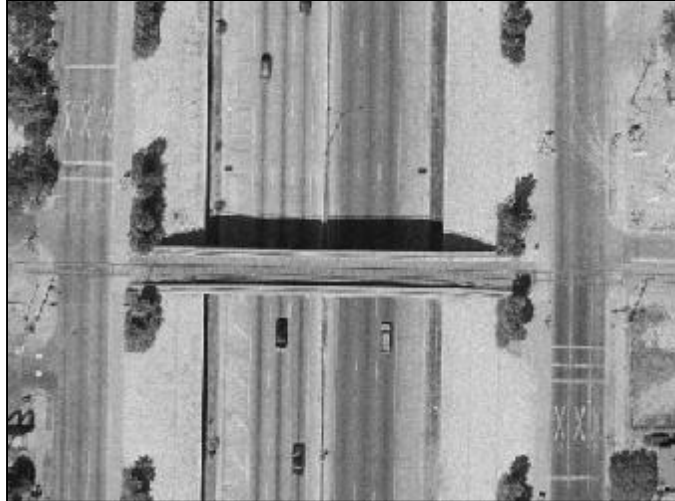
Recommendation: There are no recommended changes at this crossing.



Moctezuma at I-35 outer road east

Description: This crossing is currently protected with flashers and gates.

Recommendation: There are no recommended changes.



Moctezuma at I-35 outer road west

Description: This crossing is currently protected with flashers and gates.

Recommendation: There are no recommended changes.

Moctezuma at San Bernardo

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended that this crossing be grade separated.



Moctezuma at San Agustin

Description: This crossing is currently protected with flashers and gates.

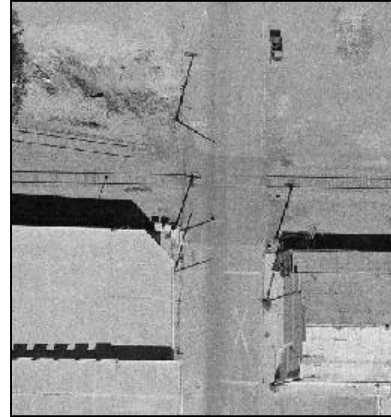
Recommendation: There are no recommended changes.



Moctezuma at Flores

Description: This crossing is currently protected with flashers and gates.

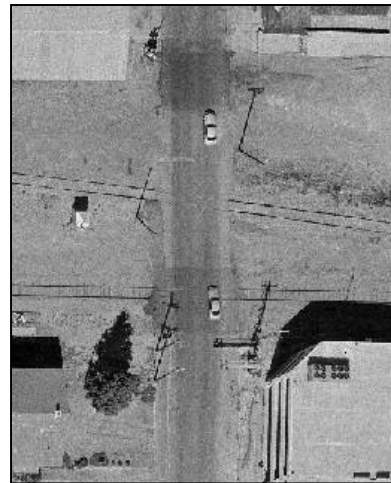
Recommendation: It is recommended that this crossing be closed.



Moctezuma at Convent

Description: This crossing is currently protected with flashers and gates.

Recommendation: There are no recommended changes.



Moctezuma at Juarez

Description: This crossing is currently protected with flashers and gates.

Recommendation: There are no recommended changes.



Moctezuma at Santa Maria

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended to grade separate this crossing.



Moctezuma at Davis

Description: This crossing is currently protected with flashers and gates.

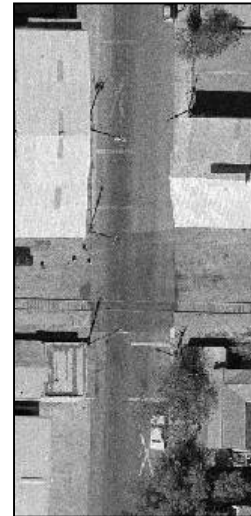
Recommendation: There are no recommended changes.



Moctezuma at Main

Description: This crossing is currently protected with flashers and gates.

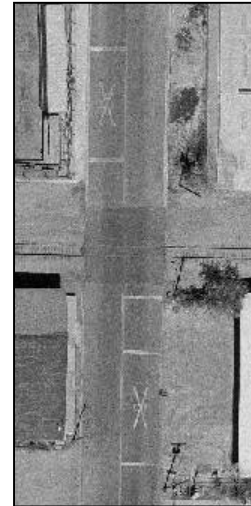
Recommendation: There are no recommended changes.



Moctezuma at Santa Rita

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended to close this crossing.



Moctezuma at Vidaurri

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended to close this crossing.



Santa Isabel at Washington

Description: This crossing is currently protected with cross bucks.

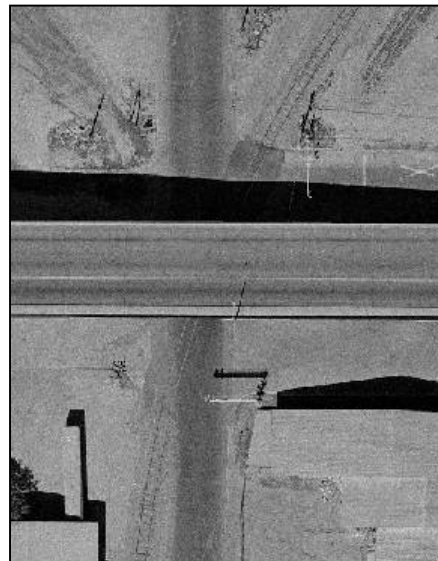
Recommendation: It is recommended to upgrade this crossing with gates, flashers and bells.



Washington at Santa Isabel

Description: This crossing is currently grade separated.

Recommendation: There are no recommended changes with Washington Street overpass, however, it is recommended that gates, bells and flashers be added to Santa Isabelle.



Existing UPRR Corridor

The UPRR Corridor runs generally north-south through downtown Laredo. The Corridor is characterized by its many at-grade crossings and multiple tracks in the downtown area. The study limits of this corridor extend from the grade separation at I-35 approximately 1 mile south of Loop 20 south to the international bridge located in Downtown Laredo or a distance of 6.95 miles. (See exhibit below)

The operating train speed through this corridor is 20 mph. The corridor length is approximately 7 miles. There are approximately 16⁴ trains per day on the UPRR track. The railroad operates 24 hours per day. Crossing the international bridge is accomplished in rotating 4 hour shifts between the Tex-Mex and UPRR.

Of the current 43 at-grade crossings, 18 were considered as candidate closures or separations. The FRA Database for Crossing Incidents was queried for the UPRR line within the project limits and since January, 1999, the following incidents were reported:

Street Name	Injury	Non-Injury
Mann	3	8
FM 1472 at Old Santa Maria	1	2
Island at Santa Maria		1
Justo Penn east of Santa Maria		1
Markley west of Santa Maria		1
Sanchez at Santa Rita		1
Las Cruces at Old Santa Maria		1
Loop 20/I35	1	2

There has been no fatality incidents reported in the last 10 years.



Future Roadway Development

In accordance to the Long Range Thoroughfare Plan, the future roadway work along the existing UPRR corridor is as depicted in the following table:

⁴ Laredo Comprehensive Mobility Plan, September, 2001

Corridor	Expressway	Industry Collector	Major Arterial	Major Collector	Minor Arterial	Modified Major Arterial
Existing Tex-Mex	1		2			
Existing UPRR			2			
UPRR Spur						
Camino Colombia					3	
North Rail By-pass			7	2	2	
South Rail Bypass (East)	1		1			
South Rail Bypass (West)			3	1	3	1

The Existing UPRR corridor consists of segments 2, 1A, 1B and 1C. Traffic projections and delays are depicted in the following table.

Max. Train Speed (mph)	Segment	Road Name	2030 Volume @ Crossing	Driver Cost Due to Delay				
				Value of Time (dollars / hour)	Daily Cost (dollars)	Days / Year	Annual Cost	20-Year Cost Projection (current dollars)
B	1A	Segment Total (20 mph)	334,774	\$10.00	\$ 1,665	250	\$ 416,231	\$ 8,324,626
20	1A	Segment Total (20 mph)	334,774	\$10.00	\$ 866	250	\$ 216,606	\$ 4,332,126
25	1A	Segment Total (20 mph)	334,774	\$10.00	\$ 866	250	\$ 216,606	\$ 4,332,126
30	1A	Segment Total (20 mph)	334,774	\$10.00	\$ 866	250	\$ 216,606	\$ 4,332,126
35	1A	Segment Total (20 mph)	334,774	\$10.00	\$ 866	250	\$ 216,606	\$ 4,332,126
40	1A	Segment Total (20 mph)	334,774	\$10.00	\$ 866	250	\$ 216,606	\$ 4,332,126
B	1B	Segment Total (20 mph)	98,305	\$10.00	\$ 489	250	\$ 122,225	\$ 2,444,492
20	1B	Segment Total (20 mph)	98,305	\$10.00	\$ 489	250	\$ 122,225	\$ 2,444,492
25	1B	Segment Total (25 mph)	98,305	\$10.00	\$ 341	250	\$ 85,265	\$ 1,705,303
30	1B	Segment Total (30 mph)	98,305	\$10.00	\$ 257	250	\$ 64,312	\$ 1,286,249
35	1B	Segment Total (35 mph)	98,305	\$10.00	\$ 205	250	\$ 51,152	\$ 1,023,042
40	1B	Segment Total (40 mph)	98,305	\$10.00	\$ 169	250	\$ 42,269	\$ 845,389
B	1C	Segment Total (20 mph)	2,279	\$10.00	\$ 11	250	\$ 2,834	\$ 56,671
20	1C	Segment Total (20 mph)	2,279	\$10.00	\$ 11	250	\$ 2,834	\$ 56,671
25	1C	Segment Total (25 mph)	2,279	\$10.00	\$ 8	250	\$ 1,977	\$ 39,534
30	1C	Segment Total (30 mph)	2,279	\$10.00	\$ 6	250	\$ 1,491	\$ 29,819
35	1C	Segment Total (35 mph)	2,279	\$10.00	\$ 5	250	\$ 1,186	\$ 23,717
40	1C	Segment Total (40 mph)	2,279	\$10.00	\$ 4	250	\$ 980	\$ 19,599
B	2	Segment Total (20 mph)	2,501	\$10.00	\$ 25	250	\$ 6,219	\$ 124,382
20	2	Segment Total (20 mph)	2,501	\$10.00	\$ 25	250	\$ 6,219	\$ 124,382
25	2	Segment Total (20 mph)	2,501	\$10.00	\$ 25	250	\$ 6,219	\$ 124,382
30	2	Segment Total (20 mph)	2,501	\$10.00	\$ 25	250	\$ 6,219	\$ 124,382
35	2	Segment Total (20 mph)	2,501	\$10.00	\$ 25	250	\$ 6,219	\$ 124,382
40	2	Segment Total (20 mph)	2,501	\$10.00	\$ 25	250	\$ 6,219	\$ 124,382

The values in the delay projection table are cumulative between segments. For example, should a train be able to attain an average 20 mph throughout the corridor, then the projected annual cost due to train delay would be \$216,606 plus \$122,225 plus \$2,834 plus \$6,219 for a total annual cost of approximately \$348,000.

Right of Way

This estimate will require right of way for crossings and, based on aerial maps provided, appear to have minimal impacts to improvements. The estimates miles are 6.95 for the existing UPRR facility.

Utilities

The utility estimate is based on over 20 crossings for the estimated 6.95 length of the existing UPRR facility.

Environmental

To comply with NEPA, the proposed improvements to the existing Union-Pacific Railroad alignment, an Environmental Assessment (EA) and a public hearing would be required prior to project construction. Environmental mitigation would likely be required for potential impacts to hazardous material sites at 10 grade-separation locations. No fatal flaws have been identified for this proposed project.

Noise and Vibration

Current freight traffic on this existing rail alignment generates noise and vibration impacts. Improvements proposed in this study will not increase these impacts along the existing UPRR alignment. No new mitigation measures have been assumed for this alignment option.

Air Pollution

The project area is located in an area that is considered in attainment for Federal air quality standards. Air quality analysis would not be required for this proposed rail alignment project.

Endangered Species

The proposed alignment would be constructed almost entirely within existing right-of-way (ROW) with the exception of grade-separation locations, which are located in urbanized areas of Laredo. None of the new ROW areas occur in rural areas or areas that have any potential for Threatened or Endangered species habitat.

Hazardous Materials

A hazardous materials site survey would be required for the proposed grade separations. It is likely that some hazardous material sites in these new ROW areas would require mitigation.

Drainage and Floodplain Considerations

The new ROW areas at proposed grade separations are not expected to impact any jurisdictional stream crossings, and therefore no U.S. Army Corps of Engineers (USACE) permitting or coordination is likely to be required. Also, this project uses an existing bridge over the Rio Grande River, and therefore no permitting or agency coordination would be required to make the necessary connection across the International border into Mexico.

Cultural Resources

No cemeteries or Section 4(f) properties have been identified that would be impacted by this project.

Archeological Impacts

It is not anticipated that archaeological sites would be impacted by the proposed project.

Historic Preservation

It is not anticipated that historic structures or other historic resources would be impacted by the proposed project.

National Environmental Policy Act (NEPA)

The proposed alignment would require an Environmental Assessment (EA) and a public hearing prior to project construction.

Crossing Summary

Following is a brief description and summary of each crossing (traveling south to north).

Zaragosa

Description: Zaragosa Street crosses the “throat” of the UPRR yard at the southern end just north of the international bridge crossing. It is presently protected with cross-bucks only.

Recommendation: This crossing should be upgraded to Gates, flashers and bells.



Scott

Description: Scott Street crosses the UPRR yard and mainline track. It is presently protected with signals and gates.

Recommendation: There are no changes recommended for this crossing.



Santa Isabel north of Coke

Description: Scott Street crosses the UPRR yard and mainline track. It is presently protected with signals and gates.

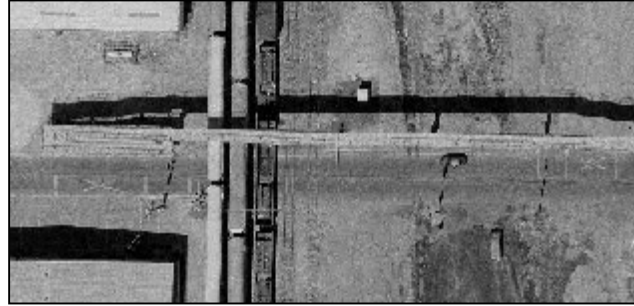
Recommendation: There are no changes recommended for this crossing.



Sanchez

Description: This crossing is currently protected with flashers and gates.

Recommendation: There are no recommended changes.



Garza at Santa Rita

Description: This crossing is currently protected with cross bucks.

Recommendation: It is recommended that this crossing be closed.



Sanchez at Santa Rita

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to add gates to this crossing.



Park at Santa Rita

Description: This crossing is currently protected with cross bucks.

Recommendation: It is recommended to add gates and flashers to this crossing.



Bruni at Santa Rita

Description: This crossing is currently protected with cross bucks.

Recommendation: It is recommended to close this crossing.



Gonzalez at Santa Rita

Description: This crossing is currently protected with flashers.

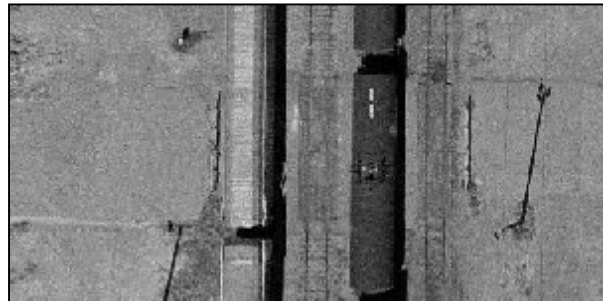
Recommendation: It is recommended to close this crossing.



Gonzalez west of Santa Isabel

Description: This crossing is currently closed.

Recommendation: There are no recommended changes.



Shea at Santa Rita

Description: This crossing is currently protected with gates and flashers.

Recommendation: There are no recommended changes.



Jefferson at Santa Rita

Description: This crossing is currently protected with flashers and gates.

Recommendation: It is recommended to grade separate this crossing.



Jefferson at Eagle Pass

Description: This crossing is currently protected with flashers.

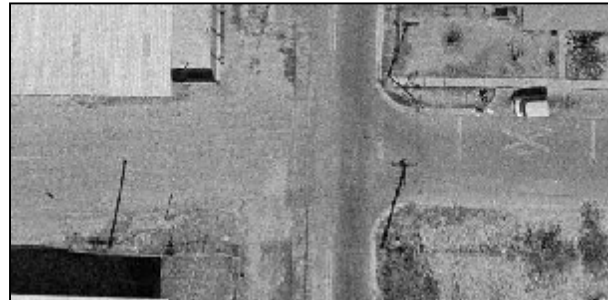
Recommendation: It is recommended to grade separate this crossing.



Frankfort at Santa Rita

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to close this crossing.



Blair at Santa Rita

Description: This crossing is currently protected with gates and flashers.

Recommendation: It is recommended to close this crossing.



Madison at Santa Rita

Description: This crossing is currently protected with gates and flashers.

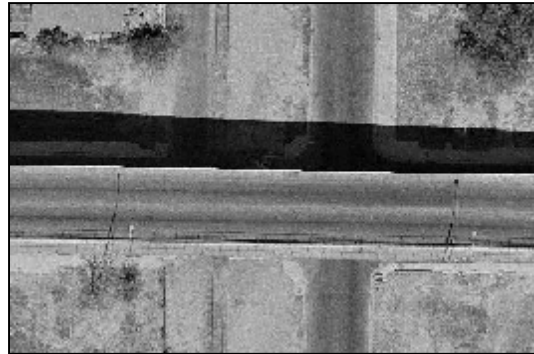
Recommendation: It is recommended to close this crossing.



Lafayette at Santa Rita

Description: This crossing is currently grade separated.

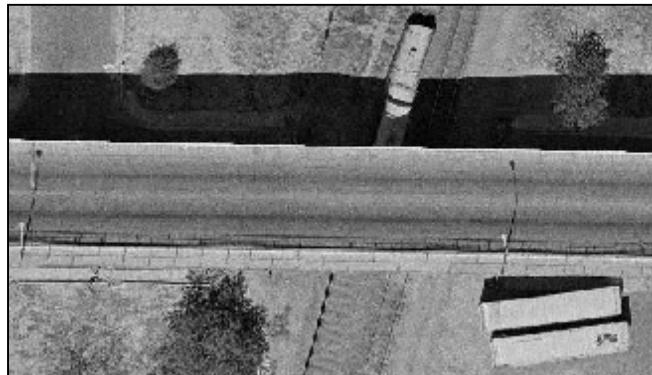
Recommendation: There are no recommended changes.



Lafayette at Vidaurri

Description: This crossing is currently grade separated.

Recommendation: There are no recommendations for this crossing.



Baltimore at Santa Rita

Description: This crossing is currently protected with gates and flashers.

Recommendation: There are no changes recommended at this crossing.



Baltimore west of Vidaurri

Description: This crossing is currently protected with gates and flashers.

Recommendation: There are no recommendations at this crossing.



Pierce at Santa Rita

Description: This crossing is currently protected with gates and flashers.

Recommendation: It is recommended to close this crossing.



Boston at Santa Rita

Description: This crossing is currently protected with gates and flashers.

Recommendation: There are no recommendations for this crossing.



Philadelphia at Santa Rita

Description: This crossing is currently protected with gates and flashers.

Recommendation: It is recommended to close this crossing.



Ugarte at Santa Rita

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to add gates to this crossing.



Pace at Santa Cleotilde

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to add gates to this crossing.



Chicago at Santa Cleotilde

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to grade separate this crossing.



Chicago at Santa Rita

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to grade separate this crossing.



Markley west of Santa Maria

Description: This crossing is currently protected with gates and flashers.

Recommendation: It is recommended to close this crossing.



Markley east of Santa Rita

Description: This crossing is currently protected with gates and flashers.

Recommendation: It is recommended to close this crossing.



Modern north of Markley

Description: This crossing is currently abandoned.

Recommendation: There are no recommendations for this crossing.



Calton at Santa Maria

Description: These crossings are currently protected with flashers.

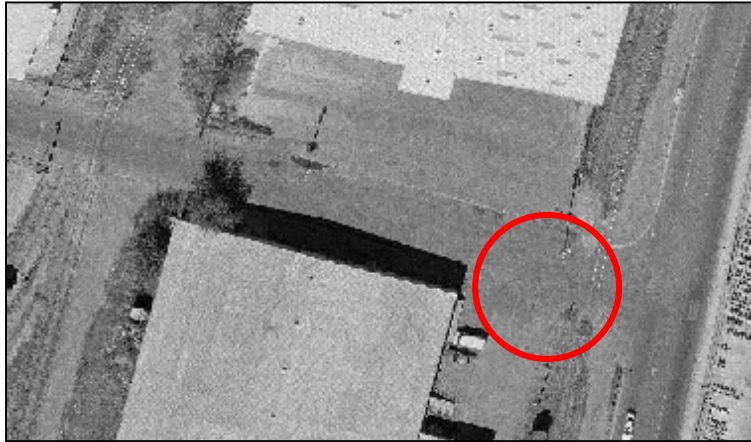
Recommendation: These crossings are funded for grade separation.



Justo Penn east of Santa Maria

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to add gates to this crossing.



Island at Santa Maria

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to add gates to this crossing.



Island east of Carrillo

Description: This crossing is currently protected with flashers.

Recommendation: It is recommended to add gates to this crossing.



Mann Road West of Santa Maria

Description: This crossing is currently protected with cross bucks.

Recommendation: It is recommended to upgrade the crossing with gates, flashers and bells and pre-emptive warning systems tied to traffic signals or consider grade separation.



Industrial east of CPL

Description: This crossing is currently protected with gates and flashers.

Recommendation: It is recommended to upgrade the crossing surface.



FM 1472 at Old Santa Maria

Description: This crossing is currently protected with gates and flashers.

Recommendation: This crossing is funded for grade separation.



Tejas at Old Santa Maria

Description: This crossing is currently protected with cantilever, gates and flashers.

Recommendation: There are no recommended changes for this crossing.



Las Cruces at Old Santa Maria

Description: This crossing is currently protected with gates and flashers.

Recommendation: There are no recommended changes for this crossing.



San Lorenzo

Description: This crossing is currently protected with cross bucks.

Recommendation: It is recommended to add flashers and gates to this crossing.



Connection Road between San Gabriel and San Lorenzo

Description: This crossing is currently protected with cross bucks.

Recommendation: It is recommended to upgrade the signage to MUTCD standards.



Camino Colombia Corridor (SH 255)

General Description

The Camino Colombia Corridor (SH 255) follows and is contained within the existing right-of-way of the State Highway 255. The corridor is approximately 22.3 miles in length and travels from the existing UPRR tracks approximately 4.6 miles north of Webb on I-35 to nearby the existing Camino Colombia International Highway crossing. At the UPRR connection, a wye track has been assumed to provide service to both northbound and southbound trains.

At the new international crossing it is assumed that a customs facility expansion will be required to support rail customs operations. The expansion includes facilities and a yard for staging of trains and holding of rejected vehicles.

Future Roadway Development

In accordance to the Long Range Thoroughfare Plan, the future roadway work along the Camino Colombia Corridor (SH 255) is as depicted in the following table:

Corridor	Expressway	Industry Collector	Major Arterial	Major Collector	Minor Arterial	Modified Major Arterial
Existing Tex-Mex	1		2			
Existing UPRR			2			
UPRR Spur						
Camino Colombia					3	
North Rail By-pass			7	2	2	
South Rail Bypass (East)	1		1			
South Rail Bypass (West)			3	1	3	1

The proposed Camino Colombia corridor is identified by segment N1. Traffic projections and delays are depicted in the following table.

Max. Train Speed (mph)	Segment	Road Name	2030 Volume @ Crossing	Driver Cost Due to Delay				
				Value of Time (dollars / hour)	Daily Cost (dollars)	Days / Year	Annual Cost	20-Year Cost Projection (current dollars)
B	N1	Segment Total (20 mph)	27,781	\$ 10.00	\$ 138	250	\$ 34,541	\$ 690,814
20	N1	Segment Total (20 mph)	27,781	\$ 10.00	\$ 36	250	\$ 9,019	\$ 180,381
25	N1	Segment Total (25 mph)	27,781	\$ 10.00	\$ 25	250	\$ 6,292	\$ 125,836
30	N1	Segment Total (30 mph)	27,781	\$ 10.00	\$ 19	250	\$ 4,746	\$ 94,913
35	N1	Segment Total (35 mph)	27,781	\$ 10.00	\$ 15	250	\$ 3,775	\$ 75,491
40	N1	Segment Total (40 mph)	27,781	\$ 10.00	\$ 12	250	\$ 3,119	\$ 62,382

The annual projected cost due to traffic delay for a train traveling at 20 mph is approximately \$9,000.

Right-of-Way

The Right-of-Way along State Highway 255 is understood to be approximately 400' wide. It is also understood that there is an opportunity to utilize a portion of that right-of-way for the proposed rail line. The only additional right of way is anticipated at the wye track connection near the existing UPRR trackage and for the customs facilities and yard.

This corridor will require approximately 50 acres of right of way for a customs yard and additional right of way for a wye track connection.

Utilities

The utility estimate is based on minimal relocations required for the customs yard and wye track connection.

Environmental Considerations

To comply with NEPA, the proposed Camino Columbia rail alignment project would require an Environmental Assessment (EA) and a public hearing prior to project construction. For the bridge crossing at the Rio Grande River a Presidential Permit would be required from the U.S. State Department, which would include a Section 10 Permit from the U.S. Corps of Engineers (USACE) for impacts to a Navigable Water, and coordination with the U.S. Coast Guard (USCG), U.S. Fish & Wildlife Service (USFWS), the U.S. International Boundary and Water Commission (USIBWC), and the State Historic Preservation Office (SHPO). Additional environmental compliance would likely include an archaeological sites survey, and a historical structures survey. Environmental mitigation would likely be required for potential impacts to riparian

wetlands within the Rio Grande River, for impacts to hazardous material sites (within grade separations or within the customs yard location), archaeological sites National Register of Historic Places (NRHP) eligibility testing and (potentially) data recovery investigations, and historic structures mitigation. No fatal flaws have been identified for this proposed project.

Noise and Vibration

This new alignment rail option would create noise and vibration impacts that do not currently exist. There is no known noise or vibration mitigation measures currently being implemented on the existing freight rail lines in the Laredo area, and no mitigation measures have been assumed for this new alignment option.

Air Pollution

The project area is located in an area that is considered in attainment for Federal air quality standards. Air quality analysis would not be required for this proposed rail alignment project.

Endangered Species

The proposed alignment would be constructed almost entirely within the existing Camino Columbia Toll Road right of way (ROW), with the exception of grade-separation locations and a customs yard location. The potential to encountered Threatened or Endangered species habitat in these new ROW areas is extremely low.

Hazardous Materials

A hazardous materials site survey would be required for the proposed custom yard and grade separations. These areas fall outside of the ROW for the original Camino Columbia project. The potential to find hazardous materials sites is considered moderate.

Drainage and Floodplain Considerations

Although all environmental requirements have been completed, because the Rio Grande, an international boundary, would be crossed, a Presidential Permit would be required from the U.S. State Department, a Section 10 permit would be required for impacts to a Navigable Water, and also coordination with the U.S. Coast Guard (USCG), U.S. Fish & Wildlife Service (USFWS), the State Historic Preservation Office (SHPO), and the U.S. International Boundary and Water Commission (USIBWC) would be required.

Cultural Resources

No cemeteries or Section 4(f) properties have been identified that would be impacted by this project.

Archeological Impacts

An archeological sites survey would likely be required within new ROW areas including the proposed customs yard, and possibly at the grade-separation locations.

Historic Preservation

A survey of historic structures would likely be required for the proposed customs yard, and possibly at the grade-separation locations.

National Environmental Policy Act (NEPA)

The proposed alignment would require an Environmental Assessment (EA) and a public hearing prior to project construction.

North and South Rail Bypass Corridor

NORTH RAIL BYPASS CORRIDOR

General Description

The North Rail Bypass Corridor runs in a general northwest to southeast direction beginning at the existing UPRR track approximately 3.75 miles north of Bob Bullock Loop and continuing to the Tex-Mex tracks just east of the existing Tex-Mex rail yard. Both ends of this connection are anticipated to utilize a wye connection.

Future Roadway Development

In accordance to the Long Range Thoroughfare Plan, the future roadway work along the North Rail Bypass corridor is as depicted in the following table:

Corridor	Expressway	Industry Collector	Major Arterial	Major Collector	Minor Arterial	Modified Major Arterial
Existing Tex-Mex	1		2			
Existing UPRR			2			
UPRR Spur						
Camino Colombia					3	
North Rail By-pass			7	2	2	
South Rail Bypass (East)	1		1			
South Rail Bypass (West)			3	1	3	1



The proposed North Rail Bypass corridor is identified by segment N3. Traffic projections and delays are depicted in the following table.

Max. Train Speed (mph)	Segment	Road Name	2030 Volume @ Crossing	Driver Cost Due to Delay				
				Value of Time (dollars / hour)	Daily Cost (dollars)	Days / Year	Annual Cost	20-Year Cost Projection (current dollars)
B	N3	Segment Total (20 mph)	130,462	\$ 10.00	\$ 649	250	\$ 162,206	\$ 3,244,121
20	N3	Segment Total (20 mph)	130,462	\$ 10.00	\$ 564	250	\$ 141,094	\$ 2,821,889
25	N3	Segment Total (25 mph)	130,462	\$ 10.00	\$ 394	250	\$ 98,429	\$ 1,968,579
30	N3	Segment Total (30 mph)	130,462	\$ 10.00	\$ 297	250	\$ 74,241	\$ 1,484,829
35	N3	Segment Total (35 mph)	130,462	\$ 10.00	\$ 236	250	\$ 59,049	\$ 1,180,987
40	N3	Segment Total (40 mph)	130,462	\$ 10.00	\$ 195	250	\$ 48,795	\$ 975,906

The average annual projected cost for train delay in this segment for a train traveling at 20 mph is approximately \$141,000.

Right-of-way

This project will require 14.6 miles of right of way and approximately 354 acres. This is new alignment and based on an aerial map provided, there does not appear to be significant right of way impacts that would affect the estimate.

Utilities

The utility estimate is based on rural utility facilities typical of the area for approximately 14.6 miles.

Environmental Considerations

No NEPA documentation has been completed for the northern segment of the Laredo Bypass alignment. To comply with NEPA, an Environmental Impact Statement (EIS) would be required, and could fulfill NEPA requirements for both the northern and southern segments of the Laredo Bypass alignments together. Therefore, the cost of completing the EIS is split evenly between the northern and southern segments. Additional environmental compliance requirements would likely include Section 404 permits, Threatened and Endangered (T&E) Species Section 7 Consultation, an archaeological sites survey, and a potentially eligible historic sites survey and assessment. Environmental mitigation would be required for impacts to hazardous materials, wetlands, T&E species habitat, archaeological sites, and historic structures. One windmill could be potentially impacted by the proposed alignment, however, it is likely that a minor alignment shift would allow for no impact to this windmill site. No fatal flaws have been identified for this proposed project.

Noise and Vibration

This new alignment rail option would create noise and vibration impacts that do not currently exist. There is no known noise or vibration mitigation measures currently being implemented on the existing freight rail lines in the Laredo area, and no mitigation measures have been assumed for this new alignment option.

Air Pollution

The project area is located in an area that is considered in attainment for Federal air quality standards. Air quality analysis would not be required for this proposed rail alignment project.

Endangered Species

There are two endangered species that have potentially suitable habitat within the vicinity of this proposed rail alignment; the ocelot (*felis pardalis*) and the jaguarundi (*felis yagouaroundi*). Preliminary analysis indicates that approximately 266 ac. acres of potential endangered species habitat would be impacted, and mitigation for these impacts would likely involve habitat/land acquisition or payment to a mitigation bank. Also, Threatened and Endangered species, Section 7 Consultation with the U.S. Fish & Wildlife Service would be required.

Hazardous Materials

Preliminary analysis indicates that a relatively low number of hazardous material sites would be impacted by this proposed alignment because it is completely on new location, and occurs primarily within an undeveloped area.

Drainage and Floodplain Considerations

This proposed alignment crosses 18 streams and a few small ponds. Nationwide or Individual Permits will likely be required to comply with Section 404 of the Clean Water Act for impacts to the streams and associated riparian wetlands. It has been estimated that approximately 2 acres of riparian wetlands would be impacted by this proposed alignment, and would require mitigation.

Cultural Resources

No cemeteries or Section 4(f) properties have been identified that would be impacted by this project.

Archeological Impacts

An archaeological sites survey would be required for this proposed alignment, and would likely include approximately 14 miles archaeological site survey. Preliminary information indicates that there are approximately 8 potentially eligible and recorded National Register of Historic Places (NRHP) listed archaeological sites that could be impacted by this proposed alignment. These unlisted sites, if impacted, would require an archaeological NRHP testing investigation. It is likely that a small number (less than 5) of these potentially impacted archaeological sites would require mitigation through an archaeological data recovery investigation.

Historic Preservation

There are two potentially eligible NRHP structures in the project area. It is possible that one or two of these sites will require mitigation.

National Environmental Policy Act (NEPA)

The proposed alignment would require an Environmental Impact Statement (EIS) and a public hearing prior to project construction.

SOUTH RAIL BYPASS CORRIDOR – EAST ALTERNATIVE

General Description

The South Rail Bypass Corridor – East Alternative is located at the connection of the North Rail Bypass Corridor and travels south to a new crossing of the Rio Grande River. The corridor is approximately 8.5 miles long.

Future Roadway Development

In accordance to the Long Range Thoroughfare Plan, the future roadway work along the South Rail Bypass corridor is as depicted in the following table:

Corridor	Expressway	Industry Collector	Major Arterial	Major Collector	Minor Arterial	Modified Major Arterial
Existing Tex-Mex	1		2			
Existing UPRR			2			
UPRR Spur						
Camino Colombia					3	
North Rail By-pass			7	2	2	
South Rail Bypass (East)	1		1			
South Rail Bypass (West)			3	1	3	1



The proposed South Rail Bypass Corridor East Alternative is identified by segments S0 and S1. Traffic projections and delays are depicted in the following table.

Max. Train Speed (mph)	Segment	Road Name	2030 Volume @ Crossing	Driver Cost Due to Delay				
				Value of Time (dollars / hour)	Daily Cost (dollars)	Days / Year	Annual Cost	20-Year Cost Projection (current dollars)
H	S0	Segment Total (20 mph)	19,516	\$ 10.00	\$ 47,260	250	\$ 74,260	\$ 485,283
20	S0	Segment Total (20 mph)	19,516	\$ 10.00	\$ 37,260	250	\$ 9,177	\$ 103,539
25	S0	Segment Total (25 mph)	19,516	\$ 10.00	\$ 26,250	250	\$ 6,402	\$ 128,029
30	S0	Segment Total (30 mph)	19,516	\$ 10.00	\$ 19,250	250	\$ 4,829	\$ 98,565
35	S0	Segment Total (35 mph)	19,516	\$ 10.00	\$ 15,250	250	\$ 3,811	\$ 76,013
40	S0	Segment Total (40 mph)	19,516	\$ 10.00	\$ 13,250	250	\$ 3,174	\$ 63,474
B	S1	Segment Total (20 mph)	36,899	\$ 10.00	\$ 184,250	250	\$ 45,877	\$ 917,545
20	S1	Segment Total (20 mph)	36,899	\$ 10.00	\$ -	250	\$ -	\$ -
25	S1	Segment Total (25 mph)	36,899	\$ 10.00	\$ -	250	\$ -	\$ -
30	S1	Segment Total (30 mph)	36,899	\$ 10.00	\$ -	250	\$ -	\$ -
35	S1	Segment Total (35 mph)	36,899	\$ 10.00	\$ -	250	\$ -	\$ -
40	S1	Segment Total (40 mph)	36,899	\$ 10.00	\$ -	250	\$ -	\$ -

The values in the delay projection table are cumulative between segments. For example, should a train be able to attain an average 20 mph throughout the corridor, then the projected annual cost due to train delay would be \$9,177 plus \$0 plus (as there would be no at-grade crossings in this segment) for a total annual cost of approximately \$9,000.

Right-of-way

This project will require 11.6 miles of right of way (approximately 70 to 80 acres based on a 50' wide railroad right-of-way). This is new alignment and based on an aerial map provided, there does not appear to be significant right of way impacts that would affect the estimate.

Utilities

The utility estimate is based on utility facilities typical of the area for approximately 11.6 miles.

Environmental Considerations

No NEPA documentation has been completed for the southern segment of the Laredo Bypass alignment. To comply with NEPA, an Environmental Impact Statement (EIS) would be required, and could fulfill NEPA requirements for both the northern and southern segments of the Laredo Bypass alignments together. Therefore, the cost for completing the EIS is split evenly between the northern and southern segments. Additional environmental compliance requirements would likely include Section 404 permits, Threatened and Endangered (T&E) Species Section 7 Consultation, and an archaeological sites survey. For the bridge crossing at the Rio Grande River a Presidential Permit would be required from the U.S. State Department, which would include a Section 10 Permit from the U.S. Corps of Engineers (USACE) for impacts to a

Navigable Water, and coordination with the U.S. Coast Guard (USCG), the U.S. Fish & Wildlife Service (USFWS), the U.S. International Boundary and Water Commission (USIBWC), and the State Historic Preservation Office (SHPO). Environmental mitigation would be required for impacts to hazardous materials, wetlands, T&E species habitat, and archaeological sites. No fatal flaws have been identified for this proposed project.

Noise and Vibration

This new alignment rail option would create noise and vibration impacts that do not currently exist. There is no known noise or vibration mitigation measures currently being implemented on the existing freight rail lines in the Laredo area, and no mitigation measures have been assumed for this new alignment option.

Air Pollution

The project area is located in an area that is considered in attainment for Federal air quality standards. Air quality analysis would not be required for this proposed rail alignment project.

Endangered Species

There are two endangered species that have potentially suitable habitat within the vicinity of this proposed rail alignment; the Ocelot (*felis pardalis*) and the Jaguarundi (*felis yagouarundi*). Preliminary analysis indicates that approximately 115 acres of potential endangered species habitat would be impacted, and mitigation for these impacts would likely involve habitat/land acquisition or payment to a mitigation bank. Also, Threatened and Endangered species, Section 7 Consultation with the U.S. Fish & Wildlife Service would be required.

Hazardous Materials

Preliminary analysis indicates that a relatively low number of hazardous material sites would be impacted by this proposed alignment because it is completely on new location, and occurs primarily within an undeveloped area.

Drainage and Floodplain Considerations

This proposed alignment crosses 9 streams, a few small ponds, and also the Rio Grande River. Nationwide or Individual Permits will likely be required to comply with Section 404 of the Clean Water Act for impacts to the streams and associated riparian wetlands. It has been estimated that approximately 2 acres of riparian wetlands would be impacted by this proposed alignment, and would require mitigation.

For the bridge crossing at the Rio Grande River, a Presidential Permit would be required from the U.S. State Department, a Section 10 permit would be required for impacts to a Navigable Water, and also coordination with the U.S. Coast Guard (USCG), U.S. Fish & Wildlife Service (USFWS), the State Historic Preservation Office (SHPO), and the U.S. International Boundary and Water Commission (USIBWC) would be required.

Cultural Resources

No cemeteries or Section 4(f) properties have been identified that would be impacted by this project.

Archeological Impacts

An archaeological sites survey would be required for this proposed alignment, and would likely include approximately 20 miles of linear transect. Preliminary information indicates that there are approximately 10 potentially eligible and recorded National Register of Historic Places (NRHP) listed archaeological sites that could be impacted by this proposed alignment. These unlisted sites, if impacted, would require an archaeological NRHP testing investigation. It is likely that a small number (less than 5) of these potentially impacted archaeological sites would require mitigation through an archaeological data recovery investigation.

Historic Preservation

There are two potentially eligible NRHP structures in the project area. It is possible that one or two of these sites will require mitigation.

National Environmental Policy Act (NEPA)

The proposed alignment would require an Environmental Impact Statement (EIS) and a public hearing prior to project construction.

SOUTH RAIL BYPASS CORRIDOR – WEST ALTERNATIVE

General Description

The South Rail Bypass Corridor – West Alternative starts approximately 3 miles west of the North Rail Bypass Corridor connection with TexMex line and travels south to a new crossing of the Rio Grande River. The corridor is approximately 7.5 miles long

Future Roadway Development

In accordance to the Long Range Thoroughfare Plan, the future roadway work along the existing Tex-Mex corridor is as depicted in the following table:



Corridor	Expressway	Industry Collector	Major Arterial	Major Collector	Minor Arterial	Modified Major Arterial
Existing Tex-Mex	1		2			
Existing UPRR			2			
UPRR Spur						
Camino Colombia					3	
North Rail By-pass			7	2	2	
South Rail Bypass (East)	1		1			
South Rail Bypass (West)			3	1	3	1

The proposed South Rail Bypass West Alternative corridor consists of segments S0 and S2. Traffic projections and delays are depicted in the following table.

Max. Train Speed (mph)	Segment	Road Name	2030 Volume @ Crossing	Driver Cost Due to Delay				
				Value of Time (dollars / hour)	Daily Cost (dollars)	Days / Year	Annual Cost	20-Year Cost Projection (current dollars)
D	S0 Segment Total (20 mph)		18,018	\$ 10.00	\$ 37,236	24,205	\$ 485,293	
20	S0 Segment Total (20 mph)		18,018	\$ 10.00	\$ 37,236	9,177	\$ 183,539	
25	S0 Segment Total (25 mph)		18,018	\$ 10.00	\$ 28,220	5,402	\$ 128,039	
30	S0 Segment Total (30 mph)		18,018	\$ 10.00	\$ 19,204	4,220	\$ 96,575	
35	S0 Segment Total (35 mph)		18,018	\$ 10.00	\$ 15,200	3,241	\$ 76,813	
40	S0 Segment Total (40 mph)		18,018	\$ 10.00	\$ 13,200	3,174	\$ 63,474	
R	S2 Segment Total (20 mph)		60,588	\$ 10.00	\$ 321,250	75,350	\$ 1,506,806	
20	S2 Segment Total (20 mph)		60,588	\$ 10.00	\$ 173,250	43,761	\$ 865,227	
25	S2 Segment Total (25 mph)		60,588	\$ 10.00	\$ 121,250	30,180	\$ 603,591	
30	S2 Segment Total (30 mph)		60,588	\$ 10.00	\$ 91,250	22,763	\$ 455,267	
35	S2 Segment Total (35 mph)		60,588	\$ 10.00	\$ 72,250	18,105	\$ 362,105	
40	S2 Segment Total (40 mph)		60,588	\$ 10.00	\$ 60,250	15,361	\$ 307,225	

The values in the delay projection table are cumulative between segments. For example, should a train be able to attain an average 20 mph throughout the corridor, then the projected annual cost due to train delay would be \$183,539 plus \$865,227 for a total annual cost of approximately \$1,049,000.

Right-of-way

This project will require 11.5 miles of right of way (70 to 80 acres based on a 50' wide railroad right-of-way). This is new alignment and based on an aerial map provided, there does not appear to be significant right of way impacts that would affect the estimate.

Utilities

The utility estimate is based on utility facilities typical of the area for an approximate distance of 11.5 miles.

Environmental Considerations

No NEPA documentation has been completed for the southern segment of the Laredo Bypass alignment. To comply with NEPA, an Environmental Impact Statement (EIS) would be required, and could fulfill NEPA requirements for both the northern and southern segments of the Laredo Bypass alignments together. Therefore, the cost for completing the EIS is split evenly between the northern and southern segments. Additional environmental compliance requirements would likely include Section 404 permits, Threatened and Endangered (T&E) Species Section 7 Consultation, and an archaeological sites survey. For the bridge crossing at the Rio Grande River a Presidential Permit would be required from the U.S. State Department, which would include a Section 10 Permit from the U.S. Corps of Engineers (USACE) for impacts to a Navigable Water, and coordination with the U.S. Coast Guard (USCG), U.S. Fish & Wildlife Service (USFWS), the U.S. International Boundary and Water Commission (USIBWC), and the State Historic Preservation Office (SHPO). Environmental mitigation would be required for impacts to hazardous materials, wetlands, T&E species habitat, and archaeological sites.

Noise and Vibration

This new alignment rail option would create noise and vibration impacts that do not currently exist. There is no known noise or vibration mitigation measures currently being implemented on the existing freight rail lines in the Laredo area, and no mitigation measures have been assumed for this new alignment option.

Air Pollution

The project area is located in an area that is considered in attainment for Federal air quality standards. Air quality analysis would not be required for this proposed rail alignment project.

Endangered Species

There are two endangered species that have potentially suitable habitat within the vicinity of this proposed rail alignment; the Ocelot (*felis pardalis*) and the Jaguarundi (*felis yagouarundi*). Preliminary analysis indicates that approximately 113 acres of potential endangered species habitat would be impacted, and mitigation for these impacts would likely involve habitat/land acquisition or payment to a mitigation bank. Also, Threatened and Endangered species, Section 7 Consultation with the U.S. Fish & Wildlife Service would be required.

Hazardous Materials

Preliminary analysis indicates that a relatively low number of hazardous material sites would be impacted by this proposed alignment because it is completely on new location, and occurs primarily within an undeveloped area.

Drainage and Floodplain Considerations

This proposed alignment crosses 8 streams, a few small ponds, and also the Rio Grande River. Nationwide or Individual Permits will likely be required to comply with Section 404 of the Clean Water Act for impacts to the streams and associated riparian wetlands. It has been estimated that approximately 2 acres of riparian wetlands would be impacted by this proposed alignment, and would require mitigation. For the bridge crossing at the Rio Grande River, a Presidential Permit would be required from the U.S. State Department, a Section 10 permit would be required for impacts to a Navigable Water, and also coordination with the U.S. Coast Guard (USCG), U.S. Fish & Wildlife Service (USFWS), the State Historic Preservation Office (SHPO), and the U.S. International Boundary and Water Commission (USIBWC) would be required.

Cultural Resources

No cemeteries or Section 4(f) properties have been identified that would be impacted by this project.

Archeological Impacts

An archaeological sites survey would be required for this proposed alignment, and would likely include approximately 20 miles of linear transect. Preliminary information indicates that there are approximately 10 estimated and recorded archaeological sites of unknown National Register of Historic Places (NRHP) eligibility that would be impacted by this proposed alignment. These sites, if impacted, would require an archaeological NRHP testing investigation. It is likely that a small number (less than 5) of these potentially impacted archaeological sites would require mitigation through an archaeological data recovery investigation.

Historic Preservation

There are two potentially eligible NRHP structures in the project area. It is possible that one or two of these sites will require mitigation.

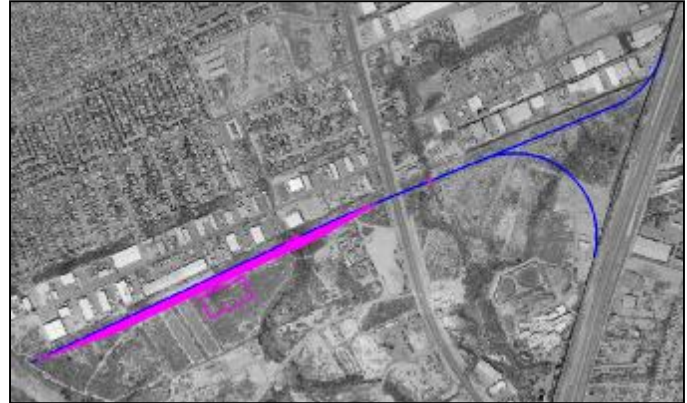
National Environmental Policy Act (NEPA)

The proposed alignment would require an Environmental Impact Statement (EIS) and a public hearing prior to project construction.

UPRR Spur Corridor

General Description

The UPRR Spur Corridor runs in a northeast to southwest direction starting at the UPRR track approximately 1.5 miles south of Loop 20 and continuing southwesterly to the Rio Grande River and a proposed new International Rail Bridge. The UPRR connection would consist of a wye track to provide service north and south along the UPRR track.



Future Roadway Development

In accordance to the Long Range Thoroughfare Plan, the future roadway work along the UPRR Spur corridor is as depicted in the following table:

Corridor	Expressway	Industry Collector	Major Arterial	Major Collector	Minor Arterial	Modified Major Arterial
Existing Tex-Mex	1		2			
Existing UPRR			2			
UPRR Spur						
Camino Colombia					3	
North Rail By-pass			7	2	2	
South Rail Bypass (East)	1		1			
South Rail Bypass (West)			3	1	3	1

The proposed UPRR Spur corridor consists of segment N2. Traffic projections and delays are depicted in the following table.

Max. Train Speed (mph) Segment	Road Name	2030 Volume @ Crossing	Driver Cost Due to Delay			
			Value of Time (dollars / hour)	Daily Cost (dollars)	Days / Year	Annual Cost
15 N2 Segment Total (15 mph)		97,138	\$ 10.00	\$ 483,250	\$ 241,771	\$ 2,415,473
20 N2 Segment Total (20 mph)		97,138	\$ 10.00	\$ 40,250	\$ 11,138	\$ 222,778
25 N2 Segment Total (25 mph)		97,138	\$ 10.00	\$ 31,250	\$ 7,771	\$ 155,412
30 N2 Segment Total (30 mph)		97,138	\$ 10.00	\$ 23,250	\$ 5,861	\$ 117,722
35 N2 Segment Total (35 mph)		97,138	\$ 10.00	\$ 19,250	\$ 4,662	\$ 93,235
40 N2 Segment Total (40 mph)		97,138	\$ 10.00	\$ 15,250	\$ 3,552	\$ 77,044

Should a train be able to attain an average 20 mph throughout the corridor, then the projected annual cost due to train delay would be \$222,778.

Right-of-way

This project will require approximately 1.6 miles of right of way or 39 acres (including yard facilities). This is new alignment and based on an aerial map provided, there does not appear to be significant right of way impacts that would affect the estimate. Also included in this estimate are considerations for a customs facility and yard. It should be noted that UPRR may own property along this corridor and which may reduce the ultimate cost of property acquisition.

Utilities

The utility estimate is based on utility facilities typical of the area for a distance of approximately 1.6 miles.

Environmental Considerations

Noise and Vibration

This new alignment rail option would create noise and vibration impacts that do not currently exist. There is no known noise or vibration mitigation measures currently being implemented on the existing freight rail lines in the Laredo area, and no mitigation measures have been assumed for this new alignment option.

Air Pollution

The project area is located in an area that is considered in attainment for Federal air quality standards. Air quality analysis would not be required for this proposed rail alignment project.

Endangered Species

The proposed alignment would be constructed completely within new right-of-way (ROW) within a 39-acre site. However, no Threatened or Endangered species habitat has been identified that would be impacted within the new ROW area.

Hazardous Materials

A hazardous materials site survey would be required within the 39 acre site. Due to the industrial nature of this area, it is likely that some hazardous material sites within this project location would require mitigation.

Drainage and Floodplain Considerations

For the bridge crossing at the Rio Grande River, a Presidential Permit would be required from the U.S. State Department, a Section 10 permit would be required for impacts to a Navigable Water, and also coordination with the U.S. Coast Guard (USCG), U.S. Fish & Wildlife Service (USFWS), the State Historic Preservation Office (SHPO), and the U.S. International Boundary and Water Commission (USIBWC) would be required. Also, Section 404 permits would be required from the U.S. Army Corps of Engineers (USACE) for three stream crossings.

Cultural Resources

No cemeteries or Section 4(f) properties have been identified that would be impacted by this project.

Archeological Impacts

An archaeological sites survey would likely be required within the project site. If archaeological sites are found within this area, National Register of Historic Places (NRHP) eligibility testing, and possible data recovery investigations would likely be required.

Historic Preservation

A potentially eligible historic structures survey and assessment would be required within the project site. If historic structures are encountered within this area, then potentially eligible historic structures mitigation would be required.

National Environmental Policy Act (NEPA)

The proposed alignment would require an Environmental Assessment (EA) and a public hearing prior to project construction.

Grade Crossings and Separations

At present there would be no new grade crossings or separations required as a part of this connection. However, future roadway extensions (CP&L) are planned and would be greatly affected by the location of the customs yard. The yard arrangement would have to be modified or the roadway would perhaps require grade separation over the yard.

Summary Comparison and Findings

This study evaluates the feasibility of four proposed route alternatives (with two subset options) against incorporation of upgrades of the existing UPRR and Tex-Mex lines. The following table summarizes the strengths and weaknesses of each alternative and offers a comparison methodology that result in a preferred alternative.

Conceptual Cost Estimates

Conceptual cost estimates have been provided and their use should be carefully considered. The intent of these estimates is to provide an order-of-magnitude understanding of the relative project costs. Many assumptions have been incorporated based on industry standard construction, localized right-of-way acquisition costs and our experience. Many cost factors are not in the control of the estimator which may influence the overall cost of any individual or combination of project options. Some of those influential factors may include negotiations between railroads, counties and countries, localized price of fuel, steel and other materials. Therefore, it is recommended that these estimates not be used to set budgets, as a basis of negotiation, or any other aspects outside of a comparison between alternatives to best understand the relative costs between projects.

Summary Alternative Comparison

Our analysis indicates that there appears to be no fatal flaws in any of the alternatives examined.

The following summary consolidates major points for each corridor alternative.

Camino Colombia Corridor (SH 255)

Supporting Points

- Provides substantial reduction in through mainline traffic on the UPRR tracks into town.
- Minimal environmental effort required as the corridor assumes to utilize the existing Camino Columbia Tollway right-of-way.
- Costs are minimized on right-of-way purchase.
- Mexico is in favor of crossing at this location as it is outside of the Nuevo Laredo developments
- This option has the least environmental impact (noise, cultural resources, historic preservation, hazardous materials, etc.) of all options.
- This option appears to have the least amount of adverse impact on the traveling public.
- There is a moderate potential for economic development along the corridor.

Points In Opposition

- Virtually no reduction in through mainline traffic seen on the Tex-Mex tracks
- Tex-Mex will require trackage rights on UPRR in order to use the Camino Columbia option
- Only the North and South Rail Bypass option and the North and South Rail Bypass with Camino Colombia option are more expensive.

UPRR Spur Corridor

Supporting Points

- Provides moderate reduction in through mainline traffic on the UPRR tracks into town but north of the connection will continue to increase in traffic.

Points In Opposition

- Virtually no reduction in through mainline traffic seen on the Tex-Mex tracks

North and South Rail Bypass (West Option)

Supporting Points

- Provides the best reduction in through mainline traffic on both the UPRR and Tex-Mex. Only local and emergency routing train traffic may be seen within the City core.

Points In Opposition

- This is the second most expensive option.

North and South Rail Bypass (East Option)

Supporting Points

- Provides the best reduction in through mainline traffic on both the UPRR and Tex-Mex. Only local and emergency routing train traffic may be seen within the City core.

Points In Opposition

- This is the second most expensive option.

South Rail Bypass (West Option)

Supporting Points

- Provides substantial reduction in through mainline traffic on the Tex-Mex tracks into town.

Points In Opposition

- Virtually no reduction in through mainline traffic seen on the UPRR tracks.

South Rail Bypass (East Option)

Supporting Points

- Provides substantial reduction in through mainline traffic on the Tex-Mex tracks into town.

Points In Opposition

- Virtually no reduction in through mainline traffic seen on the UPRR tracks.

Upgrade UPRR Line

Supporting Points

- This will improve traffic delays on the UPRR tracks only.

Points In Opposition

- Virtually no effect on the Tex-Mex service.

Upgrade Tex-Mex Line

Supporting Points

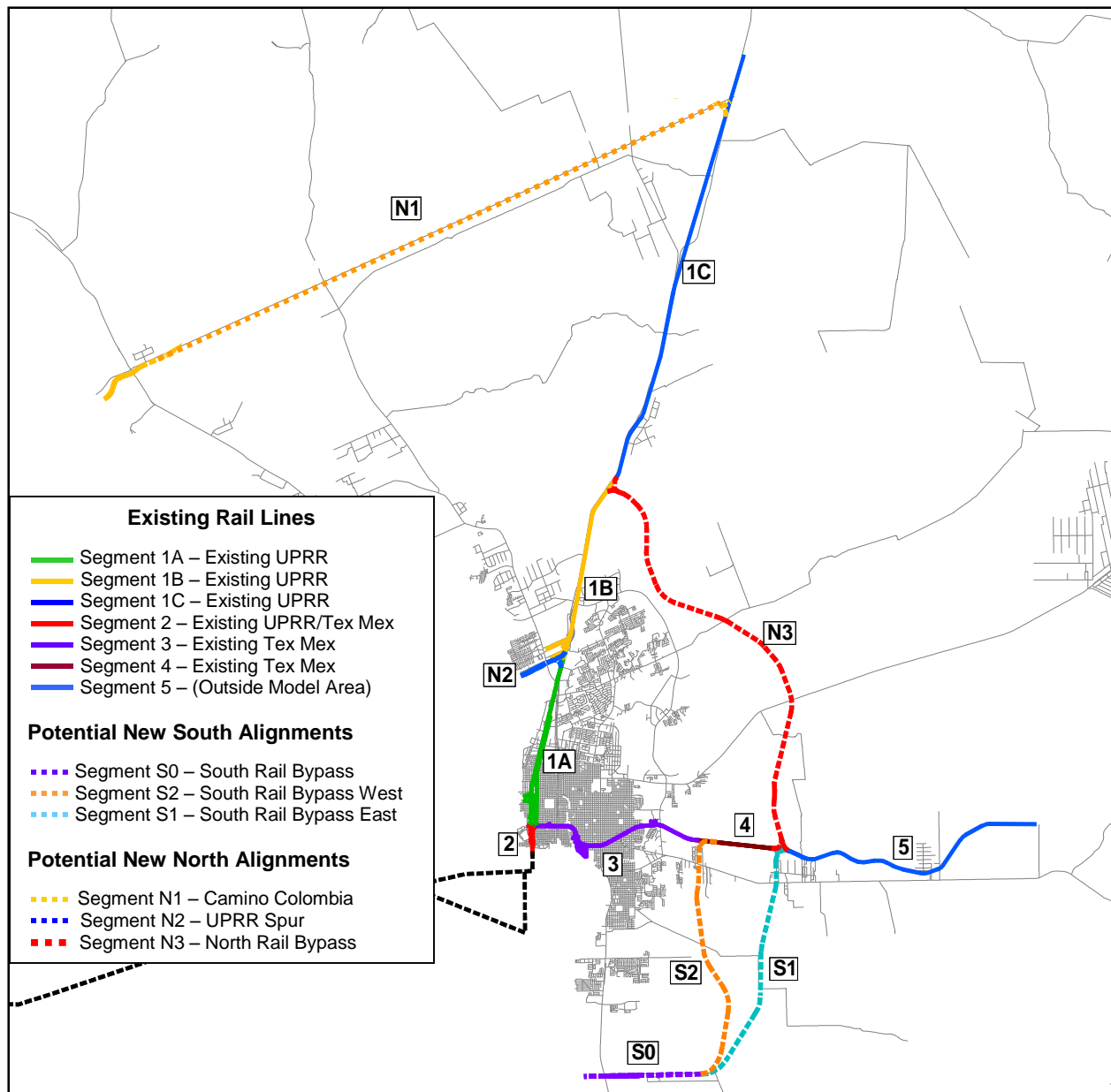
- This will improve traffic delays on the Tex-Mex tracks only.

Points In Opposition

- Virtually no effect on the UPRR service.

Roadway Delay Scenarios

Referring back to the segment analysis map (see below), there are several operating scenarios that are possible as a result of the corridor segments.



There are 9 operating scenarios that are possible in this analysis. They include:

1. Utilizing segment N1 exclusively (Scenario 1).
2. Defining a corridor by segments 1C, N3, S0 and S1 (Scenario 2)
3. A corridor defined by segments 1C, 4, N3, S0 and S2 (Scenario 3)
4. A corridor defined by segments 2, 3 and 4 (Scenario 4)
5. A corridor defined by segments 1A, 1B, 1C and 2 (Scenario 5)
6. A corridor defined exclusively with segment N2 (Scenario 6)
7. A corridor defined by segments 1C, N2, N3 (Scenario 7)
8. A corridor defined by segments 1B, N2 and N3 (Scenario 8)
9. A corridor defined by segments 1B, 1C and N2 (Scenario 9)

The following table illustrates the delay cost comparison between each scenario based on an average 30 mph train transit time.

Max. Train Speed (mph)	Scenario	2030 Volume @ Crossing	24-hour Period										Driver Cost Due to Delay				
			% of Traffic in 24-hour Period	Volume in 24-hour Period (vehicles)	Hours in 24-hour Period	Minutes in 24-hour Period	Vehicles per Minute in 24-hour Period	Total Crossing Delay per Train During 24-hour Period (minutes)	Average Delay per Vehicle per Train (minutes - assume 1/2 of total crossing delay)	Trains in 24-hour Period	Total Vehicle Delay During 24-hour Period (minutes)	Total Vehicle Delay During 24-hour Period (hours)	Value of Time (dollars / hour)	Daily Cost (dollars)	Days / Year	Annual Cost	20-Year Cost Projection (current dollars)
Baseline	Scenario 1 (N1)	27,781	100.0%	27,781	24	1,440	19.3	3.78	1.89	6	829.0	13.8	\$ 10.00	\$ 138	250	\$ 34,541	\$ 690,814
30 mph	Scenario 1 (N1)	27,781	100.0%	7,254	24	1,440	5.0	2.75	1.37	6	113.9	1.9	\$ 10.00	\$ 19	250	\$ 4,746	\$ 94,913
2 - B	Scenario 2 (1C, N3, S0, S1)	189,156	100.0%	189,156	24	1,440	131.4	3.78	1.89	6	5,644.4	34.1	\$ 10.00	\$ 341	250	\$ 235,181	\$ 4,703,630
2 - 30	Scenario 2 (1C, N3, S0, S1)	189,156	100.0%	123,142	24	1,440	85.5	2.75	1.37	6	1,933.5	32.2	\$ 10.00	\$ 322	250	\$ 80,561	\$ 1,611,223
3 - B	Scenario 3 (1C, 4, N3, S0, S)	288,729	100.0%	288,729	24	1,440	200.5	3.78	1.89	6	8,615.6	143.6	\$ 10.00	\$ 1,436	250	\$ 358,983	\$ 7,179,652
3 - 30	Scenario 3 (1C, 4, N3, S0, S)	288,729	100.0%	233,821	24	1,440	162.4	2.75	1.37	6	3,671.3	61.2	\$ 10.00	\$ 612	250	\$ 152,969	\$ 3,059,377
4 - B	Scenario 4 (2, 3, 4)	512,571	100.0%	512,571	24	1,440	356.0	3.78	1.89	8	15,369.6	256.2	\$ 10.00	\$ 2,562	250	\$ 640,399	\$ 12,807,989
4 - 30	Scenario 4 (2, 3, 4)	512,571	100.0%	255,779	24	1,440	177.6	3.44	1.72	8	6,634.1	110.6	\$ 10.00	\$ 1,106	250	\$ 276,421	\$ 5,528,420
5 - B	Scenario 5 (1A, 1B, 1C, 2)	437,859	100.0%	437,859	24	1,440	304.1	3.78	1.89	8	13,140.2	219.0	\$ 10.00	\$ 2,190	250	\$ 547,509	\$ 10,950,170
5 - 30	Scenario 5 (1A, 1B, 1C, 2)	437,859	100.0%	277,301	24	1,440	192.6	3.26	1.63	8	6,327.1	115.5	\$ 10.00	\$ 1,155	250	\$ 288,629	\$ 5,772,576
6 - B	Scenario 6 (N2)	97,136	100.0%	97,136	24	1,440	67.5	3.78	1.89	6	2,898.5	48.3	\$ 10.00	\$ 483	250	\$ 120,771	\$ 2,415,423
6 - 30	Scenario 6 (N2)	97,136	100.0%	8,359	24	1,440	6.2	2.75	1.37	6	140.7	2.3	\$ 10.00	\$ 23	250	\$ 5,861	\$ 117,222
7 - B	Scenario 7 (1C, N1, N3)	160,522	100.0%	160,522	24	1,440	111.5	3.78	1.89	6	4,789.9	79.8	\$ 10.00	\$ 798	250	\$ 199,580	\$ 3,991,605
7 - 30	Scenario 7 (1C, N1, N3)	160,522	100.0%	123,015	24	1,440	85.4	2.75	1.37	6	1,931.5	32.2	\$ 10.00	\$ 322	250	\$ 80,478	\$ 1,609,562
8 - B	Scenario 8 (1B, N2, N3)	325,303	100.0%	325,303	24	1,440	226.3	3.78	1.89	6	9,724.8	162.1	\$ 10.00	\$ 1,621	250	\$ 405,202	\$ 8,104,036
8 - 30	Scenario 8 (1B, N2, N3)	325,303	100.0%	220,746	24	1,440	153.3	2.75	1.37	6	3,466.0	57.8	\$ 10.00	\$ 578	250	\$ 144,415	\$ 2,888,300
9 - B	Scenario 9 (1B, 1C, N2)	197,720	100.0%	197,720	24	1,440	137.3	3.78	1.89	6	5,899.9	98.3	\$ 10.00	\$ 983	250	\$ 245,829	\$ 4,916,586
9 - 30	Scenario 9 (1B, 1C, N2)	197,720	100.0%	103,543	24	1,440	76.1	2.75	1.37	6	1,719.9	28.7	\$ 10.00	\$ 287	250	\$ 71,665	\$ 1,433,290

This analysis concludes the scenario order (ascending 20-year projected delay costs):

1. Scenario 1 - \$95,000 annual delay cost
2. Scenario 6 - \$117,000 annual delay costs
3. Scenario 9 - \$1,433,000 annual delay cost
4. Scenario 7 - \$1,610,000 annual delay cost
5. Scenario 2 - \$1,611,000 annual delay cost
6. Scenario 8 - \$2,888,000 annual delay cost
7. Scenario 3 - \$3,059,000 annual delay cost
8. Scenario 4 - \$5,528,000 annual delay cost
9. Scenario 5 - \$5,773,000 annual delay cost

It should be noted that each of these scenarios will carry considerable train operations impacts to the railroads that use the corridors. For example, Scenario 6 (UPRR Spur) will require that the Tex-Mex train traffic be routed northerly on UPRR to utilize that track. This will likely not happen and therefore the traffic delays along segments 2, 3, 4 and 5 will not see a benefit from utilizing the UPRR spur.

Corridor Evaluation Tables

On the following pages is a compilation of results in a tabular form. This form offers a way to evaluate various elements of each alternative and provide a “weighting” to aid in developing the apparent preferred alternative. To better understand the table the following explanations are provided.

Columns

Evaluation Criteria – The evaluation criteria includes 5 basic categories.

- Railroad Infrastructure describes the basic geometric and operating characteristics for each rail corridor.
- Roadways reviews the impacts to local streets with regard to delays and emergency routing.
- International considerations provides a basic review of the teams understanding of Mexican view points of the corridor and required construction in Mexico to serve the corridor.
- Environmental identifies various categories to consider and evaluate for each corridor related to noise, air pollution, cultural resources, historic preservation, hazardous materials and permitting requirements.
- Order of Magnitude project costs identifies approximate costs of various elements of construction for each alternative.

Category Weighting – This column enables the customization of influence to each of the categories described above. The values in the table today represent the consulting teams’ best estimation to the best distribution of values for each of the stakeholders.

Individual Weighting – This column provides a basis of assigning weights within the category based on the consulting teams evaluations.

Alternative Columns – Each column following the individual weighting column provides the location for input of values for each category. Values can be numeric or based on a relative scoring scheme such as low, medium or high. The Rank is then subjectively determined based on the value comparison to the other alternatives and the score is computed based on the individual weighting. Each category score is then summed with the total at the bottom of the sheet.

Rows

Railroad Infrastructure – This group of rows describes the impact of various elements of each alternative on the railroad.

- Project Length – Approximate distance from start to end of the alternative.
- Number of Grade Crossings Reduced – This is an accounting of how many grade separations are no longer needed as a result of grade separation or closure.
- Minutes crossing project – the time in minutes for a train traveling at 40 mph to traverse the alternative's length.
- UP Operating Length – the actual distance a UPRR train must travel to take advantage of the proposed alternative.
- Tex-Mex Operating Length – the actual distance a Tex-Mex train must travel to take advantage of the proposed alternative.
- Trackage Rights Required – this is a yes/no field that identifies whether there must be trackage rights offered to utilize the alternative.
- Number of Structures – this is an accounting of drainage structures that may be required. Please note this is approximate only.
- Train Operating Speed within the City Limits – this field identifies whether the corridor speed might be increased throughout the city limits. It is a low/medium/high opportunity field.
- Business Opportunities – this field identifies whether there may be railroad business opportunities along the proposed alternative alignment. It is a subjective field based on low/medium/high evaluation.
- Business Challenges – this field identifies potential businesses that would require relocation or negative impact due to the proposed alignment. It is a subjective field based on low/moderate/high evaluation.
- Future Grade Separations – This field utilizes the Long-Range Thoroughfare Plan and provides an approximate value to the future construction costs. The scores are distributed between zero and ten.

Roadways – This group of rows describes the impact of various elements of each alternative on streets, freeways or expressways.

- Average Delay – This field reviews the vehicular delays experienced (or anticipated) for each corridor. The data is based on traffic data provided by the City and then subjectively scored using a low/moderate/high impact scoring.
- Adverse Emergency Routing Impact – This field reviews the impact of crossing closures to emergency vehicle routing. The field is scored using a subjective low/moderate/high impact scoring.
- Adverse local street impacts – Changes due to crossing closures, grade separations may have an adverse impact to local streets. This field provides a subjective evaluation of the impacts using a low/moderate/high evaluation.
- Adverse State Highway Impacts – Proposed alignments or grade separations may require modifications to State Highways. This field provides a subjective evaluation of the impacts using a none/low/moderate/high evaluation criteria.
- Adverse Interstate Highway Impacts – identical to Adverse State Highway Impacts but for Interstate Highways.

International Considerations – This group of rows provides cursory evaluation of influences that may be seen from Mexico.

- Likelihood of Mexico Approval – this field provides recognition of the general understanding the team has gathered by discussing alternatives with various groups and individuals within the confines of the United States. There is no contribution to these considerations directly from Mexican authorities.
- Required Construction – this field identifies whether there will be required construction on the Mexican side to serve the proposed alternative.

Environmental – This group of rows provides a review of various corridor elements that would be affected by the proposed alternative.

- Adverse Noise and Vibration Impact – This field identifies the relative adverse impact that train noises and vibrations may be experienced along each alternative. It is evaluated subjectively on a low to high scale.
- Adverse Endangered Species Impact – This evaluation attempts to determine if any endangered species would be affected by the construction or operation of the alternative corridor. It is scored on a none/low/moderate/high evaluation.
- Adverse Cultural Resources Impact – This field reviews the impact of the construction to various cultural resources along the alignment and is scored on a comparative low/moderate/high scale.
- Adverse Historic Preservation Impact – Should there be any structures or other features that have historic value, this field provides an evaluation using a low/moderate/high comparison.
- Possible Hazardous Materials – Our research focused on known hazardous materials and the evaluation was provided using a low/moderate/high risk factor.
- Adverse Floodplain Impacts – Should a corridor fall within the floodplain, then the type of permit required was identified and scored with regards to the challenge and effort required to obtain the permit.
- Adverse Archeological Impacts – If the alternative corridor appeared to affect potential archeological sites, then it was scored subjectively using a low/moderate/high comparison.
- NEPA Requirements – An estimate of what NEPA requirements was undertaken for each corridor. The result identified potential approaches and the evaluation considered an EIS the worse case scenario.
- Environmental Compliance Schedule – The time it takes to complete the NEPA process is often a consideration in the evaluation of a corridor. EIS quality commitment was considered to be the longest term and therefore scored the lowest value.
- Environmental Mitigation Schedule – The time to mitigate environmental findings may also play role in completing the project. It 1-1/2 years was considered the worse case scenario and subsequently scored the lowest.

Order of Magnitude Project Costs – This group of rows accumulates the estimated alternative costs.

- Total Estimated Project Costs – These costs represent a relative conceptual project cost comparison utilizing similar approaches between each alternative. These costs should not be used for budgeting of the project, but rather for comparison only between alternatives.
- Right-of-Way Estimated Costs – The land required to build an alternative was estimated utilizing average corridor widths and land values associated with the land use type encountered by the alternative. Appraisal or tax assessment values were not used, nor were property owners identified. This value should not be used for budgeting purposes, rather only as a comparative value between alternatives.
- Environmental Estimated Costs – These conceptual costs represent potential costs for permits and mitigation. These values should not be used for budgeting purposes, but rather only for comparative analysis.

CORRIDOR EVALUATION COMPARISON MATRIX																				
May 6, 2005																				
Evaluation Criteria	Category Weighting	Individual Weighting	CORRIDORS																	
			Camino Columbia			North and South Rail Bypass East			North and South Rail Bypass West			North Rail Bypass w/ Camino Colombia			North Rail Bypass w/ UPRR Spur			South Rail Bypass East Alone		
			Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score
Railroad Infrastructure																				
Project Length (miles)		7%	22.3	2	0.1	0.0	2	0.1	0.0	2	0.1	22.3	0	0.0	0.0	4	0.3	0.0	6	0.4
Number of Grade Crossings Reduced (public) ²		20%	-33	5	1.0	-76	8	1.6	-76	8	1.6	-109	10	2.0	-73	4	0.0	-37	6	1.2
Minutes crossing project (assume 40mph on New)		15%	33.5	2	0.3	0.0	2	0.3	0.0	2	0.3	33.5	0	0.0	0.0	4	0.6	0.0	6	0.9
UP Operating Length		10%	22.3	4	0.4	28.4	0	0.0	26.1	2	0.2	22.3	4	0.4	1.6	8	0.8	18.6	5	0.5
Tex-Mex Operating Length		5%	43.9	2	0.1	11.6	6	0.3	11.5	6	0.3	48.3	0	0.0	21.6	4	0.2	11.6	6	0.3
Trackage Rights Required		3%	Yes	0	0.0	Yes	0	0.0	No	10	0.3	Yes	0	0.0	Yes	0	0.0	Yes	0	0.0
Number of Structures		3%			0.0			0.0			0.0			0.0			0.0			0.0
Train Operating Speed within City Limits		5%	Moderate	5	0.3	Moderate	5	0.3	Moderate	5	0.3	Moderate	5	0.3	Low	2	0.1	Low	2	0.1
Business Opportunities		7%	Moderate	5	0.4	High	10	0.7	High	10	0.7	High	10	0.7	Moderate	5	0.4	Low	0	0.0
Business Challenges		15%	Low	10	1.5	Moderate	5	0.8	Moderate	5	0.8	Moderate	5	0.8	Moderate	5	0.8	Moderate	5	0.8
Future Grade Separations		10%	\$31 million	7	0.7	\$128 million	2	0.2	\$171 million	1	0.1	\$133 million	2	0.2	\$102 Million	3	0.3	\$26 million	8	0.8
Category Total	15%	100%	<i>Weighted Score:</i> 0.711			<i>Weighted Score:</i> 0.636			<i>Weighted Score:</i> 0.696			<i>Weighted Score:</i> 0.645			<i>Weighted Score:</i> 0.507			<i>Weighted Score:</i> 0.746		
Roadways																				
Average Delay Costs		40%	Lowest	10	4	Moderate	5	2	Low	3	1.2	Moderate	6	2.4	Moderate	4	1.6	High	3	1.2
Adverse Emergency Routing Impact		10%	Moderate	4	0.4	Low	8	0.8	Low	8	0.8	Low	9	0.9	Moderate	6	0.6	Moderate	5	0.5
Adverse Local Street Impacts		20%	Moderate	4	0.8	Moderate	7	1.4	Moderate	7	1.4	Moderate	7	1.4	Moderate	6	1.2	Moderate	5	1
Adverse State Highway Impacts		20%	None	10	2	Low	3	0.6	Low	3	0.6	None	10	2	None	10	2	Low	3	0.6
Adverse Interstate Highway Impacts		10%	None	10	1	None	10	1	None	10	1	None	10	1	None	10	1	None	10	1
Category Total	25%	100%	<i>Weighted Score:</i> 2.05			<i>Weighted Score:</i> 1.45			<i>Weighted Score:</i> 1.25			<i>Weighted Score:</i> 1.925			<i>Weighted Score:</i> 1.6			<i>Weighted Score:</i> 1.075		
International Considerations																				
Likelihood of Mexico Approval		80%	High	10	8	Low	0	0	Low	0	0	Low	0	0	Low	0	0	Low	0	0
Required Construction		20%	High	0	0	Moderate	5	1	Moderate	5	1	High	0	0	Low	7	1.4	Moderate	5	1
Category Total	15%	100%	<i>Weighted Score:</i> 1.2			<i>Weighted Score:</i> 0.15			<i>Weighted Score:</i> 0.15			<i>Weighted Score:</i> 0			<i>Weighted Score:</i> 0.21			<i>Weighted Score:</i> 0.15		
Environmental																				
Adverse Noise and Vibration Impact		15%	Moderate	7	1.05	Low	9	1.35	Low	9	1.35	Moderate	6	0.9	Moderate	6	0.9	Low	10	1.5
Adverse Endangered Species Impact		10%	None	10	1	High	0	0	High	0	0	High	3	0.3	High	3	0.3	High	3	0.3
Adverse Cultural Resources Impact		25%	Low	9	2.25	Low	9	2.25	Low	9	2.25	Low	9	2.25	Low	9	2.25	Low	9	2.25
Adverse Historic Preservation Impact		10%	Moderate	5	0.5	High	1	0.1	High	1	0.1	High	2	0.2	High	2	0.2	High	3	0.3
Possible Hazardous Materials		5%	Low	9	0.45	Moderate	7	0.35	Moderate	7	0.35	Moderate	4	0.2	Moderate	4	0.2	Low	8	0.4
Adverse Floodplain Impacts		5%	Presidential Permit	5	0.25	Presidential Permit	2	0.1	Presidential Permit	2	0.1	Presidential Permit	1	0.05	Presidential Permit	1	0.05	Presidential Permit	3	0.15
Adverse Archeological Impacts		10%	Moderate	5	0.5	High	1	0.1	High	1	0.1		2	0.2		2	0.2		3	0.3
NEPA Requirements		5%	EA	5	0.25	EIS	1	0.05	EIS	1	0.05	EIS	3	0.15	EIS	3	0.15	EIS	2	0.1
Environmental Compliance Schedule		5%	1 year	5	0.25	2.5 years	1	0.05	2.5 years	1	0.05	2.5 years	3	0.15	2.5 years	3	0.15	2.5 years	2	0.1
Environmental Mitigation Schedule		10%	9 months	5	0.5	1.5 years	1	0.1	1.5 years	1	0.1	1.5 years	3	0.3	1.5 years	3	0.3	1.5 years	2	0.2
Category Total	15%	100%	<i>Weighted Score:</i> 1.05			<i>Weighted Score:</i> 0.668			<i>Weighted Score:</i> 0.668			<i>Weighted Score:</i> 0.705			<i>Weighted Score:</i> 0.705			<i>Weighted Score:</i> 0.84		
Order of Magnitude Project Costs																				
Total Project Costs		50%	\$ -	4	2	\$ 20,000,000	2	1	\$ 20,000,000	2	1	\$ 20,000,000	0	0	\$ 20,000,000	6	3	\$ -	5	2.5
Right-of-Way		25%	\$ 270,000	8	2	\$ 30,000,000	0	0	\$ 30,000,000	0	0	\$ 30,270,000	5	1.25	\$ 30,000,000	5	1.25	\$ -	7	1.75
Environmental		25%	\$ 690,000	8	2	\$ 12,000,000	0	0	\$ 12,000,000	0	0	\$ 12,690,000	2	0.5	\$ 12,000,000	2	0.5	\$ -	2	0.5
Category Total	30%	100%	<i>Weighted Score:</i> 1.8			<i>Weighted Score:</i> 0.3			<i>Weighted Score:</i> 0.3			<i>Weighted Score:</i> 0.525			<i>Weighted Score:</i> 1.425			<i>Weighted Score:</i> 1.425		
Summary Comparison	100%		<i>Cumulative Score</i> 6.811			<i>Cumulative Score</i> 3.204			<i>Cumulative Score</i> 3.064			<i>Cumulative Score</i> 3.8			<i>Cumulative Score</i> 4.447			<i>Cumulative Score</i> 4.236		

Notes:
 1. Dollar values are based in 2005.
 2. Grade crossing are determined by how many grade crossings would no longer be used by thru trains, have been grade separated or closed, plus the addition of any new at-grade crossings on the proposed corridor.

CORRIDOR EVALUATION COMPARISON MATRIX																				
May 6, 2005																				
Evaluation Criteria	Category Weighting	Individual Weighting	South Rail Bypass West Alone			UPRR Spur			UPRR Improved			Tex-Mex			UPRR Existing			Tex-Mex Existing		
			Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score	Value	Rank (10 best, 0 lowest)	Score
Railroad Infrastructure																				
Project Length (miles)		7%	0.0	6	0.4	1.6	8	0.6	0	10	0.7	0	10	0.7	0	10	0.7	0	10	0.7
Number of Grade Crossings Reduced (public) ²		20%	-37	6	1.2	-36	6	1.2	37	2	0.4	37	2	0.4	51	0	0.0	55	0	0.0
Minutes crossing project (assume 40mph on New)		15%	0.0	6	0.9	2.4	8	1.2	0.0	10	1.5	0.0	10	1.5	0	10	1.5	0	10	1.5
UP Operating Length		10%	16.3	6	0.6	1.6	8	0.8	0	10	1.0	0	10	1.0	0	10	1.0	0	10	1.0
Tex-Mex Operating Length		5%	11.6	6	0.3	5.6	8	0.4	0	10	0.5	0	10	0.5	0	10	0.5	0	10	0.5
Trackage Rights Required		3%	Yes	0	0.0	Yes	0	0.0	No	10	0.3	No	10	0.3	No	10	0.3	No	10	0.3
Number of Structures		3%			0.0			0.0			0.0			0.0			0.0			0.0
Train Operating Speed within City Limits		5%	Low	2	0.1	Low	3	0.2	None	0	0.0	None	0	0.0	None	0	0.0	None	0	0.0
Business Opportunities		7%	Low	0	0.0	Low	0	0.0	Low	0	0.0	Low	0	0.0	Low	0	0.0	Low	0	0.0
Business Challenges		15%	Moderate	5	0.8	Low	10	1.5	High	0	0.0	High	0	0.0	Low	10	1.5	Low	10	1.5
Future Grade Separations		10%	\$69 million	5	0.5	\$0	10	1.0	\$20 million	8	0.8	\$35 million	7	0.7	\$20 mil	8	0.8	\$35 Mil	7	0.7
Category Total	15%	100%	<i>Weighted Score: 0.7155</i>			<i>Weighted Score: 1.022</i>			<i>Weighted Score: 0.78</i>			<i>Weighted Score: 0.765</i>			<i>Weighted Score: 0.945</i>			<i>Weighted Score: 0.93</i>		
Roadways																				
Average Delay Costs		40%	High	3	1.2	High	8	3.2	High	3	1.2	High	3	1.2	High	1	0.4	High	2	0.8
Adverse Emergency Routing Impact		10%	Moderate	5	0.5	Moderate	6	0.6	Moderate	5	0.5	Moderate	5	0.5	Moderate	5	0.5	Moderate	5	0.5
Adverse Local Street Impacts		20%	Moderate	5	1	Moderate	6	1.2	Moderate	5	1	Moderate	5	1	Moderate	5	1	Moderate	5	1
Adverse State Highway Impacts		20%	Low	3	0.6	None	10	2	None	10	2	None	10	2	None	10	2	None	10	2
Adverse Interstate Highway Impacts		10%	None	10	1	None	10	1	None	10	1	None	10	1	None	10	1	None	10	1
Category Total	25%	100%	<i>Weighted Score: 1.075</i>			<i>Weighted Score: 2</i>			<i>Weighted Score: 1.425</i>			<i>Weighted Score: 1.425</i>			<i>Weighted Score: 1.225</i>			<i>Weighted Score: 1.325</i>		
International Considerations																				
Likelihood of Mexico Approval		80%	Low	0	0	Low	0	0	N/A	10	8	N/A	10	8	N/A	10	8	N/A	10	8
Required Construction		20%	Moderate	5	1	Low	7	1.4	None	10	2	None	10	2	None	10	2	None	10	2
Category Total	15%	100%	<i>Weighted Score: 0.15</i>			<i>Weighted Score: 0.21</i>			<i>Weighted Score: 1.5</i>			<i>Weighted Score: 1.5</i>			<i>Weighted Score: 1.5</i>			<i>Weighted Score: 1.5</i>		
Environmental																				
Adverse Noise and Vibration Impact		15%	Low	10	1.5	Moderate	6	0.9	High	0	0	High	2	0.3	High	0	0	High	0	0
Adverse Endangered Species Impact		10%	High	3	0.3	None	10	1	None	10	1	None	10	1	None	10	1	Low	2	0.2
Adverse Cultural Resources Impact		25%	Low	9	2.25	Low	9	2.25	Low	9	2.25	Low	9	2.25	None	10	2.5	None	10	2.5
Adverse Historic Preservation Impact		10%	High	3	0.3	Moderate	4	0.4	None	10	1	None	10	1	None	10	1	None	10	1
Possible Hazardous Materials		5%	Low	8	0.4	High	3	0.15	High	1	0.05	Certain	0	0	None	10	0.5	None	10	0.5
Adverse Floodplain Impacts		5%	Presidential Permit	3	0.15	Presidential Permit	4	0.2	None	10	0.5	Presidential Permit	6	0.3	None	10	0.5	None	10	0.5
Adverse Archeological Impacts		10%		3	0.3		4	0.4		10	1		10	1		10	1		10	1
NEPA Requirements		5%	EIS	2	0.1	EA	5	0.25	EA	5	0.25	EA	5	0.25	None	10	0.5	None	10	0.5
Environmental Compliance Schedule		5%	2.5 years	2	0.1	1 year	5	0.25	1 year	5	0.25	1 year	5	0.25	N/A	10	0.5	N/A	10	0.5
Environmental Mitigation Schedule		10%	1.5 years	2	0.2	1 year	4	0.4	6 months	6	0.6	6 months	6	0.6	N/A	10	1	N/A	10	1
Category Total	15%	100%	<i>Weighted Score: 0.84</i>			<i>Weighted Score: 0.93</i>			<i>Weighted Score: 1.035</i>			<i>Weighted Score: 1.043</i>			<i>Weighted Score: 1.275</i>			<i>Weighted Score: 1.155</i>		
Order of Magnitude Project Costs																				
Total Project Costs		50%	\$ -	5	2.5	\$ -	8	4	\$ -	7	3.5	\$ -	6	3	\$ -	10	5	\$ -	10	5
Right-of-Way		25%	\$ -	7	1.75	\$ -	8	2	\$ -	4	1	\$ -	2	0.5	\$ -	10	2.5	\$ -	10	2.5
Environmental		25%	\$ -	2	0.5	\$ -	8	2	\$ -	9	2.25	\$ -	7	1.75	\$ -	10	2.5	\$ -	10	2.5
Category Total	30%	100%	<i>Weighted Score: 1.425</i>			<i>Weighted Score: 2.4</i>			<i>Weighted Score: 2.025</i>			<i>Weighted Score: 1.575</i>			<i>Weighted Score: 3</i>			<i>Weighted Score: 3</i>		
Summary Comparison	100%		<i>Cumulative Score 4.2055</i>			<i>Cumulative Score 6.562</i>			<i>Cumulative Score 6.765</i>			<i>Cumulative Score 6.308</i>			<i>Cumulative Score 7.945</i>			<i>Cumulative Score 7.91</i>		

Notes:
 1. Dollar values are based in 2004.
 2. Grade crossing are determined by how many grade crossings would no longer be used by thru trains, have been grade separated or closed, plus the addition of any new at-grade crossings on the proposed corridor.

Study Conclusion

This study has reviewed several different alignment options and has attempted to compile the results using a weighted comparison spreadsheet to aid in developing the apparent preferred alternative.

The Corridor Evaluation Comparison Matrix ranked the Existing UPRR and Existing TexMex lines the highest at 7.945 and 7.91 respectively out of a possible score of 10.

This study thus concludes that utilizing the existing UPRR and TexMex lines is a preferred solution taking into account this studies data and criteria.

References

Comprehensive Mobility Plan – Laredo Urban Transportation Study, September, 2001 – Wilbur Smith Associates

Railroad Corridor Analysis Port to Port Multimodal Study Laredo to Corpus Christi, Texas, July, 2003 - Hanson-Wilson, Inc.

FIDENOR – Feasibility Study for Proposed Rail Crossing at Colombia, Nuevo Leon, May 1999 – UMA

Long Range Thoroughfare Plan – City of Laredo,

Attachments

Summary of Cost Estimates

DRAFT**Camino Colombia Alignment**

Item No.	Description	Unit	Quantity	Unit Cost	Cost
1	Construct New Track	TF	118000	\$ 125.00	\$ 14,750,000
2	Construct New Siding	TF	10000	\$ 125.00	\$ 1,250,000
3	Customs Yard	TF	24000	\$ 100.00	\$ 2,400,000
4	Construct Turnouts	EA	13	\$ 150,000.00	\$ 1,950,000
5	Grading New Trackbed	CY	456000	\$ 5.25	\$ 2,390,000
6	Place Subballast (6" Asphalt)	SY	205200	\$ 20.00	\$ 4,100,000
7	Misc. Drainage Structures	MI	22.3	\$ 50,000.00	\$ 1,120,000
8	RR Bridges <50' Long	EA	10	\$ 150,000.00	\$ 1,500,000
9	RR Bridges - 100' Long	EA	3	\$ 400,000.00	\$ 1,200,000
10	RR Bridges - 250' Long	EA	1	\$ 1,000,000.00	\$ 1,000,000
11	RR Bridges - 600' Long	EA	1	\$ 2,400,000.00	\$ 2,400,000
12	Grade Separations (6 Lane)	EA	1	\$ 15,000,000.00	\$ 15,000,000
13	Grade Separations (4 Lane)	EA	1	\$ 8,000,000.00	\$ 8,000,000
14	Grade Separations (2 Lane)	EA	2	\$ 4,000,000.00	\$ 8,000,000
15	Road Crossings	EA	13	\$ 200,000.00	\$ 2,600,000
16	Future Grade Separations				
	Minor Arterial	EA	1	\$ 10,000,000.00	\$ 10,000,000
17	Utilities	LS	1	\$ 50,000.00	\$ 50,000
18	Signalization	MI	22.3	\$ 1,500,000.00	\$ 33,520,000
19	Right of Way	AC	50	\$ 2,000.00	\$ 100,000
	Environmental Costs (Compliance and Mitigation)			0.35%	\$ 390,000
	Engr&CM			12%	\$ 8,120,000
	Subtotal				\$ 119,840,000
	Contingency			25%	\$ 29,960,000

TOTAL ESTIMATE	\$ 149,800,000
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Notes:

1. Right-of-way is only required for the Customs Yard. Corridor R/W is assumed available from TXDOT at no costs.
2. Grading is approximate and assumed to be an average of 3 cubic yards per track foot.
3. It is assumed that Customs operations can be managed from the existing Customs building.
4. Rounding has been applied to all cost values.
5. Roadway crossings assumed to require full warning protection.

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North Rail Bypass Alignment

Item No.	Description	Unit	Quantity	Unit Cost	Cost
1	Construct New Track	TF	77000	\$ 125.00	\$ 9,630,000
2	Construct New Siding	TF	10000	\$ 125.00	\$ 1,250,000
3	Customs Yard	TF		\$ 100.00	\$ -
4	Construct Turnouts	EA	6	\$ 150,000.00	\$ 900,000
5	Grading New Trackbed	CY	435000	\$ 5.25	\$ 2,280,000
6	Place Subballast (6" Asphalt)	SY	117450	\$ 20.00	\$ 2,350,000
7	Misc. Drainage Structures	MI	14.6	\$ 50,000.00	\$ 730,000
8	RR Bridges <50' Long	EA	6	\$ 150,000.00	\$ 900,000
9	RR Bridges - 200' Long	EA	1	\$ 400,000.00	\$ 400,000
10	RR Bridges - 400' Long	EA	1	\$ 1,000,000.00	\$ 1,000,000
11	RR Bridges - 600' Long	EA		\$ 2,400,000.00	\$ -
12	Grade Separations (6 Lane)	EA		\$ 15,000,000.00	\$ -
13	Grade Separations (4 Lane)	EA		\$ 8,000,000.00	\$ -
14	Grade Separations (2 Lane)	EA	1	\$ 4,000,000.00	\$ 4,000,000
15	Road Crossings (X-Bucks only)	EA	48	\$ 5,000.00	\$ 240,000
16	Future Grade Separations				
	Major Arterial	EA	7	\$ 10,000,000.00	\$ 70,000,000
	Major Collector	EA	2	\$ 6,000,000.00	\$ 12,000,000
	Minor Arterial	EA	2	\$ 10,000,000.00	\$ 20,000,000
17	Utilities	LS	1	\$ 1,200,000.00	\$ 1,200,000
18	Signalization	MI	14.6	\$ 1,500,000.00	\$ 21,880,000
19	Right of Way	AC	354	\$ 10,300.00	\$ 3,640,000
	Environmental Costs (Compliance and Mitigation)			4%	\$ 6,100,000
	Engr&CM			12%	\$ 2,840,000
	Subtotal				\$ 161,340,000
	Contingency			25%	\$ 40,340,000
				TOTAL ESTIMATE	\$ 201,680,000

Notes:

1. Grading is approximate and assumed to be an average of 5 cubic yards per track foot.
2. Rounding has been applied to all cost values.

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UPRR Spur Alignment

Item No.	Description	Unit	Quantity	Unit Cost	Cost
1	Construct New Track	TF	8500	\$ 125.00	\$ 1,060,000
2	Customs Facility	LS	1	\$ 5,000,000.00	\$ 5,000,000
3	Customs Yard	TF	17000	\$ 100.00	\$ 1,700,000
4	Construct Turnouts	EA	13	\$ 150,000.00	\$ 1,950,000
5	Grading New Trackbed	CY	51002	\$ 5.25	\$ 270,000
6	Place Subballast (6" Asphalt)	SY	34426.35	\$ 20.00	\$ 690,000
7	Misc. Drainage Structures	MI	1.6	\$ 50,000.00	\$ 80,000
8	RR Bridges <50' Long	EA		\$ 150,000.00	\$ -
9	RR Bridges - 150' Long	EA	6	\$ 400,000.00	\$ 2,400,000
10	RR Bridges - 400' Long	EA		\$ 1,000,000.00	\$ -
11	RR Bridges - 600' Long	EA		\$ 2,400,000.00	\$ -
12	Grade Separations (6 Lane)	EA		\$ 15,000,000.00	\$ -
13	Grade Separations (4 Lane)	EA		\$ 8,000,000.00	\$ -
14	Grade Separations (2 Lane)	EA		\$ 4,000,000.00	\$ -
15	Road Crossings	EA	1	\$ 200,000.00	\$ 200,000
16	Utilities	LS	1	\$ 130,000.00	\$ 130,000
17	Signalization	MI	1.6	\$ 1,500,000.00	\$ 2,410,000
18	Right of Way	AC	39	\$ 4,000.00	\$ 160,000

Environmental Costs (Compliance and Mitigation)	1.35%	\$	220,000
Engr&CM	12%	\$	1,600,000
Subtotal		\$	17,870,000
Contingency	25%	\$	4,470,000

TOTAL ESTIMATE	\$	22,340,000
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Notes:

1. Grading is approximate and assumed to be an average of 2 cubic yards per track foot.
2. Rounding has been applied to all cost values.
3. Roadway crossings assumed to require full warning protection.

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South Rail Bypass Alignment "East"

Item No.	Description	Unit	Quantity	Unit Cost	Cost
1	Construct New Track	TF	61500	\$ 125.00	\$ 7,690,000
2	Customs Facility	LS	1	\$ 5,000,000.00	\$ 5,000,000
3	Customs Yard	TF	17000	\$ 100.00	\$ 1,700,000
4	Construct Turnouts	EA	13	\$ 150,000.00	\$ 1,950,000
5	Grading New Trackbed	CY	157002	\$ 5.25	\$ 820,000
6	Place Subballast (6" Asphalt)	SY	105976.35	\$ 20.00	\$ 2,120,000
7	Misc. Drainage Structures	MI	11.6	\$ 50,000.00	\$ 580,000
8	RR Bridges <50' Long	EA	2	\$ 150,000.00	\$ 300,000
9	RR Bridges - 200' Long	EA	1	\$ 400,000.00	\$ 400,000
10	RR Bridges - 400' Long	EA		\$ 1,000,000.00	\$ -
11	RR Bridges - 600' Long	EA		\$ 2,400,000.00	\$ -
12	Grade Separations (6 Lane)	EA	2	\$ 15,000,000.00	\$ 30,000,000
13	Grade Separations (4 Lane)	EA		\$ 8,000,000.00	\$ -
14	Grade Separations (2 Lane)	EA	1	\$ 4,000,000.00	\$ 4,000,000
15	Road Crossings (X-Bucks only)	EA		\$ 5,000.00	\$ -
16	Future Grade Separations				
	Expressway	EA	1	\$ 15,000,000.00	\$ 15,000,000
	Major Arterial	EA	1	\$ 11,000,000.00	\$ 11,000,000
17	Utilities	LS	1	\$ 944,000.00	\$ 940,000
18	Signalization	MI	11.6	\$ 1,500,000.00	\$ 17,470,000
19	Right of Way	AC	130	\$ 20,625.00	\$ 2,680,000
Environmental Costs (Compliance and Mitigation)				2.90%	\$ 2,950,000
Engr&CM				12%	\$ 6,550,000
Subtotal					\$ 111,150,000
Contingency				25%	\$ 27,790,000
TOTAL ESTIMATE					\$ 138,940,000

Notes:

1. Grading is approximate and assumed to be an average of 2 cubic yards per track foot.
2. Rounding has been applied to all cost values.

DRAFT

South Rail Bypass Alignment "West"

Item No.	Description	Unit	Quantity	Unit Cost	Cost
1	Construct New Track	TF	60700	\$ 125.00	\$ 7,590,000
2	Customs Facility	LS	1	\$ 5,000,000.00	\$ 5,000,000
3	Customs Yard	TF	17000	\$ 100.00	\$ 1,700,000
4	Construct Turnouts	EA	11	\$ 150,000.00	\$ 1,650,000
5	Grading New Trackbed	CY	155402	\$ 5.25	\$ 820,000
6	Place Subballast (6" Asphalt)	SY	104896.35	\$ 20.00	\$ 2,100,000
7	Misc. Drainage Structures	MI	11.5	\$ 50,000.00	\$ 570,000
8	RR Bridges <50' Long	EA	1	\$ 150,000.00	\$ 150,000
9	RR Bridges - 200' Long	EA	1	\$ 400,000.00	\$ 400,000
10	RR Bridges - 400' Long	EA		\$ 1,000,000.00	\$ -
11	RR Bridges - 600' Long	EA		\$ 2,400,000.00	\$ -
12	Grade Separations (6 Lane)	EA	2	\$ 15,000,000.00	\$ 30,000,000
13	Grade Separations (4 Lane)	EA		\$ 8,000,000.00	\$ -
14	Grade Separations (2 Lane)	EA	1	\$ 4,000,000.00	\$ 4,000,000
15	Road Crossings (X-Bucks only)	EA		\$ 5,000.00	\$ -
16	Future Grade Separations				
	Major Arterial	EA	3	\$ 11,000,000.00	\$ 33,000,000
	Major Collector	EA	1	\$ 6,000,000.00	\$ 6,000,000
	Minor Arterial	EA	2	\$ 10,000,000.00	\$ 20,000,000
	Modified Major Arterial	EA	1	\$ 10,000,000.00	\$ 10,000,000
17	Utilities	LS	1	\$ 944,000.00	\$ 940,000
18	Signalization	MI	11.5	\$ 1,500,000.00	\$ 17,240,000
19	Right of Way	AC	128	\$ 20,625.00	\$ 2,640,000
	Environmental Costs (Compliance and Mitigation)			2.90%	\$ 4,170,000
	Engr&CM			12%	\$ 6,480,000
	Subtotal				\$ 154,450,000
	Contingency			25%	\$ 38,610,000
TOTAL ESTIMATE				\$	193,060,000

Notes:

1. Grading is approximate and assumed to be an average of 5 cubic yards per track foot.
2. Rounding has been applied to all cost values.

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Crossing Upgrades/Closures/Separations Along UPRR

Item No.	Description	Unit	Quantity	Unit Cost	Cost
1	Up-grade Crossing Protection	EA	8	\$ 200,000.00	\$ 1,600,000
2	Upgrade signage to MUTCD Standards	EA	1	\$ 5,000.00	\$ 5,000
3	Upgrade Crossing Surface	EA	1	\$ 16,000.00	\$ 16,000
4	Close Grade Crossing	EA	10	\$ 20,000.00	\$ 200,000
5	Grade Separations				\$ -
	Simple	EA		\$ 3,000,000.00	\$ -
	Moderate	EA	4	\$ 6,000,000.00	\$ 24,000,000
	Complex	EA	1	\$ 12,000,000.00	\$ 12,000,000
6	Add Crashwalls	LS		\$ 32,000.00	\$ -
7	Right-of-way	LS	1	\$ 4,700,000.00	\$ 4,700,000
8	Future Grade Separations				\$ -
	Major Arterials	EA	2	\$ 10,000,000.00	\$ 20,000,000
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -

Environmental Costs (Compliance and Mitigation)	0.38%	\$	240,000
Engr&CM	8%	\$	5,000,000
Subtotal		\$	67,760,000
Contingency	25%	\$	16,940,000

TOTAL ESTIMATE	\$	84,700,000
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Notes:

1. Right-of-way costs can vary widely on grade separation projects. For purposes of this estimate, there is a budget of \$200,000 for simple grade separations, \$800,000 for moderate grade separations and \$1.5 million for complex grade separations.

Field Reconnaissance Study

Alternative Railroad Location Study Field Reconnaissance - Existing Grade Crossings August 25, 2004			
Line	Location	Current Condition	Proposed Condition
Tex-Mex	Loop 20 near Tex-Mex Access	Grade Separated	No changes - add Crash walls for pier protection
Tex-Mex	OWK Street East of Aguila Azteca	At-Grade - Cross-bucks	Upgrade signage to MUTCD Standards
Tex-Mex	OWK Street East of Tex-Mex	At-Grade - Cross-bucks	Upgrade signage to MUTCD Standards
Tex-Mex	Arkansas Street south of Guadalupe	At - Grade with flashers	Partially Funded for Grade Separation
Tex-Mex	SH 359 at Guadalupe/Chihuahua Split	Grade Separated	No changes - may need crash walls (not verified)
Tex-Mex	Market at Jarvis	Jarvis is closed now and Market has signage	Possible Grade Separation for Market Street (Moderate)
Tex-Mex	Bartlett South of Market	No Crossing - Streets closed	No change
Tex-Mex	Malinche at Cortez	flashers	No change
Tex-Mex	Buena Vista South of Guatemozin	At-Grade has flashers & gates	Minor upgrade
Tex-Mex	Meadow at Aldama	Grade Separated - 1928 Structure w/minimal SW	Possible Crash Wall improvements (not verified)
Tex-Mex	Seymour at Aldama	Close	No-Change
Tex-Mex	Loring at Aldama	At-grade	Close
Tex-Mex	Stone at Aldama	At-grade	Upgrade to flashers and Gates
Tex-Mex	Aldama at Hendricks	At-Grade - Cross-bucks	Close
Tex-Mex	Logan at Willow	Industrial track crossing - Cross-bucks	Upgrade signage to MUTCD Standards
Tex-Mex	Willow east of Logan	Industrial track crossing - Cross-bucks	Upgrade signage to MUTCD Standards
Tex-Mex	Unnamed Road SW of Willow/Logan	Industrial track crossing - Cross-bucks	Upgrade signage to MUTCD Standards
Tex-Mex	Logan North of Aldama	At-Grade - Cross-bucks	Upgrade signage to MUTCD Standards
Tex-Mex	Market east of Springfield	At-grade crossings with flashers/gates	Grade Separate (simple)
Tex-Mex	Market at Springfield	At-grade crossings with flashers/gates	Grade Separate (simple)
Tex-Mex	Chihuahua west of Springfield	At-grade with flashers/gates	Grade Separate (moderate)
Tex-Mex	Guadalupe West of Springfield	At-grade with flashers/gates	Grade Separate (moderate)
Tex-Mex	Marcella north of Laredo	At-grade with cross-bucks	Grade Separate (simple)
Tex-Mex	Washington east of Marcella	At-grade with flashers/gates	Grade Separate (moderate)
Tex-Mex	Sanders north of Washington	At-grade with flashers/gates	Close
Tex-Mex	San Eugenio at Garfield	At-grade with flashers/gates	Close
Tex-Mex	Moctezuma at San Jorge	At-grade with flashers/gates	Close
Tex-Mex	Moctezuma at San Francisco	At-grade with flashers/gates	Close
Tex-Mex	Moctezuma at San Eduardo	At - Grade with flashers	No Change required
Tex-Mex	Moctezuma at I-35 outer road east	At-grade with flashers/gates	No change
Tex-Mex	Moctezuma at I-35 outer road west	At-grade with flashers/gates	No change
Tex-Mex	Moctezuma at San Bernardo	At-grade with flashers/gates	Grade separate (complex)
Tex-Mex	Moctezuma at San Agustin	At-grade with flashers/gates	No change
Tex-Mex	Moctezuma at Flores	At-grade with flashers/gates	Close
Tex-Mex	Moctezuma at Convent	At-grade with flashers/gates	No change
Tex-Mex	Moctezuma at Juarez	At-grade with flashers/gates	No change
Tex-Mex	Moctezuma at Santa Maria	At-grade with flashers/gates	Grade Separate (simple)
Tex-Mex	Moctezuma at Davis	At-grade with flashers/gates	No change
Tex-Mex	Moctezuma at Main	At-grade with flashers/gates	No change
Tex-Mex	Moctezuma at Santa Rita	At-grade with flashers/gates	Close
Tex-Mex	Moctezuma at Vidaurri	At-grade with flashers/gates	Close
Tex-Mex	Santa Isabel at Washington	Cross-bucks	Upgrade with flashers and Gates
Tex-Mex	Washington at Santa Isabel	Grade Separated	No change
UP	Zaragosa	At-Grade - Cross-bucks	Upgrade to flashers and Gates
UP	Scott	At-grade with flashers/gates	No change
UP	Santa Isabel north of Coke	At-grade with flashers/gates	No change
UP	Sanchez	At-grade with flashers/gates	No change
UP	Garza at Santa Rita	At-grade with flashers	Close
UP	Sanchez at Santa Rita	At-grade with flashers	Upgrade to flashers and Gates
UP	Park at Santa Rita	At-grade with cross-bucks	Upgrade to flashers and Gates
UP	Bruni at Santa Rita	At-grade with cross-bucks	Close
UP	Gonzalez at Santa Rita	At-grade with flashers	Close
UP	Gonzalez west of Santa Isabel	Closed	No Change
UP	Shea at Santa Rita	At-grade with gates and flashers	No Change
UP	Jefferson at Santa Rita	At-grade with gates and flashers	Grade Separate (moderate)
UP	Jefferson at Eagle Pass	At-grade with gates and flashers	Grade Separate (moderate)
UP	Frankfort at Santa Rita	At-grade with flashers	Close
UP	Blair at Santa Rita	At-grade with gates and flashers	Close
UP	Madison at Santa Rita	At-grade with gates and flashers	Close
UP	Lafayette at Santa Rita	Grade Separated	No change
UP	Lafayette at Vidaurri	Grade Separated	No change
UP	Baltimore at Santa Rita	At-grade with gates and flashers	No Change
UP	Baltimore west of Vidaurri	At-grade with gates and flashers	No Change
UP	Pierce at Santa Rita	At-grade with gates and flashers	Close
UP	Boston at Santa Rita	At-grade with gates and flashers	No Change
UP	Philidelphia at Santa Rita	At-grade with gates and flashers	Close
UP	Ugarte at Santa Rita	At-grade with signal	Upgrade to flashers and Gates
UP	Pace at Santa Cleotilde	At-grade with signal	Upgrade to flashers and Gates
UP	Chicago at Santa Cleotilde	At-grade with signal	Grade Separate (moderate)
UP	Chicago at Santa Rita	At-grade with flashers	Grade Separate (moderate)
UP	Markley west of Santa Maria	At-grade with gates and flashers	Close
UP	Markley east of Santa Rita	At-grade with gates and flashers	Close
UP	Modern north of Markley	Abandoned	No Change
UP	Calton at Santa Maria	At-grade with flashers	Funded for Grade Separation
UP	Justo Penn east of Santa Maria	At-grade with flashers	Upgrade to flashers and Gates
UP	Island at Santa Maria	At-grade with flashers	Upgrade to flashers and Gates
UP	Island east of Carrillo	At-grade with flashers	Upgrade to flashers and Gates
UP	Mann Road West of Santa Maria	At-grade with cross-bucks	Upgrade to flashers, gates and pre-emptive warning.
UP	Industrial east of CPL	At-grade with gates and flashers	Upgrade crossing surface
UP	FM 1472 at Old Santa Maria	At-grade with gates and flashers	Funded for Grade Separation
UP	Tejas at Old Santa Maria	At-grade with gates and flashers	No change
UP	Las Cruces at Old Santa Maria	At-grade with gates and flashers	No Change
UP	San Lorenzo	At-grade with cross-bucks	Upgrade to flashers and Gates
UP	Connection Road between San Gabriel and San Lorenzo	At-Grade - Cross-bucks	Upgrade signage to MUTCD Standards
UP Crossings	37		Proposed Closures/Separations 14
Tex-Mex At-grade Crossings	37		Proposed Closures/Separations 18
Total Crossings	74		Total Remaining At-Grade Crossings 42

Long Range Thoroughfare Plan – City of Laredo

(Amended November 26, 2001)

