

BEFORE THE
SURFACE TRANSPORTATION BOARD

ENTERED
Office of Proceedings
May 31, 2016
Part of
Public Record

Finance Docket No. 36025

TEXAS CENTRAL RAILROAD AND INFRASTRUCTURE, INC. &
TEXAS CENTRAL RAILROAD, LLC-
AUTHORITY TO CONSTRUCT AND OPERATE-
PASSENGER LINE BETWEEN DALLAS, TX AND HOUSTON, TX

REPLY TO PETITION FOR EXEMPTION

Richard H. Streeter
rhstreeter@gmail.com
LAW OFFICE OF RICHARD H. STREETER
5255 Partridge Lane, N.W.
Washington, DC 20016
202-363-2011 (tel.)
202-363-2012 (fax)

Blake L. Beckham
blake@beckham-group.com
M. Patrick McShan
patrick@beckham-group.com
THE BECKHAM GROUP, P.C.
3400 Carlisle, Suite 550
Dallas, Texas 75204
214-965-9300 (tel.)
214-965-9301 (fax)

*Counsel for Texans Against High Speed
Rail, Inc.*

May 31, 2016

TABLE OF CONTENTS

STATEMENT REGARDING JURISDICTIONAL CHALLENGE.....	1
INTRODUCTION.....	1
ARGUMENT.....	4
I. TCR’s Petition Must Be Rejected for Failure to Comply with 49 § CFR 112.	4
II. The Board Should Deny TCR’s Petition and Require a Full Application.....	5
A. TCR is not eligible for an exemption.....	5
B. The Project is not of “limited scope.”	7
C. TCR’s claims and core projections must be tested.	9
D. TCR’s ridership projections are seriously flawed.....	9
III. TCR’s Petition Does Not Contain Sufficient Information for the Board to Make an Informed Decision.	13
A. Seeking an exemption on a project of this magnitude is inappropriate.	14
1. <i>TCR’s investors are a mystery.</i>	14
2. <i>TCR’s Petition is unsupported.</i>	15
B. The lack of information regarding the Project is staggering.	18
1. <i>TCR has not disclosed its business plan.</i>	20
2. <i>TCR has not disclosed any data supporting its construction costs.</i>	20
3. <i>TCR has not disclosed its operational and maintenance costs and data.</i>	21
4. <i>TCR has not disclosed its feasibility studies or any data supporting its ridership projections</i>	21
5. <i>TCR has not disclosed its fare estimates or any plans for parking.</i>	23

6.	<i>TCR has not disclosed any research or objective data supporting the Project’s alleged tax revenue, economic benefits, or creation of jobs.</i>	24
7.	<i>TCR’s stated reasons for concealing the Insight Report are concerning.</i>	25
8.	<i>TCR has not disclosed any plans for security.</i>	26
9.	<i>TCR refuses to provide its financial information.</i>	28
IV.	Based on Available Data, TCR’s Ill-Advised Project is Destined for Failure.	29
A.	TCR’s proposed rail line has none of the indicators of profitable high-speed rail lines.	29
B.	TCR is greatly overestimating its four million annual ridership projection.	33
1.	<i>TxDOT’s traffic counts demonstrate that TCR’s ridership projections are greatly exaggerated and unsustainable.</i>	33
2.	<i>TCR is ignoring competitive air traffic.</i>	37
3.	<i>TCR’s Project is not going to take cars off the road.</i>	38
4.	<i>Rail consultants are notorious for creating fallacious “demand exaggeration.”</i>	40
C.	Even if TCR could attract four million passengers annually, it will not be able to generate sufficient revenue to cover costs.	41
V.	A Dallas-to-Houston Rail Line Has Never Been Designated as a Feasible Corridor for High-speed Rail.	42
VI.	Significant Adverse Impacts Will Occur if the Exemption Were Granted.	43
A.	Thousands of Texas landowners will be stripped of the peace and enjoyment of their property, and their property will be destroyed and devalued.	43
B.	The Project will adversely impact counties and communities.	44
C.	Regardless of the final route chosen, construction and operation of the Project will adversely affect the environment in the affected region.	45
VII.	Fast-tracking the Petition Denies the Public the Opportunity to Meaningfully	

Comment and Participate, Despite No Real Urgency.47

CONCLUSION.....48

CERTIFICATE OF SERVICE.....49

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

Finance Docket No. 36025

**TEXAS CENTRAL RAILROAD AND INFRASTRUCTURE, INC. &
TEXAS CENTRAL RAILROAD, LLC-
AUTHORITY TO CONSTRUCT AND OPERATE-
PASSENGER LINE BETWEEN DALLAS, TX AND HOUSTON, TX**

REPLY TO PETITION FOR EXEMPTION

Comes now Texans Against High Speed Rail, Inc. (“TAHSR”) and files this Reply to the Petition for Exemption filed by Texas Central Railroad and Infrastructure, Inc. & Texas Central Railroad, LLC (collectively “TCR”).

STATEMENT REGARDING JURISDICTIONAL CHALLENGE

For the reasons set forth in TAHSR’s Reply to TCR’s Petition for Clarification, the Board lacks jurisdiction over TCR’s proposed high-speed rail line between Dallas and Houston, Texas (the “Project”).¹ Rather than restate those arguments here, TAHSR reasserts and incorporates by reference its prior jurisdictional challenge.

INTRODUCTION

In its Petition for Exemption (“Petition”), TCR seeks to exempt the construction and operation of a proposed 240-mile high-speed passenger rail line from the prior approval requirements of 49 U.S.C. §10901. In support of this request, TCR blithely states that “[n]o legitimate policy objective would be served by subjecting [the Project] to a lengthy application and approval process”² Quite the opposite is true. As will be shown, in the course of its elaborate

¹ TAHSR’s Reply to Petition for Clarification at 2-8, filed May 19, 2016.

² Petition at 24-25.

public relations campaign to garner political and public support, TCR has disseminated a steady stream of disinformation related to its Project, while refusing to disclose basic, critical information regarding the Project's feasibility. By seeking an exemption under 49 U.S.C. §10502 with a Petition bereft of supporting evidence, TCR is steaming ahead on a parallel track of non-disclosure.

After subjecting the available, yet sparse, information to careful scrutiny, TAHSR has reached the conclusion that the Project is not financially viable and will require massive public subsidies from Texas and U.S. taxpayers to sustain operations. In this Reply, TAHSR will demonstrate to the Board that the Project will not create billions of alleged economic benefits; rather, it will be a financial albatross around the necks of the U.S. Treasury and Texas taxpayers, none of whom wish to be victimized by a repeat of the situation in California, where the original projected cost has ballooned from \$33 billion to upwards of \$80 billion.³

Due to the following factors, among others, TAHSR is relying on the Board to take a "hard look" at this Project before any decision is made:

- 1) The Project's sheer magnitude -- \$12 to \$18 billion to construct;
- 2) The unfathomable environmental impact of a 240-mile-long berm 20 feet high;
- 3) The substantial adverse impact on tens of thousands of Texas citizens and landowners and the communities in which they live;
- 4) The prohibition on grade crossings which threatens to freeze any future road expansion in the affected counties; and
- 5) The enormous cost and complexity of constructing and operating this "first of its kind" high-speed train in the United States.

³ Fund, John, *High-Speed Rail Is a Fast Train to Fiscal Ruin, in California and Elsewhere*, National Review, May 22, 2016, <http://www.nationalreview.com/article/435703/high-speed-rail-california-boondoggle>.

In addition, although TCR claims the Project will be “privately funded,”⁴ there are two crucial facts the Board must consider:

- 1) TCR is an unproven start-up that appears to be grossly undercapitalized; and
- 2) TCR has presented no evidence that it has the necessary funding to construct and operate its multi-billion-dollar Project.

In California, the high-speed rail project is backed by the financial resources of the State; in contrast, TCR has no State or Federal financial support. As such, the Board cannot just take TCR’s word that sufficient funding is in place, especially considering it has raised, in cash, less than 1% of its estimated construction costs. In fact, TCR’s tentative financing is driving its hurry-up approach. In essence, TCR’s financing pressures are an \$18 billion tail wagging a dog of a Project.

Furthermore, while TCR touts the technology it will employ, its management team has no significant experience in the railroad industry. As a result, TCR appears to have ignored all available objective data regarding potential ridership demand, which conclusively demonstrates that TCR’s projection of four million annual passengers is nothing more than an unsupported, pie-in-the-sky exaggeration of the highest order. TCR has also ignored other seemingly basic issues, such as security, the fact that no cars will be taken off city roads, and where passengers will park their vehicles when they board the rail line. These issues along with many others must be fully explored well before TCR is given the right to construct its Project. The Board cannot merely rely on the self-serving, wholly unsubstantiated statements contained in TCR’s Petition and the Verified Statement of Timothy B. Keith, its latest Chief Executive Officer.

⁴ TCR's definition of privately funded is quite “fuzzy.” See Eric Nicholson, *Texas Central Railway’s Fuzzy Definition of ‘Privately Financed,’* Dallas Observer, August 11, 2015, <http://www.dallasobserver.com/news/texas-central-railways-fuzzy-definition-of-privately-financed-7479867>.

It is beyond dispute that the Board does not have sufficient information from TCR's deficient Petition in order to make an informed decision. If the Board takes jurisdiction over this matter, TAHSR respectfully requests that the Board deny TCR's Petition, and require TCR to file a full application and disclose all relevant information and data related to its Project.

ARGUMENT

I. TCR's Petition Must Be Rejected for Failure to Comply with 49 § CFR 1121.3.

The Petition should be rejected outright because TCR failed to comply with the express requirements of 49 CFR §1121.3, which mandates:

- (a) A party filing a petition for exemption *shall* provide its case-in-chief, along with its supporting *evidence, workpapers, and related documents* at the time it files its petition.
- (b) A petition must comply with *environmental or historic reporting* and notice requirements of 49 CFR part 1105, if applicable.
- (c) A party seeking revocation of an exemption or a notice of exemption *shall provide all of its supporting information at the time it files its petition*. Information later obtained through discovery can be submitted in a supplemental petition pursuant to 49 CFR 1121.2. (emphasis added).

The only two documents TCR filed along with its Petition were a 1-page map showing route alternatives and a statement of CEO Tim Keith, for a total of 45 pages. TCR's failure to submit any supporting evidence, workpapers, or related documents should result in summary dismissal of its Petition.

In addition to ignoring §1121.3(a), TCR also failed to comply with §1121.3(b), which requires a petitioner to meet the environmental reporting requirements under 49 CFR §1105. TCR failed to include an Environmental Report along with its Petition, as required by §1105.7. As of the filing of this Reply, the Federal Railroad Administration ("FRA") has yet to complete the mandatory National Environmental Policy Act ("NEPA") evaluation of TCR's Project. In fact, the

FRA has not even set a firm date for the release of a Draft Environmental Impact Study (“Draft EIS”), much less taken public comment. TCR first told the public the Draft EIS would be finalized in June of 2015. TCR has made excuses for delay after delay, still with no Draft EIS in sight.

Moreover, although the FRA has released various preliminary documents, including a Scoping Report,⁵ a Corridor Alternative Analysis Technical Report,⁶ and an Alignment Alternative Analysis Report,⁷ no final decision has been reached regarding the actual route the Project will follow. In fact, TCR is still in the process of attempting to obtain entry onto private property “to conduct examination and surveying activities needed to determine the most advantageous route for its train.” There are at least nine pending state court lawsuits in five different counties on this very issue.⁸ These lawsuits have only just begun, and there is no indication when or how they will be adjudicated. However, there is every indication Texas landowners will continue fighting to keep TCR off their property, because TCR has not yet established eminent domain authority. With no final route chosen, and in the absence of the Draft EIS, TCR cannot meet the requirements of §1105.7. For this additional reason, TAHSR requests that the Board reject TCR’s Petition.

II. The Board Should Deny TCR’s Petition and Require a Full Application.

A. TCR is not eligible for an exemption.

Because TCR is not a “rail carrier,” the exemption provisions of 49 U.S.C. §10502(a) cannot be applied to TCR’s Project. 49 U.S.C. §10102(5) expressly defines a “rail carrier” as “a person providing common carrier railroad transportation for compensation, *but does not include*

⁵ Released April 2015.

⁶ Released August 10, 2015.

⁷ Released November 6, 2015.

⁸ TCR has sued multiple landowners in Harris, Dallas and Ellis Counties seeking injunctive relief to enter upon their private property. Landowners have sued TCR in Leon County and Madison County to keep TCR off their private property.

street, suburban, or interurban electric railways not operated as part of the general system of rail transportation.”⁹ (emphasis added).

The exclusion of interurban electric railways is fatal to TCR’s Petition, given that TCR has judicially admitted on multiple occasions that it is an interurban electric railway company.¹⁰ Since TAHSR replied to the eminent domain abuse embedded in TCR’s Petition for Clarification, TCR has filed at least seven additional *verified* petitions in Texas state court, alleging that its Project is “an *electric railway* as that term is used in Section 131.012 *et. seq.* of the Texas Transportation Code.”¹¹ (emphasis added). Section 131 deals solely with interurban electric railway companies, which are defined as “a corporation chartered under the laws of this state to conduct and operate an electric railway between two municipalities in this state.” TCR’s judicial admissions are corroborated by TCR’s filings with the Texas Secretary of State.¹²

⁹ The Board is further circumscribed by related statutes, such as the Railway Labor Act (“RLA”) and the Railroad Retirement Act (“RRRA”). The RRRA explicitly removes interurban electric railways from the definition of the term “carrier,” “unless such railway is operating as part of a general steam-railroad system of transportation...” 45 U.S.C. § 151. The RLA follows suit by defining the term “carrier” to include any railroad subject to the jurisdiction of the Board under part A of subtitle IV of title 49. *Id.* However, the RLA further provides that a carrier “shall not include ...any ...interurban...electric railway, unless such railway is operating as a part of a general diesel-railroad system of transportation ...”

¹⁰ Attached as Exhibit 1 is an example of TCR’s Verified Injunction Petition it has been filing against Texas landowners. TCR is using virtually the same pleading in every new lawsuit. TCR’s judicial admissions can be found at Pages 2-3.

¹¹ While on notice of its judicial admission (raised by TAHSR in its Reply to Petition for Clarification), TCR has continued to repeat this admission in subsequent verified petitions. Notably, TCR is taking a blitzkrieg approach, filing cases and seeking injunction hearings within three days of service of process, while swearing to Texas judges that the entire Project will be “suspended indefinitely” if a particular survey is not ordered immediately.

¹² See TAHSR Reply to Petition for Clarification, Exhibits 1 and 2 (“The purpose for which [TCR] is organized is to plan, build, maintain and operate an interurban electric railroad...”) and (“The business or activity that [TCR] proposes to pursue in this state is: to plan, build, maintain and operate an interurban electric railroad.”).

B. The Project is not of “limited scope.”

Even if TCR can convince the Board that the §10102(5) exclusion of interurban electric railways does not apply, the Board only has authority to exempt a transaction or service when it finds that “the transaction or service is of limited scope.”¹³ A cursory look at a map of the State of Texas demonstrates that TCR’s projected rail line will cut through a significant portion of east Texas in a roughly north/south direction. In essence, it will erect a 240-mile-long, twenty-foot-high, Great Wall *with no at-grade crossings*. This Great Wall will permanently separate many small cities and towns in east Texas from the rest of Texas, with innumerable consequences:

- 1) Environmental - Imagine the enormous carbon footprint of constructing the berm, rail, and crossings for existing highways;
- 2) Freezing the state and county road system forever in place. In public meetings, TCR has refused to commit to pay for any future state or county road crossings over the track, instead placing this monumental burden on the taxpayers;
- 3) Substantial adverse impact on thousands of Texas citizens and landowners, their businesses, and the communities in which they live;
- 4) Threatening much of the existing general transportation network of federal, state, county and local highways with road closures and traffic diversion; and
- 5) Farming and Ranching – How are farmers and ranchers going to move equipment and livestock? TCR has refused to guarantee that each landowner will have at least one pass-through per tract.¹⁴

Against this backdrop, and with no demonstrated need to rush to judgment, this Project is certainly not the type that should be the subject of a fast-track exemption proceeding. A “hard look” must be taken to ensure that TCR’s “closed system” barricade does not:

- 1) Freeze the state and county road systems forever; or

¹³ 49 U.S.C. §10502(a)(2)(A).

¹⁴ Even if TCR provided one pass-through, landowners would effectively be prohibited from subdividing their land in the future.

- 2) Critically impact billions of dollars of existing surface transportation infrastructure that has been developed to facilitate the free and efficient movement of traffic in both interstate and intrastate commerce.

Moreover, there are significant concerns as to whether the Project has any hope of carrying out the transportation policies of 49 U.S.C. §10101, such as “to foster sound economic conditions in transportation” and “to ensure the development and continuation of a sound rail transportation system with effective competition among rail carriers and with other modes to meet the needs of the public...” Rather, all available data suggests the Project will be a financial failure.

The Board cannot treat this matter as a minor, run-of-the-mill exemption proceeding. Consistent with the overall public convenience and necessity, the Board must serve the public by refusing to rubber-stamp TCR’s demand that the proceeding be fast-tracked just so TCR can meet its self-imposed deadline to begin construction in 2017.¹⁵ Proper adjudication of this complex Project will require a thorough analysis of factors and data that may not always be at issue under a plain vanilla Section 10502 exemption, including TCR’s business plan, ridership projections, estimated construction costs, and available funding. To date, TCR has actively resisted on both federal and state levels TAHSR’s efforts to obtain this crucial information on the basis that the information is “proprietary” and “commercially sensitive,” and that its disclosure would “highly prejudice” TCR. TCR’s claim that the information required by 49 U.S.C. §1121 is “proprietary and confidential” is pure legal obstructionism; indeed, TCR’s position is an impermissible collateral attack against the provisions of 49 U.S.C. §10901.¹⁶ That being said, TAHSR’s rigorous examination of all currently available information casts deep doubts on TCR’s core projections.

¹⁵ It must be noted that TCR has refused to disclose the source of this arbitrary starting date.

¹⁶ *Ozark Mountain Railroad – Construction Exemption*, Docket No. 32204, 1995 ICC Lexis 248 at *3 (served Sept. 25, 1995).

After discovery in the full application process, TAHSR will further expose additional flaws in TCR's overstated projections and understated cost estimates.

C. TCR's claims and core projections must be tested.

Given the acknowledged significance of this massive Project, and the amount of intense controversy that surrounds it, the Board must subject all of TCR's core projections to robust scrutiny, including its initial claim that the Project will be privately financed. As the Board is aware, the Dakota, Minnesota & Eastern Railroad ("DM&E") repeatedly claimed to politicians and to the public that it would not seek public funds to build its rail line into the Powder River Basin. However, when private funds failed to materialize, DM&E turned to the Department of Transportation's Credit Council seeking a loan of over \$6 billion to fund its project. After the Credit Council took a hard look at the matter, it came to the conclusion that taxpayers would be put at risk and denied the loan. That same conclusion must be reached here. As shown below, TCR has already contradicted itself regarding this claim. TCR tells the Board "private money only," while in truth it will seek federal subsidies, including loan guarantees. Landowners and other Texans that will be personally affected by the Project, and taxpayers, are entitled to a full and thorough examination of TCR's claims and projections before they are put at risk.

D. TCR's ridership projections are seriously flawed.

Here, far more is at stake than simply whether investors will find the Project to be financially viable. There is the fundamental issue regarding the truth or falsity of TCR's ridership projections. Are they achievable projections based on objective, verifiable data from the relevant marketplace, or are they complete fantasy? Based on the Texas Statewide Ridership Analysis

Report prepared by the Texas Department of Transportation in December, 2013 (the “TxDOT Report”),¹⁷ TCR’s ridership projections appear to be fantasy.

John T. Harding, PhD, former Chief Maglev¹⁸ Scientist for the FRA, U.S. Department of Transportation, analyzed hundreds of such reports during his prior service for the FRA. With respect to the Project at issue here, Dr. Harding has performed an analysis of TCR’s projections as compared with the unassailable facts contained in the unbiased TxDOT Report. Dr. Harding’s analysis of TCR’s ridership projections will be discussed in more detail, but for now, it is enough to simply state his conclusion: TCR’s ridership projections are greatly exaggerated, to the tune of almost six times Dr. Harding’s projections, which he based on objective, verifiable data.¹⁹

Then there is the issue of cost of capital, operations, and maintenance. Even if TCR somehow convinces investors to front the \$12 to \$18 billion required to acquire the right-of-way and to construct its “closed system,” how will TCR cover the interest owed to lenders and bondholders, and return on capital owed to its investors? And how will it cover its annual operating and maintenance costs? According to TCR, these costs will be covered through ticket sales. Accordingly, if TCR has overstated projected ridership demand, then ticket receipts will fail to cover costs, and Texas landowners will have lost their property to a failed venture. In addition, taxpayers in Texas and the United States who receive no benefits whatsoever from an underused rail line in east Texas will be forced—*without a vote and after the fact*—to subsidize TCR’s unprofitable operations. This is one of the many reasons Texans are adamantly opposed to this Project.

¹⁷ Exhibit 2 attached.

¹⁸ Maglev (derived from magnetic levitation) is a transport method that uses magnetic levitation to move trains with magnets and electricity without touching the ground.

¹⁹ Exhibit 3, Verified Statement of John T. Harding at ¶ 16.

The fear that Texas Central will never even come close to covering its costs is not mere speculation. Far from it. Based on Dr. Harding’s analysis, he concluded, “[t]here appears to be no reasonable likelihood that TCR could repay its investment, much less pay operating costs, with a realistic appraisal of ridership.”²⁰

These significant financial concerns, which will be discussed in detail, cannot be dismissed out of hand. TCR has been actively concealing any documents which might support its ridership projections or revenue estimates. The fact of the matter is worldwide there are only two high-speed rail passenger systems that are profitable, and one that breaks even. Two of these systems are in Japan and the other is in France. Most importantly, they are in cities where the population density and public transit usage are far greater than in Dallas and Houston. These and other source indicators strongly suggest that Dallas to Houston is not a feasible corridor for high-speed rail.

TCR seeks to gloss over these fundamental issues with unsupported hyperbole, gushing that its “first of its kind” Project will greatly benefit the Texas economy, and “transform how infrastructure projects of this kind are developed in the United States going forward.”²¹ But what if it turns out TCR is wrong and simply hasn’t done its homework, and this Project is just the latest miscalculation (or misrepresentation) regarding the need and cost of building a high-speed rail line? Texas landowners and all those potentially affected by this Project should not have to bear the risk of finding out the answer to that question, especially since the Board has the ability—right now—to force TCR to file a full application, disclose relevant information, justify the need for the Project, and demonstrate its feasibility based on objective, verifiable data.

²⁰ *Id.*

²¹ Verified Statement of Timothy Keith in Support of TCR’s Petition, at ¶ 13.

Even advocates of high-speed rail must acknowledge that miscalculations and yet another failed project will have a negative impact on the public's perception of high-speed rail. It is well-remembered that a previous proposal to create a 600-mile network connecting Dallas, Houston, Austin and San Antonio collapsed when the company failed to meet the first financial milestone imposed by the former Texas High-Speed Rail Authority, requiring it to show that it had secured \$171 million in letters of credit. Such milestones were installed to make sure that Texas taxpayers did not end up saddled with a half-built project.²² Any true proponents of high-speed rail should support prevention of unfeasible projects, in order to focus their energies on sure-fire winners.

Given this past history of failure, and because the present record is grossly inadequate, the Board must compel TCR to provide all the evidence necessary to carry its burden of justifying the need for the Project. In a full application, the Board must force TCR to back up these unfounded claims, among others:

- 1) That the Project will be constructed and operated exclusively with private financing;²³
- 2) That it will attract approximately four million riders by the year 2025 at a ticket price to support investor return, debt service, operations, and maintenance;²⁴
- 3) That by 2026 approximately 20% of Dallas-Houston travelers will choose Texas Central's high-speed passenger service;²⁵
- 4) That the Project could spur \$36 billion in economic benefits; and
- 5) That it could generate nearly \$2.5 billion in tax revenues to the state, counties, local municipalities, school districts and other taxing entities, between 2015 and 2040.²⁶

²² Aman Batheja, *Bullet Train Failed Once, but It's Back for Another Go*, The Texas Tribune, March 7, 2014, https://www.texastribune.org/2014/03/07/firm-planning-texas-bullet-train-avoiding-past-pit/#most_viewed.

²³ V.S. Keith at ¶ 10.

²⁴ Petition at 8.

²⁵ *Id.*

²⁶ *Id.* at 11.

Finally, the Board should note that while TCR claims in its Petition that the total construction cost is “estimated to be over \$10 billion,”²⁷ this figure has been in constant flux. In December 2013, TxDOT estimated the “Upfront Capital Cost” of the Project to be \$18.3 billion and the “Annual O&M Cost” to be \$209 million.²⁸ After these figures were released, TCR instructed TxDOT to assume certain modifications, including the surprising removal of the station stop in Brazos Valley,²⁹ reduction of the fare to 80% of average airfare, and an increase of the average travel speed to 160 mph.³⁰ After making these assumptions, the Upfront Capital Cost dropped to \$16.8 billion, while the Annual O&M Cost increased to \$266 million.³¹ TCR has, without justification, failed to disclose TxDOT’s unbiased construction estimates to the Board. With all due respect, a \$6.8 billion to \$8.3 billion discrepancy between TxDOT’s projections and TCR’s lowball estimate in its Petition requires close scrutiny, not an exemption from prior approval requirements. Certainly, TxDOT has decades of experience estimating massive infrastructure projects, while TCR has none. Moreover, *since the filing of its Petition*, TCR has upped its stated construction estimate, this time to \$12 billion. In short, it is abundantly clear that TCR’s \$10 billion estimate in its Petition is misleading and grossly inaccurate.

III. TCR’s Petition Does Not Contain Sufficient Information for the Board to Make an Informed Decision.

Although the exemption process is designed to minimize regulatory burdens, it is appropriate only when there is sufficient information to reach an informed decision.³² Furthermore,

²⁷ V.S. Keith at ¶ 4.

²⁸ Exhibit 2, TxDOT Report at 71.

²⁹ If TCR is instructing TxDOT to assume there will be no Brazos Valley stop in order to increase ridership projections, why is TCR telling the Board and the public there will be one?

³⁰ Exhibit 2, TxDOT Report at 73.

³¹ *Id.* at 74

³² *San Pedro Operating Company, LLC—Abandonment Exemption—In Cochise County, AZ*, STB Finance Docket No. AB-441 (Sub-No. 4X) (Sept. 15, 2005).

the Board has consistently found that when an entity does not submit any of its own financial data or operational considerations, the petition is insufficient.³³

A. Seeking an exemption on a project of this magnitude is inappropriate.

In the *Ozark Mountain* proceeding, the Board rejected attempts by the petitioner to use the exemption process. Instead, the Board required the submission of a detailed construction application, for a project far less costly and significant than TCR's.³⁴ In addition, because the financial feasibility of a large, complex, and costly passenger rail line was called into question, the Board properly directed the petitioner to provide the financial information required under its application procedures, including "projected construction costs, pro forma profit and loss statements, and funding sources."³⁵ For the following reasons, the Board should require TCR to do the same here.

1. TCR's investors are a mystery.

TCR is an unknown private entity, only recently established in Texas, backed by unknown Japanese entities. TCR's Petition lacks any information regarding the qualifications and experience of its management with respect to high-speed rail, presumably because there is none. TCR has no operations and has never generated revenue. Because TCR is an "entirely unknown entity that had provided no information on its investors or how it proposed to finance the construction of an estimated" \$12 to \$18 billion rail line, the *Ozark Mountain* precedent directs the Board to deny its Petition.

³³ See e.g., *Norfolk Southern Railway Company—Discontinuance Exemption—In Hudson County, NJ*, STB Docket No. AB-55 *at 13-14 (Mar. 12, 2001).

³⁴ *Ozark Mountain Railroad – Construction Exemption*, Docket No. 32204, 1995 ICC Lexis 248 at *4-6 (served Sept. 25, 1995).

³⁵ *Ozark Mountain Railroad – Construction Exemption*, Docket No. 32204, 1994 ICC Lexis 16 at *6-7 (served Feb. 18, 1994).

2. *TCR's Petition is unsupported.*

TCR's Petition lacks independent and unbiased factual support. The Board should not allow TCR to bypass submission of a construction application given its complete lack of evidence supporting its Petition. Overstated and unsubstantiated ridership estimates, together with significant financial uncertainties, should cause this Board to require a full application process.³⁶

TCR's request for an exemption based on its unsupported assertions handcuffs landowners from fully analyzing the Petition and preparing a meaningful reply. Landowners should not be required to search for information; rather, TCR was required to submit all support for its Petition at the time it was filed.³⁷

It is without question that TCR's lack of transparency as to the Project design, financing, ridership estimates, and economic benefits justifies a requirement that TCR furnish substantial additional information in a construction application. In a much less severe fact pattern in *Ozark Mountain*, the Board was decisive on this issue:

Our decision to revoke the conditional exemption should not be construed as a conclusion that the proposed construction and operation is inconsistent with the rail transportation policy. *It merely reflects the fact that we have received information raising serious concerns about the impact of the project on the people who live in the area. This information indicates that the application process, rather than the exemption process, is the more appropriate vehicle for the Commission to use in considering whether to approve the proposed construction and operation.*³⁸ (emphasis added).

TCR must concede that substantial opposition to the Project exists, as evidenced by over 1,500 verified statements from affected citizens and landowners.³⁹ In addition, the Board has

³⁶ *Id.*

³⁷ 49 CFR §1121.3.

³⁸ *Ozark Mountain*, 1995 ICC Lexis 248 at *15.

³⁹ See TAHSR Reply to Petition for Clarification, Exhibit 3.

already received numerous filings opposing the Project, including from Congressman Joe Barton (filed May 10, 2016) and Congressman Kevin Brady (filed May 13, 2016). Litigation in state court has also been initiated.⁴⁰

The following chart summarizes an analysis of the *Ozark Mountain* factors, and confirms that TCR should be required to file a full application for its Project:

FACTORS CONSIDERED BY THE BOARD	OZARK PROJECT - SPECIFIC FACTS	TCR PROJECT - SPECIFIC FACTS
1. Magnitude of the Project	\$300 Million	\$12-18 Billion 40-60 times greater than Ozark
2. Serious concerns raised by the public	200 letters from landowners	1,500+ verified statements from landowners, plus multiple letters from Federal and State Congressmen, and eight County Opposition Replies
3. Questions as to financial viability	Legitimate questions raised by opponents	TxDOT Report and Harding Verified Statement nullify viability of TCR's Project
4. Uncertainty as to completion of project	Serious concerns raised by opponents	TCR has shown no ability to raise \$12 billion, much less \$18 billion
5. Project sponsor would not supply financial documents	Railroad's refusal to produce documents was an impermissible collateral attack on Board authority	TCR has refused to produce information at every stage, and instead has engaged in a disinformation campaign
6. Questions as to ridership	Issues raised as to whether 5,000 passengers per day could be achieved	Near impossible goal of over 11,000 passengers per day. Unsupported projections fully discredited
7. Undisclosed investors	The Board called Ozark's investor mysterious	TCR's Japanese and primary investors are a mystery. TCR's 1% investors are only partially disclosed

⁴⁰ See footnote 8.

TAHSR is aware of the Board's general position that the purpose of the financial fitness test is "not to protect the carrier or its investors."⁴¹ However, in its *DM&E* decision, the Board noted, "if, for example, it turns out the cost of any environmental mitigation we impose would be so high that the project ultimately would not be financially viable," the Board could find that the proposed project would not meet the applicable statutory and regulatory requirements.⁴²

Given the undeniable fact that very few high-speed passenger rails have been profitable, and that this Project fails to meet any of the demographics which indicate probable success, the Board should realize at the outset that far more is involved than the protection of TCR and its investors. In this case, where construction cost estimates are free-floating and ridership projections are based on the diversion of over 60,000 more vehicles than reflected in TxDOT's traffic counts on I-45, things simply do not add up.⁴³ Furthermore, unlike the situation in *DM&E*, where the Board commented that serious challenges *were not raised* regarding the impact of the proposed construction, TAHSR is raising highly significant concerns and challenges which demonstrate that TCR's traffic and diversion projections are fundamentally flawed. As Dr. Harding concluded, and as confirmed by the TxDOT Report, any shortfall in passengers will result in the failure of ticket sales to cover TCR's costs. When this inevitably happens, the Project will fall in line with other failed high-speed rail projects doomed from the start by forecasting miscalculations and misguided assumptions.

A failure to undertake a comprehensive analysis of TCR's core projections will ultimately harm the high-speed passenger routes that the FRA has designated as viable candidates. In the final analysis, well-informed advocates of high-speed passenger rail will support the Board's decision

⁴¹ *Dakota, Mn & Eastern RR—Construction-Powder River Basin*, 3 S.T.B. 847, 866 (1998).

⁴² *Id.*

⁴³ See discussion at 33-37.

to require TCR to file a full application, so as to vet out ill-suited projects.⁴⁴ At present, little more than disinformation has been provided by TCR's promoters, who seem intent on following the trail that has been blazed by others who relied on overly optimistic assumptions regarding ridership forecasts and revenue projections.

B. The lack of information regarding the Project is staggering.

As of the filing of its Petition, TCR still has not answered many basic questions regarding its Project. Among them:

- How much is the Project going to cost to build? \$12B? \$18.3B? More?
- Who is going to pay for construction costs?
- Is all the financing in place yet? What contingencies exist?
- How much is it going to cost to operate and maintain the Project?
- What is the final route?
- Why was the business plan or business model not attached to the Petition?
- Why did TCR fail to disclose to the Board the ridership projections and cost estimates from the TxDOT Report?
- What are the ridership projections based on?
- Can the Project succeed financially?
- What foreign entities will have collateral rights on this piece of infrastructure?
- How much will a ticket cost?
- Is there going to be security screenings at the terminal? If not, why not?
- How much private property will need to be acquired through eminent domain?

⁴⁴ That the Dallas to Houston route was not designated in the FRA's *Vision for High Speed Rail in America* speaks volumes, and confirms that this Project is ill-advised and unnecessary.

- What early financial exits were offered to bring in initial investors?
- What is the construction schedule?
- What are the “key milestones” claimed to be so critical to the Project?

Instead of answering any of these questions, TCR has merely regurgitated generalized and unsupported statements about how badly Texas “needs” the Project and how “great” it will be for the State. TCR touts the public meetings it has held when, in truth, poorly informed spokesmen deftly avoided any tough questions. When it comes to specifics, TCR has clung to its mantra of “just take our word for it,” which is exactly what it is now asking the Board to do. TCR wants the Board to believe its claims regarding costs, ridership projections, economic and environmental benefits, and highway congestion, to name just a few. And TCR is asking the Board to believe all of these claims without having to introduce a shred of hard evidence as proof. TCR’s utter failure to present any supporting data, evidence or workpapers in direct violation of 49 USC §§ 1121.3 has left the Board in a position where it simply does not have sufficient information to make an informed decision.

In fact, hardly any of TCR’s claims are true, which is precisely why TCR has attempted this no-notice, fast-track exemption proceeding. TCR does not want to release financial or operational data, or participate in full discovery. Nor does TCR want its Project subjected to extended, meaningful public comment. Were these things to happen, the Project would be exposed for what it is—an ill-advised, fanciful promotion destined for failure, at the expense of thousands of Texas landowners and citizens, taxpayers, and unsuspecting investors.

As demonstrated below, TCR has not even attempted to provide sufficient information for the Board to make an informed decision. Accordingly, the Petition must be denied.

1. TCR has not disclosed its business plan.

TCR has yet to produce even a rudimentary business plan, even though it concedes such a plan exists. In its Petition for Clarification, TCR states that its “construction schedule is central to its business model.”⁴⁵ In Paragraph 2 of CEO Tim Keith’s verified statement in support of TCR’s Petition for Clarification, Mr. Keith references TCR’s “business plan.” However, TCR is withholding both its business model and business plan from the Board, and likewise refuses to disclose them to the public.

2. TCR has not disclosed any data supporting its construction costs.

As previously explained, two and a half years ago, TxDOT estimated the cost of the Project to be either \$16.8 or \$18.3 billion, depending on whether the announced stop in Brazos Valley is included.⁴⁶ On March 30, 2016, CEO Tim Keith advised the Japanese Press that construction costs would *exceed* \$12 billion.⁴⁷ TCR and Mr. Keith affirmatively misled the Board in TCR’s Petition three weeks later on April 19, 2016, swearing to a lowball estimate of \$10 billion.⁴⁸ Then, two weeks after TCR filed its Petition, the Houston Chronicle reported that TCR’s company officials estimated the cost at \$12 billion.⁴⁹ Many other newspapers corroborated TCR’s \$12 billion quote.⁵⁰

⁴⁵ Petition for Clarification at 3.

⁴⁶ Exhibit 2, TxDOT Report at 71, 75.

⁴⁷ Ichihara, Tomohiro, *Texas bullet train project pushing for Japan-friendly rules*, Nikkei Asian Review, March 30, 2016, <http://asia.nikkei.com/Business/Companies/Texas-bullet-train-project-pushing-for-Japan-friendly-rules>

⁴⁸ Petition at 4, V.S. Keith at ¶ 10.

⁴⁹ Begly, Dug, *City wants shot at downtown bullet train stop*, Houston Chronicle, May 2, 2016, <http://www.houstonchronicle.com/news/transportation/article/City-wants-shot-at-downtown-bullet-train-7388441.php>.

⁵⁰ See, e.g., Respaut, Robin, *Bullet Trains May Finally Come to the Us, Thanks to Chinese Investors*, *The Fiscal Times*, May 7, 2016, <http://www.thefiscaltimes.com/2016/05/07/Bullet-Trains-May-Finally-Come-US-Thanks-Chinese-Investors> and Hethcock, Bill, *Japanese company to create Dallas subsidiary for Texas bullet train*, *Dallas Business Journal*, May 18, 2016, <http://www.bizjournals.com/dallas/news/2016/05/18/japanese-company-to-create-dallas-subsidiary-for.html>.

How could TCR miss by so much? It seems clear that TCR's grossly understated \$10 billion estimate was chosen solely for the purpose of seeking an exemption from the Board.

While the total estimated construction cost is a moving target, what hasn't changed is TCR's steadfast refusal to produce any objective, reliable data in support of any of these constantly changing estimates. TCR has stubbornly ignored repeated requests for source documentation supporting projected construction costs. In truth, it seems TCR is plucking these estimates out of thin air. TCR should be required to submit a comprehensive accounting of construction costs, backed by objective, reliable supporting data from independent experts. TCR should further be required to disclose its construction schedule and estimated costs for each year of construction.

3. *TCR has not disclosed its operational and maintenance costs and data.*

TCR has yet to provide an operating plan, traffic projection studies, operational or maintenance data, or any estimates of annual operating and maintenance ("O&M") costs. Not only will TCR have to pay back massive construction loans and service the high-risk interest returns to its investors, it will also have to cover substantial O&M costs in order for the Project to be financially feasible. The Board should require TCR to produce its operating plans, traffic studies, estimated O&M costs, along with all supporting data in the context of a full application.

4. *TCR has not disclosed its feasibility studies or any data supporting its ridership projections.*

In early 2013, TCR's main partner, the Japan Bank for International Cooperation, commissioned a High Speed Rail Feasibility Study to be conducted on the Project. The Feasibility Study contains TCR's ridership projections and fare estimates, but TCR refuses to release this

critical data to the public. TCR claims the information is trade secret and confidential commercial information.⁵¹

In fact, TCR has gone to great lengths to hide this critical ridership and cost data. After TCR sent the Feasibility Study to TxDOT in conjunction with the FRA's environmental review, TAHSR submitted an open records request for the Feasibility Study. Not surprisingly, both TCR and TxDOT refused to disclose an unredacted copy of the study. Instead, TCR redacted all of the critical ridership projections and cost data (consisting of almost 200 pages of the study), and filed a letter brief with the Texas Attorney General seeking protection from disclosure. Before forwarding its letter brief to TAHSR, however, TCR heavily redacted the brief.⁵² In short, not only is TCR concealing its ridership projections and cost estimates, TCR is also concealing its legal arguments by blanket redaction.

In March, 2016, TAHSR filed a Texas Public Information Act suit against TxDOT and the Texas Attorney General to obtain TCR's critical information.⁵³ TAHSR then served a subpoena requesting a deposition of a TCR corporate representative.⁵⁴ Like clockwork, TCR quashed the subpoena and refused to produce a representative under oath. TAHSR also sent a letter directly to TCR requesting an unredacted copy of the Feasibility Study,⁵⁵ but TCR ignored TAHSR's request.

Given that TCR is now claiming four million passengers will ride its high-speed train by 2025, it can no longer claim its ridership projections to be trade secret or confidential. In its Petition, TCR also references "projections of future market demand" which TCR claims would

⁵¹ TCR also failed to submit the Feasibility Study as evidence supporting its ridership projections, as required by 49 U.S.C. §1121.3.

⁵² Exhibit 4 attached.

⁵³ Exhibit 5 attached.

⁵⁴ Exhibit 6 attached.

⁵⁵ Exhibit 7 attached.

allow it “to operate up to 34 daily trains in each direction.”⁵⁶ This coincides with editorials written by TCR’s promoters boasting that “several years of intensive market research confirm ridership for this project.”⁵⁷ But TCR won’t release any of these projections of future market demand or alleged research, nor has it produced any data supporting its projections to the Board. TCR’s lack of transparency with respect to its ridership, likely the most fundamental determinant of financial feasibility, is alarming, and ample reason to deny TCR’s Petition.

5. *TCR has not disclosed its fare estimates or any plans for parking.*

Much like its construction costs, TCR’s fare estimates have been all over the map. TCR has stated it will have a “dynamic pricing model,” that it expects “ticket prices to be very competitive with those of airlines,” and that the “cost to travel would be about 80 percent of the cost of a commercial air ticket between the two cities.”⁵⁸ For purposes of the TxDOT report, TCR told TxDOT to assume a \$108 fare estimate in conducting its ridership analysis.⁵⁹ But TCR chose this amount only because TxDOT’s model had generated unacceptably low ridership projections with higher fares.⁶⁰ In complete contrast to these competitive pricing claims, TAHSR recorded TCR spokesman Robert Eckels boasting, “We’re a private company. It’s going to cost as much as we can afford to charge you and you’ll be willing to pay.”⁶¹

⁵⁶ Petition at 2.

⁵⁷ Exhibit 8 attached.

⁵⁸ See <http://www.texascentral.com/facts/> and Sneider, Julie, *Texas Central Railway’s plan to build a Dallas-to-Houston bullet train is gaining speed*, Progressive Railroading, June 2014, http://www.progressiverailroading.com/high_speed_rail/article/Texas-Central-Railways-plan-to-build-a-Dallas-to-Houston-bullet-train-is-gaining-speed--40687

⁵⁹ Exhibit 2, TxDOT Report at 73.

⁶⁰ *Id.* at 71. Using a higher fare, TxDOT projected annual ridership between 0.7 and 2.7 million.

⁶¹ <https://youtu.be/oMdfcd5uDEI?t=2m31s>.

TCR's paucity of information regarding its fare estimates is especially troubling considering the elasticity of demand based on ticket prices. In short, a higher priced ticket will greatly reduce demand. A lower priced ticket ensures financial failure.

And then there is parking. How many spaces will there be and how much will they cost? This will also influence how many passengers choose to ride the rail. TCR must release its fare estimates, parking plans, and all supporting data, as these issues are crucial to determining the feasibility of the Project.

6. TCR has not disclosed any research or objective data supporting the Project's alleged tax revenue, economic benefits, or creation of jobs.

TCR claims the Project "could spur \$36 billion in economic benefits, and generate nearly \$2.5 billion in tax revenues to the state counties, local municipalities, school districts and other taxing entities, between 2015 and 2040."⁶² In support, TCR cites to footnote 33, which references a report created by Insight Research Corporation titled *Texas Central's High Speed Rail Corridor and Related Private Development Houston to Dallas/Fort Worth, Texas* (the "Insight Report").

Relatedly, TCR proclaims that construction of the Project will create more than 10,000 temporary jobs per year and that once passenger service commences, 1,000 permanent jobs will be created.⁶³ However, TCR provides no citation in support of these claims. Tim Keith repeats these claims in his verified statement, and he adds that the Insight Report estimates that private development related to the Project will create approximately 14,000 direct jobs and 21,000 indirect jobs.⁶⁴ Despite these bold claims, TCR refuses to release the actual Insight Report, which in turn

⁶² Petition at 11.

⁶³ *Id.*

⁶⁴ V.S. Keith at ¶ 22.

casts doubt as to the existence of any objective data used to calculate the supposed economic benefits and jobs creation.

7. TCR's stated reasons for concealing the Insight Report are concerning.

After TCR filed this Petition, TAHSR immediately sent a letter to TCR's counsel Raymond Atkins requesting the Insight Report.⁶⁵ After being rebuffed by two different TCR law firms in Texas, TAHSR hoped that TCR's counsel in this proceeding would recognize the axiomatic principle that if you cite a report to the Board, you need to produce it. TAHSR explained to that if the Insight Report supports TCR's claims regarding how great this Project will be for Texas, it would seem TCR would want to share the report with the public. No such luck. TCR's counsel stonewalled, stating that TCR refuses to produce the Insight Report because it contains "certain proprietary, commercially sensitive information, *the public disclosure of which would be highly prejudicial to Texas Central.*"⁶⁶ (emphasis added). To be clear, on the one hand TCR repeatedly cites to the report to bolster its argument that the Project will be of great economic benefit to the public. On the other hand, TCR claims public disclosure of the report would be highly prejudicial to TCR. The Board should not allow TCR to continue hiding behind these legally baseless, empty excuses. Rather, TCR should be required to release the Insight Report and produce evidence supporting its claims.⁶⁷

⁶⁵ Exhibit 9 attached.

⁶⁶ Exhibit 10 attached.

⁶⁷ It is clear from the statements filed in support of TCR's Petition for Clarification that support for the Project appears to be based on TCR's claims of economic benefits to local and state economies over the next 25 years. Therefore, the Board should ensure that those alleged benefits are not merely disinformation being used to window-dress the Project.

8. TCR has not disclosed any plans for security.

Although TCR claims “check-in and security procedures would be far less time-consuming than at busy airports,”⁶⁸ it has presented no support for this statement. Similarly, at multiple county meetings, public forums, and to the press, TCR has told the public its Project will not have any invasive security procedures like Transportation Safety Administration (“TSA”) airport security, which cause long lines for passengers. But TCR has presented no support for this claim either. Rather, TCR reverts to its mantra, “just take our word for it.” TCR should be required to tell the Board, if not TSA-level security then what level of security will there be? Will guns be allowed on the rail? What about flammable liquids? How will these prohibitions be enforced—metal detectors, body scans?

The Board should require TCR to present a comprehensive security plan before the Petition is considered. From January 2004 through July 2008 there were 530 terrorist attacks worldwide against passenger rail targets, resulting in more than 2,000 deaths and 9,000 injuries.⁶⁹ The TSA considers passenger railroads to be high consequence targets in terms of potential loss of life and economic disruption as they carry large numbers of people in a confined environment, offer the opportunity for specific populations to be targeted at particular destinations, and often have iconic structures such as TCR’s Project.⁷⁰ Between 1970 and 2012 there were 33 high-speed rail attacks worldwide, killing 32 people.⁷¹

⁶⁸ Petition at 7.

⁶⁹ U.S. Government Accountability Office, *Technology Assessment: Explosives Detection Technology to Protect Passenger Rail*, July 2010, <http://www.gao.gov/assets/310/307828.pdf>.

⁷⁰ Polunsky, Steven, *Will Texas Trains Have Japanese Cops?*, Medium, July 26, 2015, <https://medium.com/homeland-security/will-texas-japanese-trains-have-japanese-cops-c265cdaff82#.gghs81ifk>.

⁷¹ Jenkins, Brian M., Kouzub, Chris, et al., *Formulating a Strategy for Securing High-Speed Rail in the United States*, March 2013, <http://transweb.sjsu.edu/PDFs/research/1026-securing-US-high-speed-rail-brief.pdf>.

More recently, in 2015, an Islamic terrorist attacked a high-speed train while in transit between Belgium and France.⁷² The terrorist had knives, pistols, high-powered assault rifles, and a bottle of gasoline. The attack was intended to be a mass arson and murder. In response to this attack, Belgium is instituting increased baggage checks, and the European Union is considering introducing metal detectors and body scans at all train stations. Additionally, in July 2015 there was a suicide attack on the high-speed rail in Japan.⁷³ The terrorist immolated himself, and smoke filled the train coach. The windows on a high-speed train cannot be opened, and the doors can only open once the train fully stops, which takes several minutes. Any fire creates an imminent risk of death by smoke inhalation for the passengers in that coach. Indeed, a female passenger was choked to death by smoke from the fire. TCR misleadingly claims that there has never been a fatality on Japan's high-speed rail, when in this attack alone, there were two. Experts in train transportation safety in Japan have admitted that there are blind spots in the security system on the high-speed rail in Japan, and have advised changes in risk management and security checks.⁷⁴ Given the state of terrorism, when one suicide terrorist with a 16-ounce coke bottle filled with gasoline can take out a full coachload of passengers, can TCR truly tell the public and the Board that there will be no security checks whatsoever?

⁷² Chrisafis, Angélique, *France train attack: Americans overpower gunman on Paris express*, The Guardian, August 22, 2015, <http://www.theguardian.com/world/2015/aug/21/amsterdam-paris-train-gunman-france>.

⁷³ Associated Press, *Fatal fire on Japan's bullet train, airtight as a plane, reveals lax security, other lapses*, July 4, 2015, <http://www.foxnews.com/world/2015/07/04/fatal-fire-on-japan-bullet-train-airtight-as-plane-reveals-lax-security-other.html#>.

⁷⁴ Yamaguchi, Mari, *Bullet trains get rude wake-up call*, The Japan Times, July 4, 2015, <http://www.japantimes.co.jp/news/2015/07/04/national/bullet-trains-get-rude-wake-up-call/#.V0ylHVdZHts>.

9. TCR refuses to provide its financial information.

On numerous occasions and in its Petition, TCR claims that the Project will be constructed and operated exclusively with “private financing.” However, TCR’s prior statements belie these claims. Back in 2014, TCR entered into a Memorandum of Understanding with the FRA that specifically states that TCR “may submit applications to the [FRA] for loans.”⁷⁵ On other occasions, TCR has admitted that it may rely on other taxpayer-subsidized Transportation Infrastructure Finance and Innovation Act (“TIFIA”) loans, Railroad Rehabilitation and Improvement Financing (“RRIF”) loans and potentially Transportation Investment Generating Economic Recovery (“TIGER”) and other federal funding.⁷⁶ Even more telling, former Ambassador Ron Kirk, a TCR senior advisor and spokesman, has conceded that TCR *will aggressively pursue* federal loans.⁷⁷ Since taxpayers will be at risk, the Petition should be denied and the Project should be thoroughly reviewed.

Upon information and belief, TCR’s main investing partner is the Japan Bank for International Cooperation (“JPIC”). Based on various reports, JPIC may fund between \$3.5 to \$5 billion for the Project. It is entirely unclear what contingencies exist, and whether the JPIC will have collateral on the land TCR intends to take from Texas landowners through eminent domain. If this is the case, TCR should be required to disclose what property rights, if any, are pledged to Japanese investors as collateral.

⁷⁵ Exhibit 11 attached.

⁷⁶ See, e.g., Eric Nicholson, *Texas Central Railway’s Fuzzy Definition of ‘Privately Financed,’* Dallas Observer, August 11, 2015, <http://www.dallasobserver.com/news/texas-central-railways-fuzzy-definition-of-privately-financed-7479867>.

⁷⁷ Formby, Brandon, *Biden calls Dallas-Houston bullet train beginning of new transportation era in America,* The Dallas Morning News, November 18, 2015, <http://transportationblog.dallasnews.com/2015/11/as-biden-addresses-infrastructure-spending-in-dallas-lawmakers-grapple-with-funding-in-d-c.html/>.

Assuming the JPIC will fund as much as \$5 billion of the cost of construction, that amount, when viewed against the backdrop of TxDOT's estimates, leaves over two-thirds of the cost of construction to be covered by other investors. Should actual costs follow the well-recognized tendency to exceed the original estimated cost of construction, even more private financing will be needed.

Although TCR claims that it has the ability to line up private funds for the Project, the Board has heard this before from other parties (DM&E Railroad). Not only has TCR admitted it does not have its private funding in place, it has not even disclosed how close (or far) it is from raising the necessary financing. The only announcement of true cash investors is less than \$100 million, leaving TCR at least \$11.9 billion short of its projected construction costs. And even that \$100 million amount is unverified. Without assurance that sufficient funding is in place, it is premature for the Board to approve construction. TCR should first be required to demonstrate to the Board the extent to which funds for financing are now available, and a projected timeline regarding when the remaining funds will be acquired. And, TCR should be required to disclose: (i) all terms of contingencies related to its alleged private financing, (ii) whether it has disclosed accurate ridership projections to its lenders, and (iii) all "key milestones within defined timeframes" that must be met.⁷⁸

IV. Based on Available Data, TCR's Ill-Advised Project is Destined for Failure.

A. TCR's proposed rail line has none of the indicators of profitable high-speed rail lines.

One of the main reasons TCR is refusing to hand over data is that all available data strongly suggests that the Project will be a disaster. Only two high-speed rails ("HSR") in the world are

⁷⁸ Petition for Clarification at 4.

profitable: Paris-Lyon in France and Tokyo-Osaka in Japan.⁷⁹ A third HSR breaks even: Osaka-Hakata in Japan.⁸⁰ A quick analysis of what makes these few HSR's profitable should help the Board understand why TCR's Project is not financially feasible.

First, population density in core cities is a strong indicator of success because HSR's depend on population density to operate efficiently:

- Tokyo
 - 2016 population: 37,750,000
 - Population density: **11,440 people per square mile**⁸¹

- Paris
 - 2016 population: 10,870,000
 - Population density: **9,900 people per square mile**⁸²

- Osaka-Kobe-Kyoto
 - Population: 16,985,000
 - Population density: **13,700 people per square mile**⁸³

In stark contrast, Dallas/Fort Worth and Houston are currently less than 25% of Tokyo's density, and nowhere near the population density of the core cities from profitable HSR routes, even when factoring in projected growth:

- Dallas/Fort Worth
 - 2016 population: 6,280,000⁸⁴
 - Projected 2030 population: 8,910,000⁸⁵

⁷⁹ Feigenbaum, Baruch, *High-Speed Rail in Europe and Asia: Lessons for the United States*, Reason Foundation, May 2013, http://reason.org/files/high_speed_rail_lessons.pdf at 18.

⁸⁰ *Id.*

⁸¹ Demographia, *World Urban Areas* (12th Annual Edition).

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ Demographia, *World Urban Areas Population Projections* (6th Edition).

- Population density 2010: **2,800 people per square mile**⁸⁶
- Projected population density 2030: **3,970 people per square mile**

- Houston
 - 2016 population: 6,005,000⁸⁷
 - Projected 2030 population: 7,870,000⁸⁸

 - Population density 2010: **2,800 people per square mile**⁸⁹
 - Projected population density 2030: **3,670 people per square mile**

Second, the percentage of the workforce who use public transit in core HSR cities is another strong indicator of profitability. Residents in Dallas/Fort Worth and Houston simply do not use transit at all, in contrast to cities where profitable HSR's operate:

- Tokyo: 60%⁹⁰
- Osaka: 60%
- Dallas/Fort Worth: 1.6%⁹¹
- Houston: 2.4%⁹²

Dallas/Ft. Worth only has 1.6% the public transit usage of Tokyo; Houston is a paltry 4% of Tokyo's transit usage. Even within the United States, Houston and Dallas have an unusually low percentage of transit usage, considering their large urban populations. Of the 280 cities who reported "trip per resident" data to the National Transit Database, Houston and Dallas ranked 91st and 102nd respectively.⁹³

⁸⁶ Demographia, *World Urban Areas* (12th Annual Edition).

⁸⁷ *Id.*

⁸⁸ Demographia, *World Urban Areas Population Projections* (6th Edition).

⁸⁹ Demographia, *World Urban Areas* (12th Annual Edition).

⁹⁰ Feigenbaum, Baruch, *High-Speed Rail in Europe and Asia: Lessons for the United States*, Reason Foundation, May 2013, http://reason.org/files/high_speed_rail_lessons.pdf at 23.

⁹¹ US Department of Commerce, US Census Bureau, <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

⁹² *Id.*

⁹³ Fischer-Baum, Reuben, *How Your City's Public Transit Stacks Up*, FiveThirtyEight.com, July 31, 2014, <http://fivethirtyeight.com/datalab/how-your-citys-public-transit-stacks-up/>.

Third, HSR's have proven successful in cities with a limited supply of cars and historical dependence on transit. Dallas and Houston have some of the highest car ownership and lowest transit usage rates of any major metropolitan areas in the world. This is largely because both cities, as shown above, are among the least dense metropolitan areas in the world. These factors help to explain why Texans rely primarily on their automobiles for travel, and why this trend will likely continue. Combined, these are severe negative indicators for the viability of the Project.

Finally, construction costs of the profitable HSR's were far lower than the estimated costs of TCR's Project:

- Tokyo - Osaka: \$.92 billion total, \$2.6 million per mile⁹⁴
- Osaka – Hakata: \$2.95 billion, \$7.6 million per mile
- Paris – Lyon: \$2.06 billion, \$3.3 million per mile⁹⁵
- TCR's Project: estimated \$12 to \$18.3 billion, **\$50 to \$76 million per mile**

Moreover, the Project will likely cost far more to build than even the highest of these estimates. The Journal of the American Planning Association issued an exhaustive study which examined 258 transportation infrastructure projects around the world. The study contained startling findings, namely that 90% of infrastructure projects had underestimated costs, and total costs for those projects were on average 28% higher than estimated.⁹⁶ More importantly, rail projects were the most severely underestimated, costing an average of 45% more than projected.⁹⁷

⁹⁴ Feigenbaum, *High-Speed Rail in Europe and Asia: Lessons for the United States*, at 15, Table 2 (citing to *High Speed Rail in Japan: A Review and Evaluation of the Shinkansen Train, Economic Analysis of High Speed Rail in Europe*, and other sources).

⁹⁵ *Id.*

⁹⁶ Bent Flyvbjerg, Mette Skamris Holm and Soren Buhl, *Underestimating Costs in Public Works Projects: Error or Lie?*, Journal of the American Planning Association, vol. 68, no. 3, Summer 2002, pp. 279-295.

⁹⁷ *Id.*

The title of the study – “**Underestimating Costs in Public Works Projects: Error or Lie?**” – is especially applicable here.

In addition, TCR’s Project will have to be elevated for long segments in order to accommodate rural Texas landowners, who depend on the ability to move livestock and operate agricultural equipment and machinery for their livelihood. The cost of building elevated lines is significantly higher than the cost of building surface lines. Further, the grade or change in elevation of the line has to be very slight for TCR’s rail line to operate at 200 miles per hour, necessitating longer elevated segments than would be required for slower speed rail systems.

As shown above, it is clear Dallas and Houston do not have any of the source indicators of profitable HSR’s. For those that live in Dallas and Houston, this conclusion is not surprising. Texans have cars and trucks, and independence by automobile is in their genetic makeup. Texans are not going to pay exorbitant amounts for high-speed rail tickets when they can drive up or down I-45 for the cost of a tank of gas, which is cheaper in Texas than anywhere in the world. The Project is not a necessary or feasible alternative, plain and simple.

B. TCR is greatly overestimating its four million annual ridership projection.

1. TxDOT’s traffic counts demonstrate that TCR’s ridership projections are greatly exaggerated and unsustainable.

TCR now claims, without any supporting data, that four million passengers will ride its high-speed train annually by 2025.⁹⁸ This annual total equates to 10,958 passengers per day. By comparison, in 2014 Quarter 3 through 2015 Quarter 3, only 2,858 passengers flew from Dallas to Houston per day.⁹⁹ TCR claims it will divert 20% of all passengers to its train, including air

⁹⁸ Petition at 8.

⁹⁹ Exhibit 12 attached, from U.S. Department of Transportation’s Domestic Airline Consumer Airfare Reports, <https://www.transportation.gov/office-policy/aviation-policy/domestic-airline-consumer-airfare-report-pdf>.

traffic.¹⁰⁰ 20% of daily air traffic (2,858) would equal 571 passengers. So, according to their own, newly-released projections, in addition to diverting 20% of all air travelers, TCR must also find—each and every day—10,387 Dallas to Houston vehicle travelers and convince them to take the train as well:

10,958 (total projection) – 571 (air traveler projection) = 10,387 vehicle travelers needed

As will be demonstrated, the notion that TCR will achieve its four million annual ridership projection, or anything remotely close to it, is fantasy.

According to TCR’s promotional campaign, over 90,000 vehicles travel between Dallas and Houston daily.¹⁰¹ From this pool of vehicles, TCR apparently believes it will be able to divert enough passengers to the train to meet its 10,958 daily projection. However, this 90,000 daily Dallas to Houston vehicles figure is demonstrably false.

As described in more detail in the verified statement of Dr. John Harding, TxDOT conducts 24-hour traffic counts 365 days a year along the I-45 highway between Dallas and Houston.¹⁰² These traffic counts can be accessed using TxDOT’s Statewide Planning Map application.¹⁰³ Logically, the number of vehicles traveling between Dallas and Houston daily *must be less* than the minimum traffic point along the route.

TxDOT traffic studies, publically available on TxDOT’s website, confirm the minimum traffic point occurs near Streetman, TX. In 2014, traffic at Streetman, TX amounted to an average

¹⁰⁰ Petition at 8.

¹⁰¹ Exhibit 13, from TCR’s YouTube promotional video “Dallas/Fort Worth to Houston in 90 minutes,” <https://youtu.be/k6igUibrfvc?t=49s>.

¹⁰² <http://www.txdot.gov/inside-txdot/division/transportation-planning/maps.html>.

¹⁰³ <http://www.txdot.gov/inside-txdot/division/transportation-planning/maps/statewide-planning.html>.

annual daily traffic of 26,256 vehicles (9.58M/y), of which 40.4% are trucks.¹⁰⁴ Commercial trucks cannot be used to estimate potential passengers. Reducing 26,256 vehicles by 40.4% trucks leaves approximately 15,750 passenger vehicles. This traffic logically includes two types: specific Dallas to Houston traffic, and all other traffic. Other traffic includes *both* local traffic traveling short of Dallas to Houston (for example Dallas to Corsicana or Corsicana to Buffalo), and any long-haul traffic traveling beyond Dallas or Houston on either end. For obvious reasons, other traffic will likely be a very significant percentage of the 15,750 passengers passing through Streetman, TX.

TCR's consultant, the Louis Berger Group, estimated that the specific Dallas to Houston traffic percentage would be 55% ("Dallas to Houston Factor"),¹⁰⁵ a surprisingly high figure for which no supporting data has been provided. But in order to put TCR's projections in the best light, Dr. Harding uses TCR's 55% figure in his analysis. The 15,750 passenger vehicle figure must be reduced by the Dallas to Houston Factor to determine the actual numbers of passenger vehicles traveling between Dallas and Houston:

<p style="text-align: center;">15,750 (minimum point passenger vehicles) × 55% (Dallas to Houston Factor) = 8,607 total vehicles available for diversion</p>

Simply put, using TCR's own Dallas to Houston Factor and TxDOT's traffic counts, no more than 8,607 passenger vehicles travel daily between Dallas and Houston, and substantially less if TCR's 55% factor is overstated. TCR has refused to disclose the basis for its claim that 90,000 vehicles travel daily between Houston and Dallas, as compared to the 8,607 figure extrapolated from TxDOT's daily traffic counts and TCR's consultant's projections.

¹⁰⁴ Exhibit 14 attached, from TxDOT's Statewide Planning Map application.

¹⁰⁵ Exhibit 15 attached.

The diversion rate is the next factor that must be considered in analyzing TCR’s ridership projections. Diversion rate is the percentage of vehicle passengers TCR can expect to divert to its high-speed train. Diversion rates for rail projects average below 10% of eligible vehicles.¹⁰⁶ However, TCR’s consultant uses a surprisingly high 15% diversion rate.¹⁰⁷ In order to give TCR the benefit of the doubt, Dr. Harding used TCR’s diversion rate of 15% in the following Traffic Study Chart, along with TxDOT’s numbers:¹⁰⁸

TRAFFIC STUDY CHART

	<u>2014</u>	<u>2034</u>
Average Daily Minimum Traffic Count (TxDOT)	26,256	39,015
➤ Reduce by TxDOT Truck Percentage	40.4%	40.4%
Total Passenger Vehicles at Minimum Traffic Volume Point	15,649	23,253
➤ Apply Dallas to Houston Factor (from TCR’s consultant)	55%	55%
Dallas to Houston Only Passenger Vehicles (available to divert to HSR)	8,607	12,789
➤ Apply Diversion Factor to HSR (from TCR’s consultant)	15%	15%
-----	-----	-----
Maximum New HSR Passengers Per Day Diverted from I-45	1,291	1,918

Even if TCR captured, *on day one of operations*, 20% of the 2,858 airline passengers that on average fly between Dallas and Houston daily, along with a full 15% diversion of available Dallas to Houston passenger vehicles, its daily passenger rate would total a mere 1,808 passengers:

¹⁰⁶ According to the FRA, only 5% of highway trips (at most) will be diverted to rail. Feigenbaum, *High-Speed Rail in Europe and Asia: Lessons for the United States*, at 30.

¹⁰⁷ Exhibit 15.

¹⁰⁸ Harding V.S. at ¶¶ 13-16.

571 (diverted air travelers) + 1,291 (diverted passenger vehicles) = 1,862 TCR train passengers
--

This is more than 9,000 daily passengers short (83%) of TCR's projection. As previously stated, the chart above gives TCR the full benefit of the doubt by assuming:

- (i) TCR's 55% Dallas to Houston factor;
- (ii) TCR will divert 20% of air travelers to its train; and¹⁰⁹
- (iii) TCR's diversion rate of 15% of passenger vehicles.¹¹⁰

TCR stresses how fast Dallas and Houston are growing, but that argument misses the point. The real issue that must be examined is the number of people traveling between Dallas and Houston daily, and the percentage of those travelers TCR can reasonably expect to divert to its high-speed train. And on that critical point, the numbers do not lie. TCR will never be able to repay its investment, much less pay operating costs, when it is more than 9,000 passengers per day short of its projections. Nor will there be any environmental or economic benefits if TCR is running a basically empty train.

2. *TCR is ignoring competitive air traffic.*

TCR is ignoring the highly competitive nature of air service between Houston and Dallas, with two major airports at each location and approximately 50 flights per day in each direction at fares nearly equal to the federal mileage rate (\$.54/mile).¹¹¹ Simply put, it is easy and inexpensive to fly from Dallas to Houston. A traveler can fly from Dallas to Houston in the morning in just one hour, gate-to-gate. Moreover, most same day business travelers do not check luggage, thereby speeding them through the airport. That same traveler can book a 5:00 p.m. return flight, and if an

¹⁰⁹ Petition at 8 (“...by 2026 approximately 20% of Dallas-Houston travelers will choose Texas Central’s high-speed passenger service”).

¹¹⁰ Exhibit 15.

¹¹¹ Exhibit 2, TxDOT Report at 73.

earlier or later flight is needed, the 5:00 flight can be changed with relative ease and at no charge. Dallas/Love Field Airport has recently been renovated and is one of the nicest airports in the region. Plus, it is one of the easiest airports to get in and out of, and is a 10-minute taxi or Uber to downtown Dallas. Houston Hobby is also just a short trip downtown.

3. *TCR's Project is not going to take cars off the road.*

Automobile travel differs from air or rail travel in that it involves door-to-door service, flexibility in departure, and no space-sharing with strangers. HSR travel must be extremely competitive in other dimensions such as speed or cost to attract passengers. Several previous HSR studies have overestimated the number of automobile users who choose rail over highway or air by factor of ten.¹¹² With an extremely low public transit usage in both Dallas and Houston (approximately 2%), virtually all of TCR's putative passengers will travel by car, Uber, or taxi to the train station. To reiterate, neither Dallas nor Houston has any rail or light rail feeding passengers to the station, as is the case in Japan or Europe. If 98% of the passengers are driving or being dropped off, no inner city traffic reduction will be accomplished whatsoever. If anything, drivers on the outskirts of Houston who would have headed north or used routes which bypass clogged routes and already reached the highway, must now swim upstream and fight urban traffic to get to the HSR station, making bad traffic worse. The same goes for Dallas.

The truth is Dallas and Houston have difficult inner-city traffic, but I-45 is not congested other than immediately north of Houston. A close read of TCR's Petition reveals that its argument is focused on this inter-city traffic congestion in Dallas and Houston, but it has given no verifiable congestion statistics on I-45 other than its imaginary, discredited 90,000 daily vehicle number.

¹¹² Cox, Vranich, and Moore, *The California High-Speed Rail Proposal: A Due Diligence Report*, Reason Foundation, September 2008, <https://reason.org/files/1b544eba6f1d5f9e8012a8c36676ea7e.pdf>, at 43.

So the question is framed: Is I-45 one of the nation's busiest and most highly congested corridors? The answer is found in a study titled "Where High-Speed Rail Works Best," upon which TxDOT relied in its 2013 TxDOT Report, where the authors concluded that I-45 "is *not* among the most heavily trafficked non-metro highways in the country."¹¹³ (emphasis added). Indeed, the congestion is not on the major stretch of highway between the two cities. It is contained within Dallas and Houston city limits, just like in any major metropolitan area. In Dallas, it takes approximately five to ten minutes to get south of downtown and onto the free-flowing I-45 highway. Any relief that the Project would provide to Dallas congestion would be minimal, because passengers would have to drive to the station (within city limits) to board the rail line anyway.

In Houston, the situation is much different. As noted earlier, TCR's proposed terminus is in northwest Houston, a suburban area nowhere near downtown. As a result, the Project will not relieve any congestion where the congestion actually is (within city limits). Furthermore, since so few drivers figure to switch from automobile travel to rail to (historically less than 10%), the rail line will not significantly reduce highway congestion.

Finally, there is no financial incentive for a family of four with limited financial resources to take TCR's rail to or from Dallas and Houston. Not only will the family have to purchase four round-trip tickets totaling between \$800-\$1500, they will have to drive to the depot, pay for parking, and rent a car at \$75 per day. If the trip is extended more than one day, these out-of-pocket expenses will only increase. When the choice is \$50 for a tank of gas, or next month's house payment for the TCR's train, Texans will drive.

¹¹³Hagler and Todorovich, *Where High-Speed Rail Works Best*, America 2050, September 17, 2009, <http://www.america2050.org/pdf/Where-HSR-Works-Best.pdf>, at 4.

4. Rail consultants are notorious for creating fallacious “demand exaggeration.”

In sum, all available data indicates that TCR’s ridership projections are absurdly high. This is consistent with the experience of “demand exaggeration” that has routinely plagued rail projects like TCR’s. In 2004, former California State Senate President James Mills—a longtime rail supporter—is reported to have described the entire California HSR Plan as “based on a fallacy” of wildly exaggerated ridership projections.¹¹⁴ The problem stems, he said, “from hiring a consulting firm (and) letting them know what you want them to say.”¹¹⁵ That is exactly what TCR has done here. And, much like the California HSR, it can be expected that TCR’s fare revenue will be far less than anticipated, leading to financial difficulties and a need for substantial infusions of taxpayer subsidies.

Similarly, in a seminal work that examined 258 transportation infrastructure “megaprojects” covering 70 years in North America, Europe and elsewhere, the researchers noted that projections “were consistently erroneous.”¹¹⁶ In addition, the study found that these erroneous projections exhibited “optimism bias” and “strategic misrepresentation,” a phenomenon also referred to as “lying.”¹¹⁷ Strategic misrepresentation occurs when consultants and project promoters seek to obtain approval for projects that might not be feasible with more modest and realistic projections.¹¹⁸ Here again, this sounds eerily similar to TCR’s Project.

¹¹⁴ Holstege, Sean, *Truth may have come off the tracks*, Oakland Tribune, August 22, 2004.

¹¹⁵ *Id.*

¹¹⁶ Flyvbjerg, Bruzelius and Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition*, Cambridge University Press, 2003.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

C. Even if TCR could attract four million passengers annually, it will not be able to generate sufficient revenue to cover costs.

Dr. Harding took his ridership analysis a step further. He created two Income Statements using TCR’s projections, data from the TxDOT Report, and a 5% blended rate for debt service and investor return, which represents a conservative assumption.¹¹⁹ He applied TCR’s most favorable ridership estimate as utilized by TxDOT (5.7M/year). He also set aside the \$18.3B TxDOT estimate, and instead used TCR’s most recent construction cost estimate (\$12B), and its low operations and maintenance (O&M) estimate (\$266M/year). Even after using all of TCR’s own numbers, Dr. Harding determined the Project will run *an annual loss* of <\$250,000,000>.¹²⁰ To clarify, this *quarter billion-dollar deficit* occurs after 20 years of operation, when the train should be running at optimal levels.

Passengers Per Year in 2035	5,700,000
Ticket Price	\$108
Gross Annual Revenue	\$615,600,000
Less Debt Service/Return to Investors (5% interest only on \$12,000,000,000 upfront capital)	<u>\$600,000,000</u>
Annual Revenue available after Debt Service/Return to Investors	\$15,600,000
Less: Annual O&M Costs	<u>\$266,000,000</u>
Annual Deficit	(\$250,400,000)
Deficit over 40 years	(\$10,016,000,000)

¹¹⁹ The proponent of the Florida HSR issued bonds at a 12% coupon rate. Obviously, equity investors will require some guaranteed return on such a risky investment. Further, any debt to the Japanese must be repaid on an amortized schedule, and bonds will eventually need to be retired. Factoring all of the foregoing, Dr. Harding used an optimistic and conservative assumption (favoring TCR) of 5% for a weighted cost of capital, bonds, and debt. Harding V.S. at ¶ 19.

¹²⁰ Harding V.S. at ¶¶ 21-23.

In a second Income Statement, Dr. Harding used TCR’s lowest ridership estimate from its Petition (4M/year), and TxDOT’s more realistic construction cost estimate (\$16.8B).

Passengers Per Year in 2035	4,000,000
Ticket Price	\$108
Gross Annual Revenue	\$432,000,000
Less Debt Service/Return to Investors (5% interest only on \$16,800,000,000 upfront capital)	<u>\$840,000,000</u>
Annual Loss after Debt Service/Return to Investors	(\$408,000,000)
Less: Annual O&M Costs	<u>\$266,000,000</u>
Annual Deficit	(\$674,000,000)
Deficit over 40 years	(\$26,960,000,000)

Again, both of these Income Statements:

- (i) sets aside the \$18.3 billion TxDOT construction estimate;
- (ii) uses TCR’s 55% Dallas to Houston factor;
- (iii) uses TCR’s 15% Diversion Rate; and
- (iv) gives the benefit of all doubts that TCR can somehow reach its exaggerated ridership projections.

Under either scenario, the deficit over 40 years will exceed \$10 billion. Both of these scenarios look 20 years into the future, so imagine the deficit TCR will run the first five years of the Project.

V. A Dallas-to-Houston Rail Line Has Never Been Designated as a Feasible Corridor for High-speed Rail.

In April 2009, the U.S. Department of Transportation (“USDOT”) released a strategic plan for implementing high-speed rail in the United States.¹²¹ In that document, titled “Vision for High-

¹²¹ Exhibit 16 attached.

Speed Rail in America,” USDOT identified 11 designated intercity corridors authorized by successive Secretaries of Transportation. Notably, a Dallas-to-Houston corridor *was not identified* by the USDOT as one of the possible strategic routes.

Consistent with the Vision for High-Speed Rail plan, on January 28, 2010, President Barack Obama and Vice President Joe Biden announced that USDOT was awarding \$8 billion to various states across the country to develop America’s first nationwide program of high-speed intercity passenger rail service.¹²² President Obama said the award “will serve as a down-payment on developing or laying the groundwork for 13 new, large-scale high-speed rail corridors across the country.”¹²³ Notably absent from the list of 13 proposed corridors was TCR’s proposed Dallas to Houston corridor.

In his address, President Obama also stated, “there’s no reason why Europe or China should have the fastest trains when we can build them right here in America.”¹²⁴ In fact, contrary to the Obama Administration’s stated “Buy America” policy, TCR’s train will not be built here. It will be built in Japan by Central Japan Railway Company (“CJRC”), then sold to TCR.¹²⁵ As a result, TCR’s Project undermines the President’s agenda of building high-speed trains here in the U.S.

VI. Significant Adverse Impacts Will Occur if the Exemption Were Granted.

A. Thousands of Texas land owners will be stripped of the peace and enjoyment of their property, and their property will be destroyed and devalued.

While TCR’s Project may benefit a very few number of individuals who wish to travel between Dallas and Houston in 90 minutes, those individuals’ interests and TCR’s are not the only

¹²² The White House, Office of the Press Secretary, <https://www.whitehouse.gov/the-press-office/president-obama-vice-president-biden-announce-8-billion-high-speed-rail-projects-ac>.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ Batheja, Aman and Smith, Stephen, *The Bullet Train That Could Change Everything*, August 18, 2014, <https://www.texastribune.org/2014/08/18/bullet-train-could-change-everything/>.

ones that matter. The interests of these very few must be considered weighed against the interests of the thousands who will experience traffic disruption and a frozen county road system, and the thousands of other Texans whose entire lives will be impacted by losing their land and the daily intrusion of 68 trains a day whizzing by their homes at 200 miles an hour. And while TCR paints a bright picture of supposed economic benefits, it has blatantly ignored the adverse economic and lifestyle interests of rural and small town residents, farmers, ranchers and businesses that are located along the barricade that its “closed system” will create. The more than 1,500 verified statements submitted by unfortunate Texans whose homes, farms, and ranches will be cut in half by this Project, the need for which has not been proven, are entitled to full consideration by the Board.¹²⁶ As their representative in this proceeding, TAHSR respectfully requests the Board to subject TCR’s Project to a rigorous “hard look” examination.

B. The Project will adversely impact counties and communities.

As demonstrated by the Replies filed by eight Texas counties along the corridor, the Project will have substantial adverse impacts on many aspects of the county road plan and county governance. These substantial concerns about how TCR will work with the county government, given its past behavior, has caused each County located between Dallas and Houston to voice its objections to both of TCR’s Petitions.¹²⁷

As one specific example, Grimes County, a rural Texas county along the proposed rail corridor, recently sued TCR and its consultant for nuisance as a result of TCR intentionally conducting unauthorized survey activities on county roads.¹²⁸ Grimes County is seeking an

¹²⁶ See Exhibit 3 to TAHSR’s Reply to Petition for Clarification.

¹²⁷ See Replies to Petition for Clarification filed by Ben Leman (Grimes County), Trey Duhon (Waller County), H. M. Davenport (Navarro County), Linda Grant (Freestone County), Carol Bush (Ellis County), Byron Ryder (Leon County), Carl Cannon (Madison County), Daniel Burkeen (Limestone County).

¹²⁸ Exhibit 17 attached.

injunction to prevent any further surveying on county property, and to retrieve the data TCR obtained through the unauthorized surveying.¹²⁹ If TCR is a scofflaw now when all regulatory eyes are watching, one can only imagine its conduct once it receives an exemption from regulation.

Finally, it is important to also note that while TCR keeps boasting about its “Brazos Valley stop,” the Brazos Valley Regional Planning Organization, in conjunction with the Brazos Valley Council of Governments, passed a resolution *opposing* the Project.¹³⁰ These entities, which TCR claims will benefit from having a stop in their region, believe the Project “will not meet the threshold of public benefit that historically justifies the use of eminent domain.”¹³¹

C. Regardless of the final route chosen, construction and operation of the Project will adversely affect the environment in the affected region.

First, construction of the Project will cause more pollution than it prevents because building a high-speed rail line and associated berms and crossings is very energy-intensive, creating an enormous carbon footprint. University of California Berkeley research concluded it would take 71 years for the California High-Speed Train to save enough greenhouse gasses to make up for the pollution caused during construction.¹³² Building a so-called “Green Train” is not really green. For TCR’s Project, it could take up to 50 years of operations (at near capacity) just to counter the carbon footprint released during the massive construction phase. Additionally, Projections by the California Air Resources Board bemoaned that the California High-Speed Train would only account for 1.5% of California’s goal for reducing emissions, and at a substantial cost.¹³³

¹²⁹ *Id.*

¹³⁰ Exhibit 18 attached.

¹³¹ *Id.*

¹³² Chester, Mikhail and Horvath, Arpad, *Life-cycle Assessment of High Speed Rail*, January 23, 2011, http://cta.ornl.gov/TRBenergy/trb_documents/2011_presentations/Chester%20Life-cycle%20Asmt%20High%20Speed%20Rail%20-%20Session%20118.pdf.

¹³³ California Air Resources Board, *Climate Change Proposed Scoping Plan*, December 2008, http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf, p. 56.

Second, TCR's train will be derive significant amounts of power from coal burning plants that rely on strip-mined, lignite coal. TCR has not even attempted to quantify the natural destruction caused by the additional strip-mining that will be need to meet its electricity demand.

Third, there will be substantial noise pollution, especially in the nine rural counties where the rail line does not make stops. Many of these counties and communities rely on livestock and agricultural use of their land. The noise pollution and vibrations created by construction and operation of the Project will negatively affect the agricultural use and possible result in panic flight of livestock (causing death or injury). TCR has no answer for the cattlemen who ask how are they supposed to herd cattle through a 14-foot pipe with a 200 mile-per-hour train zooming by from out of nowhere. In public meetings, TCR has refused to take any responsibility from injury, death or damages due to panic flight of livestock.

Fourth, wildlife will certainly be impacted. In the potentially affected corridor, TxDOT identified eleven birds, three plants, one amphibian, four reptiles, five fishes, four mollusks and one mammal on the federal- and state-protected species lists.¹³⁴ In addition, the affected region consists of prime hunting land. Deer and other wildlife are not going to come anywhere near the train, assuming hunting is allowed at all.

Finally, TCR's supposed environmental improvements are misleadingly based on comparisons between a completely full high-speed rail line and a Boeing 777. However, the airplanes that fly between Dallas and Houston are much smaller Boeing 737's, McDonnell

¹³⁴ Exhibit 19 attached. *Birds*: whooping crane, piping plover, interior least tern, wood stork, white-faced ibis, American peregrine falcon, bald eagle, red-cockaded woodpecker, Sprague's pipit, black-capped vireo, and golden-cheeked warbler. *Plants*: Navasota ladies-tresses, large-fruited sand verbena, Texas prairie dawn. *Amphibians*: Houston toad. *Reptiles*: Louisiana pine snake, timber rattlesnake, alligator snapping turtle, Texas horned lizard. *Fish*: blue sucker, creek chubsucker, smalleye shiner, sharpnose shiner, smalltooth sawfish. *Mollusks*: smooth pimpleback, Texas fawnsfoot, false spike, Texas heelsplitter. *Mammals*: Louisiana black bear.

Douglas MD 80 series-planes, Airbus A319 and A320 aircraft, or 50-75 seat regional jets. All of these aircraft emit significantly less carbon dioxide than a Boeing 777.¹³⁵ Moreover, Japanese trains operate with much higher passenger loads than the average TCR train is projected to carry.¹³⁶ Finally, it has been demonstrated that TCR has no real possibility of running its trains anywhere near capacity, which would negate any potential environmental benefit.

TCR continues to rely on disinformation. TCR has provided no data whatsoever to suggest that true environmental savings will take place, while all available data strongly suggests just the opposite.

VII. Fast-tracking the Petition Denies the Public the Opportunity to Meaningfully Comment and Participate, Despite No Real Urgency.

TCR has a motto on its website -- “We are determined that this project be an example of how big things can be done in a transparent way, the right way.”¹³⁷ Despite TAHSR’s best efforts, TCR refuses to live up to its motto, and continues to mislead and hide information from the public. And now, TCR is attempting to mislead and withhold information from this Board. If the Board will require TCR to file a full application and disclose objective, verifiable information regarding its Project, and allow for discovery and meaningful public comment, the Board will see for itself the disastrous failure for this Project.

Moreover, throughout its Petition (and its Petition for Clarification), TCR stresses the need to move this Project along as quickly as possible in order to meet “key milestones.” But this is no reason to speed such an important process along. It is not the Board’s fault, nor any of the

¹³⁵ Laherty, Paul, *Calculating Airplane CO2 Emissions*, January 10, 2015, <https://paullaherty.com/2015/01/10/calculating-aircraft-co2-emissions/>.

¹³⁶ Okada, Hiroshi, *30 Years of High-Speed Railways Features and Economic and Social Effects of The Shinkansen*, Japan Railway & Transport Review No. 3, pp. 9 –16.

¹³⁷ <http://www.texascentral.com/facts/>.

thousands of potentially affected landowners' fault, that TCR made promises it now appears unable to keep. The issue is whether the Board has sufficient information to make an informed decision at this time, and it is abundantly clear the Board does not.

TCR admits this is a “a project of national significance” and the “first of its kind” in the United States.¹³⁸ TCR also claims the Project “could transform how infrastructure projects of this kind are developed in the United States going forward.”¹³⁹ This is all the more reason for the Board to require a full application, rather than hastily signing off on an exemption without first taking a “hard look” at the Project.

CONCLUSION

Requiring TCR to file a full application under 49 U.S.C. §10901 is merely requiring TCR to do what is required of any new entity requesting authority to construct; that is, provide the Board with sufficient information regarding the Project so that it can make an informed decision. The basic information the Board requires in order to make such a decision is the same information TCR and its Japanese partners have been hiding from the public, and from the Texas landowners whose property they intend to take through eminent domain, for years. If the Board grants an exemption without requiring a full application, TCR may never disclose this critical information until it is too late.

TAHSR respectfully requests that the Board dismiss the Petition for lack of jurisdiction. However, if the Board determines it has jurisdiction, TAHSR requests that the Board dismiss the Petition for failure to submit supporting evidence, workpapers, and related documents. TAHSR further requests that the Board deny the Petition on the basis that the Board lacks sufficient

¹³⁸ Petition at 15-16.

¹³⁹ *Id.*

information to make an informed decision. Finally, TAHSR requests that the Board deny on the Petition on the merits because the Project is not in the public's interest.

Respectfully submitted,

/s/ Richard H. Streeter

Richard H. Streeter

rhstreeter@gmail.com

LAW OFFICE OF RICHARD H. STREETER

5255 Partridge Lane, N.W.

Washington, DC 20016

202-363-2011 (tel.)

202-363-2012 (fax)

Blake L. Beckham

blake@beckham-group.com

M. Patrick McShan

patrick@beckham-group.com

THE BECKHAM GROUP, P.C.

3400 Carlisle, Suite 550

Dallas, Texas 75204

214-965-9300 (tel.)

214-965-9301 (fax)

*Counsel for Texans Against High Speed
Rail, Inc.*

CERTIFICATE OF SERVICE

I hereby certify that I have served all parties of record in this proceeding with this document by United States mail or by e-mail on May 31, 2016.

/s/ Richard H. Streeter

Exhibit 1

PARCEL TX-HA-144.000
TX-HA-145.000

CAUSE NO. _____

TEXAS CENTRAL RAILROAD &
INFRASTRUCTURE, INC.
Plaintiff,

§
§
§
§
§
§
§
§
§
§

IN THE ____TH JUDICIAL DISTRICT COURT

VS.

HARRIS COUNTY, TEXAS

WILLIAM L. DERRINGTON AND
MICHELE DERRINGTON,
Defendants.

VERIFIED ORIGINAL PETITION
AND APPLICATION FOR INJUNCTIVE RELIEF

TO THE HONORABLE JUDGE OF SAID COURT:

Texas Central Railroad and Infrastructure, Inc. (“TCRI”) plans to construct the first high-speed passenger train in the United States, and will do so with exclusively private financing. As a railroad company and electric railway, TCRI has the absolute statutory right to examine and survey real property to determine the most advantageous route for its train, which will run between Dallas and Houston. Under the law, TCRI is not required to provide notice to landowners or to seek permission for surveying. That said, TCRI respects private property rights, is a responsible corporate citizen, and intends to establish a good working relationship with landowners. For these reasons, TCRI has sought written permission from landowners before entering any property to conduct the examination and surveying activities needed to determine the most advantageous route for its train.

Defendants William L. Derrington and Michele Derrington (referred to collectively as “Defendants”) have denied that TCRI has the statutory right to enter their property and have refused permission to do so. TCRI has determined that the safest, and most prudent course of

conduct, is to secure a temporary injunction that can leave no doubt of its right to enter Defendants' property to conduct examinations and surveys.

TCRI files this action because it has no adequate remedy at law for the relief it seeks. For more than 70 years, Texas courts have recognized that injunctive relief is an appropriate remedy when the right to examine and survey in advance of a project like TCRI's is being denied.¹

I. DISCOVERY LEVEL

1. TCRI pleads that discovery should be conducted in accordance with a discovery control plan Level 2, under Rule 190.3, Texas Rules of Civil Procedure.

II. PARTIES

2. Texas Central Railroad and Infrastructure, Inc. is a Texas Corporation licensed to do business in the State of Texas and is in the process of developing a high-speed rail line between Dallas and Houston, Texas. TCRI was chartered for the express purpose of planning, building, maintaining and operating an electric railroad.² TCRI is a railroad company, as that term is used in Section 112.051 *et. seq.* of the Texas Transportation Code, and an electric railway as that term is used in Section 131.012 *et. seq.* of the Texas Transportation Code. Accordingly, TCRI has been statutorily granted the right to "enter on the land or water of any person or corporation" in order to "have an examination and survey of its proposed railway made as necessary to select the

¹ *Lewis v. Tex. Power & Light Co.*, 276 S.W.2d 950, 954 (Tex. App.—Dallas 1955 writ ref'd n.r.e.); *see also Occidental Chem. Corp. v. ETC NGL Transp., LLC*, 425 S.W.3d 354, 363 (Tex. App.—Houston [1st Dist.] 2011, pet. dismiss'd) (holding that "Texas courts have also recognized that injunctive relief is appropriate in this specific context, i.e., to grant relief to an entity with the right to access land to conduct preliminary survey work before instituting a condemnation proceeding.").

² *See* Certificate of Amendment attached hereto as Exhibit "A."

most advantageous route” for its proposed railway.³

3. Defendants William L. Derrington and Michele Derrington are individuals who reside in Harris County, Texas and may be served with process at 12711 Magnolia Leaf St., Houston, Texas 77065-3363, or wherever they may be found.

III. JURISDICTION AND VENUE

4. This Court has jurisdiction over this case pursuant to TEX. CIV. PRAC. & REM. CODE § 65.021(a).

5. Venue is proper pursuant to TEX. CIV. PRAC. & REM. CODE § 15.016 and § 65.023(a) because the primary relief requested in this petition is injunctive in nature and the Defendants are domiciled in Harris County, Texas.

IV. TEXAS RULE OF CIVIL PROCEDURE 47 DISCLOSURE

6. This is an Application for Injunctive Relief in which TCRI does not seek monetary relief, but is seeking non-monetary relief.

V. STATEMENT OF FACTS

7. Defendants are the record owners of certain real property (the “Property”) located in Harris County, Texas more particularly depicted and described in the attached Exhibits “B” and “C.”

8. TCRI, along with its affiliated entities, is in the process of planning, surveying, and acquiring the right-of-way necessary for a 240 mile long high-speed rail line that will connect the two largest metropolitan areas in the State of Texas, with a planned intermediate stop to be located in Grimes County (the “Project”).

³ Tex. Trans. Code. Ann. § 131.013(b) (Vernon 2011); Tex. Trans. Code. Ann. § 112.051(a) (Vernon 2011).

9. This state of the art Project is expected to cost over 10 billion dollars to construct, take over 4 years to build, and ultimately provide world class transportation when it goes into service in late 2021.

10. Employing the N700-I bullet train technology, the Project will operate on a dedicated right-of-way that will be similar in width to that of a standard county road and, where possible, is being designed to parallel pre-existing rights-of-way.

11. Defendants' Property is one of the numerous individual properties that may be crossed by the Project.

12. The desktop design and planning stage for the Project has reached a point where actual access to the Property is necessary in order to determine the viability of the proposed route and the exact location it might take over the Property.

13. TCRI has engaged land surveyors to survey the Property in an effort to determine the exact route the proposed high-speed rail line may take over the Property, and to determine the legal boundaries of any right-of-way that TCRI may need to acquire.

14. TCRI also needs to examine the Property to determine if there are any cultural, environmental/wetlands, or topographical obstacles to construction.

15. Each of the aforementioned examinations and surveys are necessary in order for TCRI to select the most advantageous route for its high-speed rail line and to legally identify and define the right of way it will ultimately need to acquire from Defendants.

16. TCRI has repeatedly sought to coordinate its examination and survey activities with Defendants by entering into a voluntary access agreement that would allow TCRI to conduct the examination and surveying activities it is entitled to conduct under the law. Within those

agreements, and within this petition, TCRI acknowledges that it is statutorily responsible for any damages that may occur to the Property as a result of TCRI's examination and survey activities.⁴

17. Defendants have been unwilling to enter into a voluntary access agreement and have denied TCRI access to the Property. Defendants are thus preventing TCRI from completing the examination and surveying activities that need to be conducted in order for the Project to move forward.

18. Due to the lineal and interrelated nature of the Project, TCRI's failure to legally identify and finalize the route on the Property places the ultimate design and acquisition of the Project in jeopardy.

VI. TCRI IS STATUTORILY ENTITLED TO EXAMINE AND SURVEY PROPERTY

19. Two separate statutes provide TCRI with the power to conduct the examinations and surveys necessary to determine the most advantageous route for its proposed high-speed rail line. Specifically, Section 131.013(b) of the Texas Transportation Code provides that an electric railway such as TCRI may:

(1) have an examination and survey of its proposed railway made as necessary to select the most advantageous route; and

(2) for the purposes of Subdivision (1), enter on the land or water of any person or corporation, subject to responsibility for all damages that may be caused by the entrance, examination, or survey.

20. Likewise, Section 112.051(a) of the Texas Transportation Code provides that a railroad company "is entitled to make an examination and survey for the company's proposed railway, to be performed as necessary to select the most advantageous route for the proposed railway, and,

⁴ Tex. Trans. Code. Ann. § 131.013(b) (Vernon 2011); Tex. Trans. Code. Ann. § 112.051(b) (Vernon 2011).

subject to Subsection (c), may enter on the lands or waters of any person or corporation for that purpose.”⁵

21. Aside from the express statutory right, Texas courts have conclusively established that entities vested with the power of eminent domain, such as TCRI⁶, have the right to enter onto private property in order to conduct examinations and surveys, and have consistently granted injunctive relief to preserve and protect this legal right.⁷ For over 70 years, courts have held that the status quo in these instances is “one of action, not of rest.”⁸ A diligent search of Texas authorities has not disclosed a single case in which a condemning authority (of any kind) was denied injunctive relief to conduct lineal surveys or environmental examinations.

⁵ Tex. Trans. Code. Ann. § 112.051(a) (Vernon 2011).

⁶ TCRI is vested with the right of eminent domain under Sections 131.012 and 112.053 of the Texas Transportation Code.

⁷ See *Lewis v. Tex. Power & Light Co.*, 276 S.W.2d 950, 954 (Tex. App.—Dallas 1955, writ ref’d n.r.e.) (upholding injunction allowing surveys to move forward and holding that the term “enter on” as used in Section 181.004 of the Texas Utilities Code recognized the necessity of preliminary surveys and was intended to grant authority to conduct the same); *Coastal Marine Serv. of Tex., Inc. v. City of Port Neches*, 11 S.W.3d 509 (Tex. App.—Beaumont 2000, no pet.) (upholding injunction and allowing for environmental examinations); *I.P. Farms v. Exxon Pipeline Co.*, 646 S.W.2d 544, 545 (Tex. App.—Houston [1st Dist.] 1982, no writ) (ancillary to eminent domain power is the authority to enter upon the land to make a preliminary survey); *Puryear v. Red River Auth.*, 383 S.W.2d 818, 820-21 (Tex. Civ. App.—Amarillo 1964, writ ref’d n.r.e.); *Hicks v. Tex. Municipal Power Agency*, 548 S.W.2d 949, 955 (Tex. App.—Houston [14th Dist.] 1977, writ ref’d n.r.e.) (“[g]enerally, courts have upheld the right of a governing body vested with condemnation power to enter into lands for the purpose of a preliminary survey either by express statutory grant or by implication”); *In re Energy Transfer Fuel, L.P.*, 298 S.W.3d 357, 358 (Tex. App.—Tyler 2009, no writ) (acknowledging that a gas corporation with the power of eminent domain had the right to enter upon property to make preliminary surveys of proposed routes).

⁸ See *Lewis v. Tex. Power & Light Co.*, 276 S.W.2d at 955; *Coastal Marine Serv. of Tex., Inc. v. City of Port Neches*, 11 S.W.3d at 515.

VII. APPLICATION FOR TEMPORARY INJUNCTIVE RELIEF

22. In order to preserve the status quo, and to protect TCRI's statutory legal right to access Defendants' Property to conduct the examinations and survey activities necessary for TCRI's proposed high-speed rail line, it is essential that the Court set this matter for hearing prior to Defendants' answer date. Defendants should be cited to appear and show cause why a temporary injunction should not issue enjoining Defendants and those acting by or at Defendants' direction from taking any further action interfering with TCRI's right to conduct examinations and surveys. As set forth herein, all prerequisites to temporary injunctive relief have been satisfied.

A. Statutory grounds.

23. Pursuant to Section 65.011(1) of the Texas Civil Practice and Remedies Code, injunctive relief is appropriate when the applicant is entitled to the relief sought and such relief requires the restraining of some act prejudicial to the applicant.⁹ As a matter of law, TCRI is entitled to enter upon the Property to conduct examinations and surveys and Defendants should be restrained from interfering with TCRI's exercise of this legal right.

B. Equitable grounds.

24. Defendants' wrongful conduct in preventing TCRI from having unimpeded access to the Property also entitles TCRI to common law injunctive relief as more fully explained below.

(i) **Wrongful Act.** TCRI is entitled to injunctive relief since it has demonstrated one or more wrongful acts committed by Defendants. TCRI has requested that Defendants allow TCRI entry onto the Property to conduct examinations and surveys necessary to select the most advantageous route for its Project. Defendants refuse to grant TCRI permission to enter onto the Property for these purposes, despite TCRI's legal right to do so.

⁹ Tex. Civ. Prac. & Rem. Code § 65.011(1); see *Coastal Mar. Serv. v. City of Port Neches*, 11 S.W.3d 509, 515 (Tex. App.—Beaumont 2000, no pet.).

(ii) **Probable Right to Relief.** TCRI is entitled to injunctive relief since it has demonstrated a probable right to the relief sought upon final hearing. As set out more specifically above, TCRI is statutorily and legally entitled to enter Defendants' Property for the purposes of conducting examinations and surveys associated with its proposed high-speed rail line. Defendants have refused to allow the requested examinations and surveys, and are therefore denying the exercise of TCRI's legal rights without good cause.

(iii) **Probable Injury.** TCRI is entitled to injunctive relief since it has shown it will suffer probable injury by establishing: (1) imminent harm; (2) irreparable injury; and (3) no adequate remedy at law.

(1) **Imminent Harm.** An injunction is proper when the harm sought to be prevented is imminent or immediate.¹⁰ TCRI has requested entry upon the Property in order to conduct the examinations and surveys needed for its proposed high-speed rail line. Without access to the Property to conduct these examinations and surveys, the planning and other preliminary activities associated with the proposed high-speed rail line (much less the actual acquisition of right-of-way or construction of the railroad) cannot continue. By denying TCRI the right to exercise its statutory right to conduct the requisite examinations and surveys, Defendants are causing current and actual harm to TCRI.

(2) **Irreparable Injury.** An injunction is proper when the harm sought to be prevented is irreparable. Irreparable injury has been defined as an injury that cannot be compensated in damages, or an injury that results in damages that cannot be measured by any pecuniary

¹⁰ *Crawford Energy, Inc. v. Texas Indust.*, 541 S.W.2d 463, 467 (Tex. Civ. App.—Dallas 1976, no writ).

standard.¹¹ TCRI's purpose for seeking entry to the Property is to perform examinations and surveys that will allow it to determine a suitable location and establish legal boundaries for the proposed high-speed rail line discussed above. Until those examinations and surveys are performed, it is impossible to determine the location of the railroad, the area to be encumbered by the right-of-way, the legal boundaries of any proposed right-of-way, or the feasibility of construction given the natural and cultural resources that may exist on the Property. Without examination and survey of the Property, the proposed high-speed rail line project will be indefinitely suspended—causing monetary damages that cannot be adequately measured or easily calculated, as well as damages to TCRI's operations, goodwill, and reputation that cannot be monetarily measured at all. Conversely, enforcement of TCRI's statutory right to enter the Property and conduct these preliminary surveys will cause no harm and minimal inconvenience to Defendants.¹² Furthermore, to the extent that any damage is caused to Defendants' Property,

¹¹ *Pipkin v. JVM Oper., L.C.*, 197 B.R. 47, 55 (E.D. Tex. 1996) (holding irreparable injury where economic damage is difficult to calculate, as where party will incur injury to its operations, reputation, and goodwill); *Cho v. Itco, Inc.*, 782 F. Supp. 1183, 1185 (E.D. Tex. 1991) (finding threat of losing customer goodwill may constitute irreparable harm); *Assoc. Gen. Contract v. City of El Paso*, 932 S.W.2d 124, 126 (Tex. App.—E1 Paso 1996, no writ); *Canteen Corp. v. Republic of Texas Properties, Inc.*, 773 S.W.2d 398, 401 (Tex. App.—Dallas 1989, no writ); see also *Estate of Dilasky*, 972 S.W.2d 763, 767 (Tex. App.—Corpus Christi 1998, no writ) (costs and delay may be factors of irreparable harm); *Liberty Mut. Ins. Co. v. Mustang Tractor & Equip. Co. & Eureka Investment Co.*, 812 S.W.2d 663, 666 (Tex. App.—Houston [14th Dist.] 1997, no writ) (disruption of business can be irreparable harm).

¹² See *Lewis*, 276 S.W.2d at 955-56 (“the trial court no doubt weighed the relative convenience and inconvenience and the comparative injuries to the parties and to the public which would arise from the granting or refusal of this temporary injunction, and found the equities to lie with Appellee [utility company]. There can be little if any doubt that Appellee under the facts shown in this record is entitled to acquire easement rights over the Appellant's land, either by voluntary conveyance or by condemnation. That being so, the injuries suffered by Appellant from the survey will be small compared with the injuries suffered by the Appellee and the public if Appellee were denied the right to proceed with its preliminary survey...”).

TCRI is statutorily required to compensate Defendants for those damages.¹³

(3) **No Adequate Remedy at Law.** A party is entitled to injunctive relief when there is no adequate remedy at law.¹⁴ For a remedy to qualify as being adequate, it must give the plaintiff complete, final, and equal relief.¹⁵ If damages cannot be calculated for the harm complained of, or if the defendant will be unable to pay damages, there is no adequate remedy at law.¹⁶ Defendants' action in obstructing TCRI from completing its examinations and surveys on the Property effectively prevent TCRI from moving forward with the Project. TCRI cannot identify any impediments to the proposed route or the proposed right-of-way which it would seek to purchase from the Defendants without first conducting the necessary examinations and surveys required—actions that will cause no harm to Defendants, but which Defendants refuse to allow TCRI to perform. No amount of monetary damages can cure Defendants' denial of access complained of herein. Assuming for arguments sake that monetary damages could somehow be calculated, they would be in the billions of dollars—amounts that Defendants undoubtedly could not pay.¹⁷ Accordingly, TCRI has no adequate remedy at law.

(iv.) **Bond.** TCRI will post a reasonable bond as set by the Court in this case.

¹³ Tex. Trans. Code. Ann. § 131.013(b) (Vernon 2011); Tex. Trans. Code. Ann. § 112.051(b) (Vernon 2011).

¹⁴ *Fasken v. Darby*, 901 S.W.2d 591, 592 (Tex. App.—El Paso 1995, no writ).

¹⁵ *See Henderson v. KARTS, Inc.*, 822 S.W.2d 769, 773 (Tex. App.—Houston [1st Dist.] 1992, no writ).

¹⁶ *Texas Indus. Gas v. Phoenix Metallurgical Corp.*, 828 S.W.2d 529, 533 (Tex. App.—Houston [1st Dist.] 1992, no writ).

¹⁷ *Tel. Equip. Network, Inc. v. TA/Westchase Place, Ltd.*, 80 S.W.3d 601, 611 (Tex. App.—Houston [1st Dist.] 2002, no pet.).

VIII. PERMANENT INJUNCTION

25. TCRI further requests that the Court, after trial is completed, enter a permanent injunction against Defendants and those acting in concert with them, enjoining Defendants from interfering with TCRI's right to conduct the examinations and surveys necessary to select the most advantageous route for TCRI's proposed high-speed rail line.

IX. PRAYER FOR RELIEF

WHEREFORE, PREMISES CONSIDERED, Plaintiff Texas Central Railroad and Infrastructure, Inc. respectfully requests the following relief:

1. That Defendants be cited to appear and show cause and that upon such hearing, a temporary injunction be issued restraining the Defendants, their agents, servants, employees, and assigns, and anyone else working in active concert or participation with them, from directly or indirectly impeding or interfering in any way with access on and across the Property by TCRI, its agents, employees, operators, surveyors, and engineers for the purposes of conducting examinations and surveys of the Property in connection with the proposed high-speed rail line and proposed easement and right-of-way across the Property and further restraining Defendants from removing or in any way tampering with the stakes and markers placed upon the Property by the survey crews during the pendency of this action;

2. That a permanent injunction be issued prohibiting Defendants, their agents, servants, employees, and assigns, and anyone else working in active concert or participation with them, from directly or indirectly impeding or interfering in any way with access on and across the Property by TCRI, its agents, employees, operators, surveyors, and engineers for the purposes of conducting examinations and surveys of the Property in connection with the proposed high-speed rail line and proposed easement and right-of-way across the Property and

further restraining Defendants from removing or in any way tampering with the stakes and markers placed upon the Property by the survey crews; and

3. Such other and further general relief, at law or in equity, to which it may be entitled.

Respectfully submitted,

/s/ Robert B. Neblett
JACKSON WALKER L.L.P.
100 Congress Avenue, Suite 1100
Austin, Texas 78701
512-236-2000
Fax No. 512-236-2002
Robert B. Neblett III—14849300
rneblett@jw.com
Brad Anderson—24055106
banderson@jw.com
Susan Dillon Ayers—24028302
sayers@jw.com

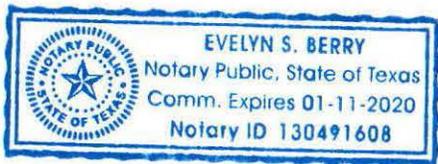
JACKSON WALKER L.L.P.
1401 McKinney Street, Suite 1900
Houston, Texas 77010
713-752-4200
Fax No. 713-752-4221
Scott R. McLaughlin - 00791234
smclaughlin@jw.com

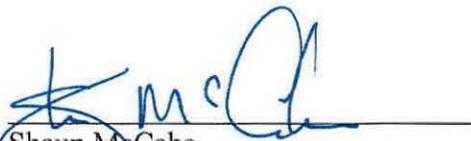
ATTORNEYS FOR PLAINTIFF TEXAS
CENTRAL RAILROAD &
INFRASTRUCTURE, INC.

VERIFICATION

STATE OF TEXAS §
 §
COUNTY OF DALLAS §

Shaun McCabe, Vice President for Texas Central Railroad & Infrastructure, Inc. being duly sworn, states that he has read the foregoing Plaintiff's Verified Original Petition and Application for Injunctive Relief, and that the factual statements set forth therein are true and correct based upon either personal knowledge or information obtained from the records attached hereto, upon which information he relies, and that he reserves the right to amend the aforesaid petition if it should appear at any time that omissions or errors have been made, or that additional or more accurate information has been obtained.




Shaun McCabe
Vice President
Texas Central Railroad & Infrastructure, Inc.

Subscribed and sworn to before me this 4th day of April, 2016, to certify which witness my hand and official seal of office.

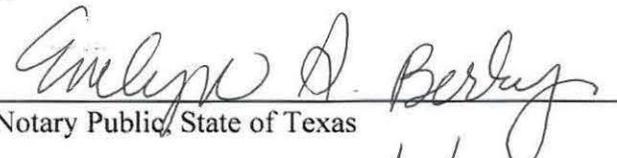

Notary Public, State of Texas
My Commission Expires: 01/11/2020

EXHIBIT “A”



Office of the Secretary of State

The undersigned, as Secretary of State of Texas, does hereby certify that the attached is a true and correct copy of each document on file in this office as described below:

Texas Central Railroad & Infrastructure, Inc.
Filing Number: 801704184

Certificate of Amendment

January 21, 2015

In testimony whereof, I have hereunto signed my name officially and caused to be impressed hereon the Seal of State at my office in Austin, Texas on March 30, 2016.



A handwritten signature in black ink, appearing to read "Cascos" followed by a horizontal line.

Carlos H. Cascos
Secretary of State

Form 424
(Revised 05/11)

Submit in duplicate to:
Secretary of State
P.O. Box 13697
Austin, TX 78711-3697
512 463-5555
FAX: 512/463-5709
Filing Fee: See instructions



Certificate of Amendment

This space reserved for office use.

FILED
In the Office of the
Secretary of State of Texas

JAN 21 2015

Corporations Section

Entity Information

The name of the filing entity is:

TXHS Railroad, Inc.

State the name of the entity as currently shown in the records of the secretary of state. If the amendment changes the name of the entity, state the old name and not the new name.

The filing entity is a: (Select the appropriate entity type below.)

- | | |
|--|---|
| <input checked="" type="checkbox"/> For-profit Corporation | <input type="checkbox"/> Professional Corporation |
| <input type="checkbox"/> Nonprofit Corporation | <input type="checkbox"/> Professional Limited Liability Company |
| <input type="checkbox"/> Cooperative Association | <input type="checkbox"/> Professional Association |
| <input type="checkbox"/> Limited Liability Company | <input type="checkbox"/> Limited Partnership |

The file number issued to the filing entity by the secretary of state is: 801704184

The date of formation of the entity is: 12/20/2012

Amendments

1. Amended Name

(If the purpose of the certificate of amendment is to change the name of the entity, use the following statement)

The amendment changes the certificate of formation to change the article or provision that names the filing entity. The article or provision is amended to read as follows:

The name of the filing entity is: (state the new name of the entity below)

Texas Central Railroad & Infrastructure, Inc.

The name of the entity must contain an organizational designation or accepted abbreviation of such term, as applicable.

2. Amended Registered Agent/Registered Office

The amendment changes the certificate of formation to change the article or provision stating the name of the registered agent and the registered office address of the filing entity. The article or provision is amended to read as follows:

Registered Agent

(Complete either A or B, but not both. Also complete C.)

A. The registered agent is an organization (cannot be entity named above) by the name of:

OR

B. The registered agent is an individual resident of the state whose name is:

<i>First Name</i>	<i>M.I.</i>	<i>Last Name</i>	<i>Suffix</i>
-------------------	-------------	------------------	---------------

The person executing this instrument affirms that the person designated as the new registered agent has consented to serve as registered agent.

C. The business address of the registered agent and the registered office address is:

<i>Street Address (No P.O. Box)</i>	<i>City</i>	<i>State</i>	<i>Zip Code</i>
		TX	

3. Other Added, Altered, or Deleted Provisions

Other changes or additions to the certificate of formation may be made in the space provided below. If the space provided is insufficient, incorporate the additional text by providing an attachment to this form. Please read the instructions to this form for further information on format.

Text Area (The attached addendum, if any, is incorporated herein by reference.)

Add each of the following provisions to the certificate of formation. The identification or reference of the added provision and the full text are as follows:

Alter each of the following provisions of the certificate of formation. The identification or reference of the altered provision and the full text of the provision as amended are as follows:
 Article 5 - Purpose is amended and restated in its entirety to read as follows:
 "The purpose for which the corporation is organized is to plan, build, maintain and operate an interurban electric railroad, and to conduct or promote any other lawful businesses or purposes that a corporation is legally allowed to conduct or promote, within this state or any other jurisdiction."

Delete each of the provisions identified below from the certificate of formation.

Statement of Approval

The amendments to the certificate of formation have been approved in the manner required by the Texas Business Organizations Code and by the governing documents of the entity.

Effectiveness of Filing (Select either A, B, or C.)

- A. This document becomes effective when the document is filed by the secretary of state.
- B. This document becomes effective at a later date, which is not more than ninety (90) days from the date of signing. The delayed effective date is: _____
- C. This document takes effect upon the occurrence of a future event or fact, other than the passage of time. The 90th day after the date of signing is: _____

The following event or fact will cause the document to take effect in the manner described below:

Execution

The undersigned signs this document subject to the penalties imposed by law for the submission of a materially false or fraudulent instrument and certifies under penalty of perjury that the undersigned is authorized under the provisions of law governing the entity to execute the filing instrument.

Date: _____

By: _____



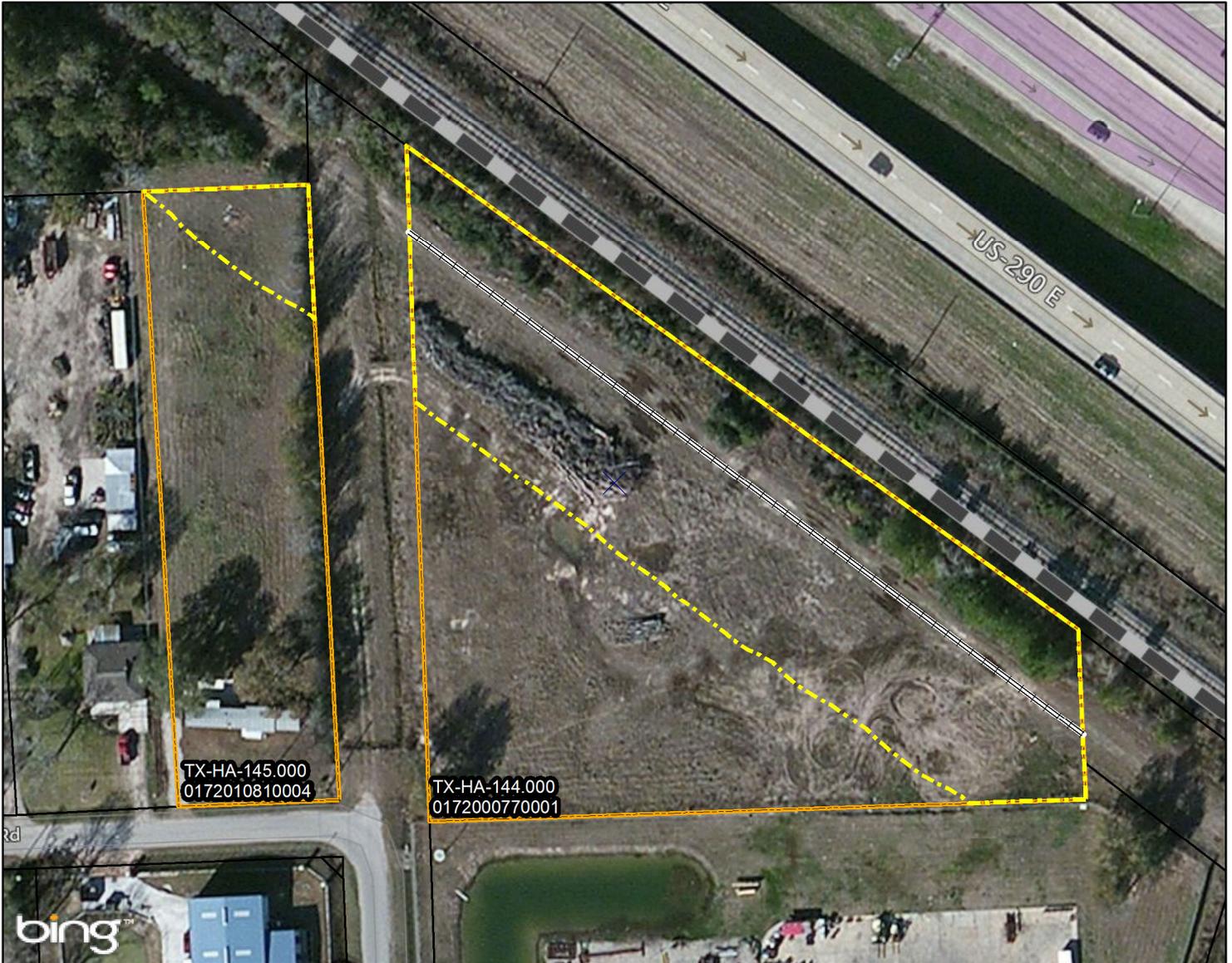
Signature of authorized person

Mark M. Walker

Printed or typed name of authorized person (see instructions)

EXHIBIT “B”

**TRACTS TO BE SURVEYED
HARRIS COUNTY, TX**



ROW LENGTH: 582.444 FT.
TRACT ACREAGE: 5 AC.
RIGHT OF WAY: 1.95 AC.
TEMPORARY WORKSPACE: 0 AC.

AREAL CALCULATIONS AND LINEAR DISTANCES WERE CALCULATED USING: NAD1983 (2011) STATE PLANE ZONE TEXAS S CENTRAL FIPS 4204 (US FEET)

TRACT NO.:

TX-HA-144.000, TX-HA-145.000



**TEXAS
CENTRAL
RAILROAD &
INFRASTRUCTURE**

TEXAS CENTRAL RAILROAD & INFRASTRUCTURE INC.

OWNER NAME:

WILLIAM L. DERRINGTON AND
MICHELE DERRINGTON, HUSBAND
AND WIFE

==== ALIGNMENT

--- RIGHT OF WAY

TEMPORARY WORKSPACE

PROPERTY BOUNDARIES

ADJACENT PROPERTY BOUNDARIES

THIS MAP IS FOR INFORMATION PURPOSES. DISTANCES IN THIS MAP ARE APPROXIMATIONS ONLY AND SHOULD NOT BE USED FOR AUTHORITATIVE DEFINITION OF LEGAL BOUNDARY OR PROPERTY TITLE.

EXHIBIT “C”



Owner and Property Information	
Owner Name & Mailing Address:	DERRINGTON WILLIAM L & MICHELE 12711 MAGNOLIA LEAF ST HOUSTON TX 77065-3363
Legal Description:	ALL BLK 77 HOUSTON HOT WELLS
Property Address:	0 SPRING BL HOUSTON TX 77433

State Class Code				Land Use Code		
C3 -- Real, Vacant Lots/Tracts (Not in City)				1000 -- Residential Vacant		
Land Area	Total Living Area	Neighborhood	Neighborhood Group	Market Area	Map Facet	Key Map®
161,172 SF	0 SF	14	4103	227 -- ISD 04 - Far West, South of US 290/North of FM 529	4665C	367L

Value Status Information

Capped Account	Value Status	Notice Date	Hearing Status	Shared CAD
No	Noticed	4/3/2015	Protest Received	No

Exemptions and Jurisdictions

Exemption Type	Districts	Jurisdictions	ARB Status	2014 Rate	2015 Rate
None	004	CYPRESS-FAIRBANKS ISD	Not Certified	1.440000	
	040	HARRIS COUNTY	Not Certified	0.417310	
	041	HARRIS CO FLOOD CNTRL	Not Certified	0.027360	
	042	PORT OF HOUSTON AUTHY	Not Certified	0.015310	
	043	HARRIS CO HOSP DIST	Not Certified	0.170000	
	044	HARRIS CO EDUC DEPT	Not Certified	0.005999	
	045	LONE STAR COLLEGE SYS	Not Certified	0.108100	
	633	HC EMERG SRV DIST 9	Not Certified	0.060000	

Valuations

Value as of January 1, 2014			Value as of January 1, 2015		
	Market	Appraised		Market	Appraised
Land	80,613		Land	80,613	
Improvement	0		Improvement	0	
Total	80,613	80,613	Total	80,613	80,613

Land

Market Value Land												
Line	Description	Site Code	Unit Type	Units	Size Factor	Site Factor	Appr O/R Factor	Appr O/R Reason	Total Adj	Unit Price	Adj Unit Price	Value
1	1000 -- Res Vacant Table Value	SF5	SF	43,560	1.00	1.00	0.65	Shape or Size	0.65	1.90	1.24	53,797.00
2	1000 -- Res Vacant Table Value	SF3	SF	117,612	1.00	0.50	0.25	--	0.13	1.90	0.24	27,933.00

Building

Vacant (No Building Data)												
---------------------------	--	--	--	--	--	--	--	--	--	--	--	--

HARRIS COUNTY APPRAISAL DISTRICT
 REAL PROPERTY ACCOUNT INFORMATION
 0172010810004

Tax Year: 2015



Owner and Property Information	
Owner Name & Mailing Address:	DERRINGTON WILLIAM 12711 MAGNOLIA LEAF ST HOUSTON TX 77065-3363
Legal Description:	LT D BLK 81 HOUSTON HOT WELLS
Property Address:	17102 LEWIS DR HOUSTON TX 77433

State Class Code				Land Use Code		
A2 -- Real, Residential, Mobile Homes				1001 -- Residential Improved		
Land Area	Total Living Area	Neighborhood	Neighborhood Group	Market Area	Map Facet	Key Map®
49,223 SF	1,120 SF	14	4103	227 -- ISD 04 - Far West, South of US 290/North of FM 529	4665C	367L

Value Status Information				
Capped Account	Value Status	Notice Date	Hearing Status	Shared CAD
No	Noticed	4/20/2015	Protest Received	No

Exemptions and Jurisdictions					
Exemption Type	Districts	Jurisdictions	ARB Status	2014 Rate	2015 Rate
None	004	CYPRESS-FAIRBANKS ISD	Not Certified	1.440000	
	040	HARRIS COUNTY	Not Certified	0.417310	
	041	HARRIS CO FLOOD CNTRL	Not Certified	0.027360	
	042	PORT OF HOUSTON AUTHY	Not Certified	0.015310	
	043	HARRIS CO HOSP DIST	Not Certified	0.170000	
	044	HARRIS CO EDUC DEPT	Not Certified	0.005999	
	045	LONE STAR COLLEGE SYS	Not Certified	0.108100	
	633	HC EMERG SRV DIST 9	Not Certified	0.060000	

Value as of January 1, 2014			Value as of January 1, 2015		
	Market	Appraised		Market	Appraised
Land	88,144		Land	88,144	
Improvement	1,856		Improvement	1,856	
Total	90,000	90,000	Total	90,000	90,000

Land												
Market Value Land												
Line	Description	Site Code	Unit Type	Units	Size Factor	Site Factor	Appr O/R Factor	Appr O/R Reason	Total Adj	Unit Price	Adj Unit Price	Value
1	1001 -- Res Improved Table Value	SF5	SF	43,560	1.00	1.00	1.00	--	1.00	1.90	1.90	82,764.00
2	1001 -- Res Improved Table Value	SF3	SF	5,663	1.00	0.50	1.00	--	0.50	1.90	0.95	5,380.00

Building						
Building	Year Built	Type	Style	Quality	Impr Sq Ft	Building Details
1	1971	Residential Mobile Homes	Single Wide Residential Mobile Home	Low	1,120 *	Displayed

* All HCAD residential building measurements are done from the exterior, with individual measurements rounded to the closest foot. This measurement includes all closet space, hallways, and interior staircases. Attached garages are not

TX-HA-145.000

included in the square footage of living area, but valued separately. Living area above *attached* garages is included in the square footage living area of the dwelling. Living area above *detached* garages is not included in the square footage living area of the dwelling but is valued separately. This method is used on all residential properties in Harris County to ensure the uniformity of square footage of living area measurements district-wide. There can be a reasonable variance between the HCAD square footage and your square footage measurement, especially if your square footage measurement was an interior measurement or an exterior measurement to the inch.

Building Details (1)

Building Data	
Element	Detail
Cond / Desir / Util	Average
Foundation Type	Crawl Space
Grade Adjustment	D
Heating / AC	Central Heat/AC
Physical Condition	Average
Exterior Wall	Aluminum / Vinyl
Element	Units
Room: Full Bath	2
Room: Bedroom	3
Room: Total	5

Building Areas	
Description	Area
MOBILE HOME 12-14 Width	1,120

Building Features	
Description	Units
PATIO	1

Exhibit 2



Statewide Ridership Analysis Report

Statewide Analysis Model –Version
2.5 (SAM-V2.5)

December 2013

Contents

Version History.....	i
Executive Summary	i
1.0 Introduction and Purpose.....	1
2.0 Overview of Model Development.....	2
Expansion to Five states	5
Data Updates	6
Use of ALPS Data	8
Validation	9
Sensitivity Testing	10
3.0 Levels-of-Service Assumptions and Forecast Alternatives	14
Evaluation of City Pairs	14
Service Level Criteria Assumptions	31
4.0 Cost Effectiveness Analysis	34
Development of Cost Estimates	34
Corridor Cost Effectiveness Analysis Results	44
5.0 System Optimization Analysis	49
Analysis Approach / Methodology	50
Results	53
6.0 Ridership Probability Analysis.....	60
Approach and Key Assumptions	60
Distribution Fitting Results	69
7.0 Summary of Results.....	75
Appendices	
Appendix A - Matrix of City Pairs and Service Level Assumptions	
Appendix B – Probability Analysis of Cost Estimates Technical Memorandum	
Appendix C – Cost Effectiveness Analysis Technical Memorandum	
Appendix D – System Optimization Analysis Technical Memorandum	
Appendix E – Probability Analysis Technical Memorandum	
Appendix F – Optimized Dallas/ Fort Worth to Houston and Dallas/ Fort Worth to San Antonio Model Results	

Version History

Release Date	Version Number	Description
December 12, 2013	1.0	Original Submission
December 13, 2013	1.1	Revised draft to include requested mode share data
December 23, 2013	1.2	Revised draft submittal to address comments received

Executive Summary

The Statewide Ridership Analysis was completed to provide a high level evaluation of forecasted ridership and cost effectiveness for various corridors in the state in order to determine which corridors may warrant further analysis, should funding become available, and what level(s) of service may be supported by the different corridors. The analysis included stakeholder coordination throughout the state, analysis of transit connectivity in urban areas and intercity travel demand as part of the development of the ridership model, the Statewide Analysis Model Version 2.5 (SAM-V2.5). The SAM-V2.5 provides the framework to estimate intercity passenger rail ridership for various corridors throughout Texas as well as to certain cities located in neighboring states.

The development of the SAM-V2.5 included updating the existing TxDOT Statewide Analysis Model (SAM V2), which is used by the State to analyze and forecast passenger and freight travel throughout the state, in order to better address the passenger rail travel mode and to expand the model, which was previously limited to Texas boundaries, to also include the immediate surrounding states of Louisiana, Arkansas, Oklahoma, and New Mexico.

Potential intercity passenger rail city pairs evaluated in the Statewide Ridership Analysis were determined based on an evaluation of population, corridor distance, and existing travel demand. The city pairs were evaluated for three different levels of service, based on the definitions contained in the National High Speed Rail Strategic Plan, summarized below.

- Core Express Service
 - Maximum speeds between 125 and 250 mph
 - Frequent, express service between major population centers 200 to 600 miles apart with few, if any, intermediate stops
- Regional Service
 - Maximum speeds between 90 and 125 mph
 - Relatively frequent service between major and moderate population centers 100 to 500 miles apart with some intermediate stops
- Emerging/ Feeder
 - Maximum speeds up to 90 mph
 - Developing corridors of 100 to 500 miles, with strong potential for future regional or core express service
 - Located primarily on shared track with existing rail lines

The various city pairs and associated levels of service evaluated in this analysis are shown in Figure 1.

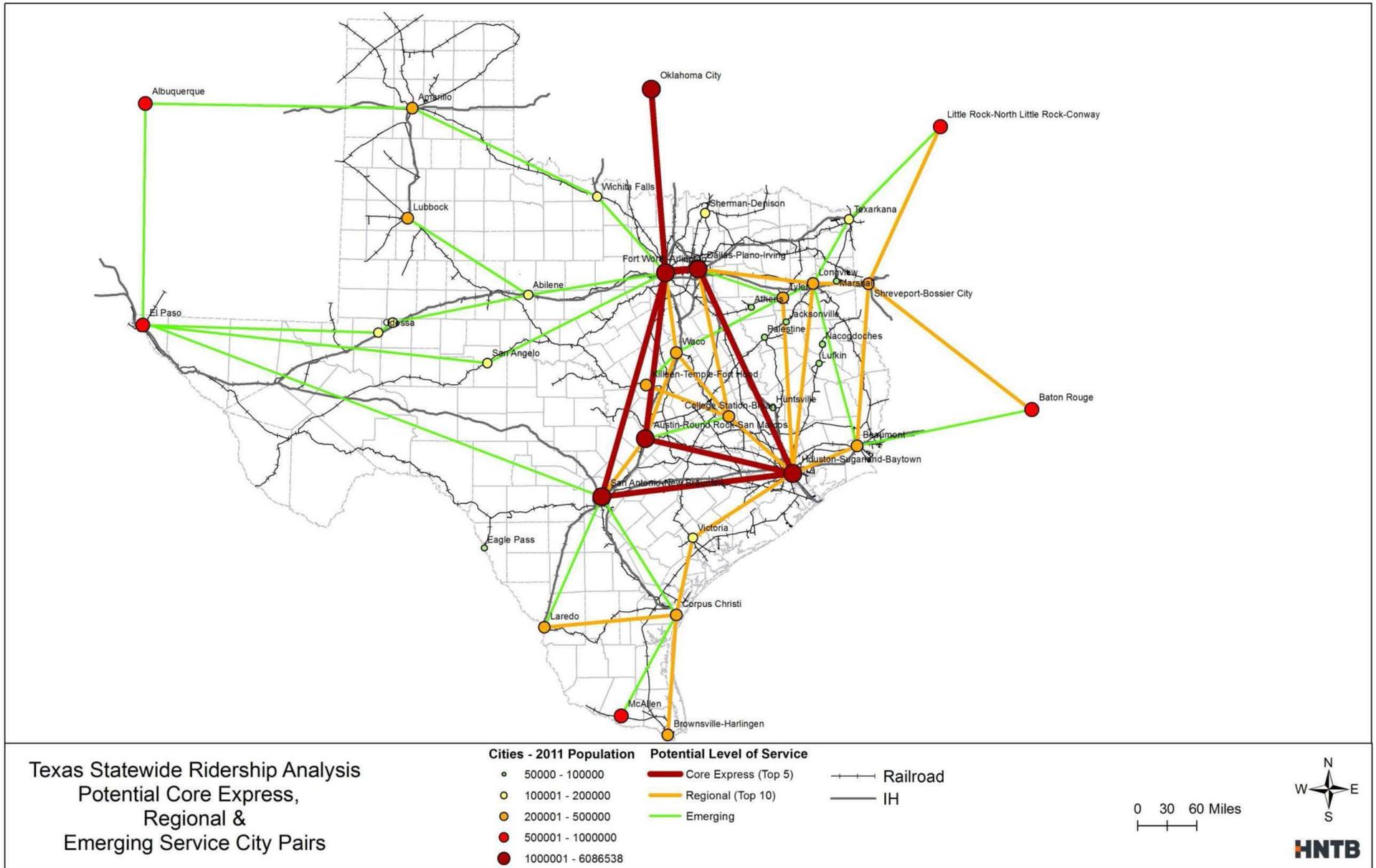


Figure 1: Potential Corridors for Core Express, Regional, and Emerging Service

The model was then used as part of a cost effectiveness analysis of the potential passenger rail corridors to obtain travel demand model output values, revenue from fares and time savings (user benefit hours) associated with the potential intercity passenger rail service. The cost effectiveness of the potential passenger rail corridors was evaluated based on the cost recovery ratio (annual revenue from fares divided by annual operating and maintenance costs) and the cost per hour of user benefit (time savings).

Lastly, a probability analysis was performed for the estimates of capital and annual operating and maintenance costs, as well as for the forecasted ridership for the corridors evaluated in the model. The results of the probability analysis allowed the cost estimates and ridership forecasts to be reported in ranges, rather than single point estimates. The probability analysis addressed the uncertainties in estimated costs and forecasted ridership that are inherent to a statewide high-level study of this nature where there are still many unknowns that would need to be further evaluated and clarified in more in-depth corridor level studies.

The analysis was not intended to provide a detailed ridership analysis of any individual corridor, since many assumptions were applied to all of the corridors statewide and would need to be modified to more accurately reflect the characteristics of any particular corridor. However, care was taken to account for the variability and uncertainty in the forecasted ridership results produced as reported in ranges shown in Table 1.

Table 1 shows the summary ridership results for the corridors evaluated in the Statewide Ridership Analysis that were determined to meet minimum cost effectiveness requirements for each service level as defined by the cost recovery ratio (annual revenue from fares divided by annual operating and maintenance expenses) thresholds listed below:

- Core Express Service – 100%
- Regional Service – 75%
- Emerging Service – 50%

Table 1: Forecasted 2035 Intercity Passenger Rail Ridership Summary Results¹²

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Core Express Service				
Austin	Houston	\$11B	\$125M	1.1M – 4.1M
Houston	San Antonio	\$13.3B	\$152M	0.8M – 3.1M
Dallas	Houston	\$16.8B	\$266M	1.5M – 5.7M
Dallas	Austin	\$15.2B	\$273M	0.8M – 2.9M
Fort Worth	Houston	\$19B	\$301M	1.5M – 5.8M
Dallas	San Antonio	\$20.7B	\$351M	1.7M – 6.5M
Dallas	Oklahoma City	\$15.5B	\$177M	0.5M – 1.8M
DFW/ Airport	Houston	\$17.4B	\$276M	1.5M – 5.4M
Regional Service				
Waco	Houston	\$6.3B	\$91M	1.1M – 3.7M
Fort Worth	Bryan-College Station	\$6.8B	\$97M	0.7M – 2.3M
Houston	Killeen	\$6.6B	\$94M	0.7M – 2.3M
Emerging Service				
Waco	Houston	\$3.1B	\$19M	0.3M – 1.5M
Tyler	Houston	\$4.6B	\$27M	0.3M – 1.5M
Killeen	Houston	\$3.5B	\$20M	0.2M – 0.9M
Fort Worth	Bryan-College Station	\$3.4B	\$20M	90K – 0.5M

¹ Dallas/ Fort Worth region to Houston and Dallas to San Antonio corridor results shown in Table 36 are based on the optimized model runs performed with decreased fares to account for competitive air fares in those corridors rather than federal mileage rate fares utilized for other corridors.

² Forecasted passenger rail ridership reported does not include induced ridership.

The ridership forecasts shown in Table 1 are based on the corridors being implemented singularly, and do not account for the corridors acting as part of a system. A Core System was evaluated by combining high-performing individual corridors based on professional judgment and the rankings from the travel market and cost effectiveness analyses. The Core System is shown in Figure 2 and the resulting performance of the Core System is summarized in Table 2.

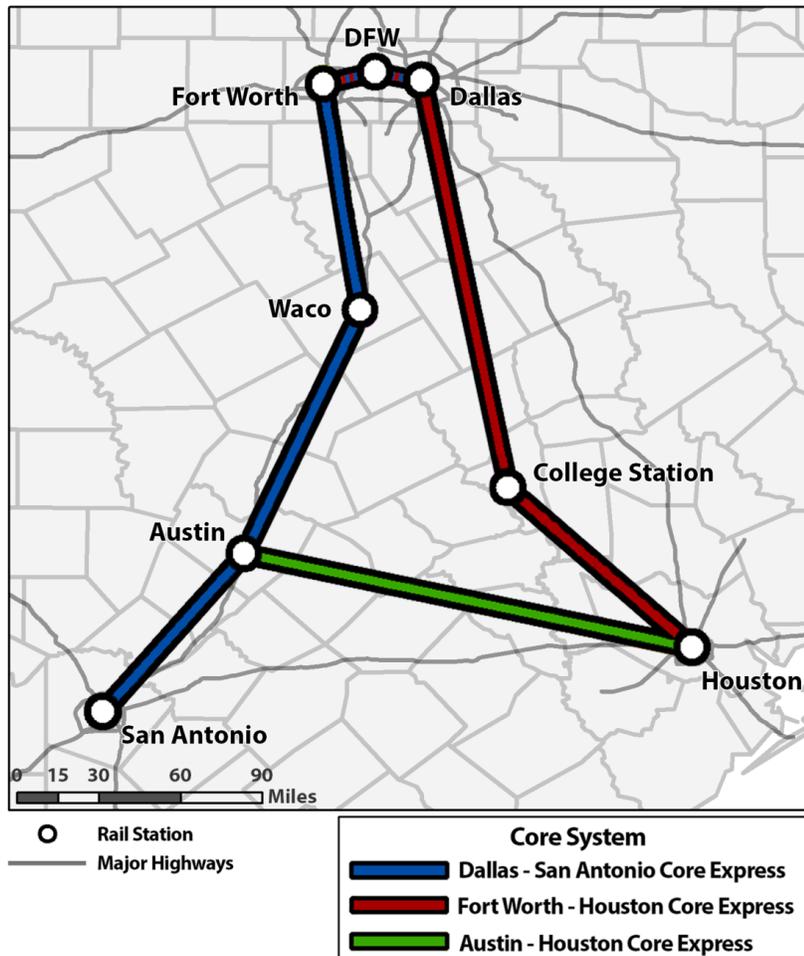


Figure 2: Core System Route Concept

Table 2: Core System Performance Measures³

Performance Measure	Upfront Capital Cost	2035 Annual Ridership
System Total	\$48.5	4.3M – 16.4M
Total Revenue: Dallas – San Antonio Core Express	\$20.7B	1.7M – 6.5M
Total Revenue: Fort Worth – Houston Core Express	\$16.8B	1.5M – 5.8M
Total Revenue: Austin – Houston Core Express	\$11B	1.1M – 4.1M

After the Core System was run, additional corridors were added iteratively to the Core System to create new candidate systems. When run together in various combinations as part of a system, the results generally showed that while each additional corridor had its own independent utility, the addition of new corridors to the system caused the cost effectiveness of the system to decrease due to higher system costs and somewhat redundant services. For example, the decrease in forecasted ridership and revenue along the Austin to Houston corridor resulting from adding the San Antonio to Houston corridor and the overall significant reduction in the system cost recovery ratio implies that the two core express corridors are somewhat redundant. Similar results were found for the Waco to Houston and the Killeen to Houston corridors.

Additionally, there were negligible transfers between the Dallas/ Fort Worth to Houston and the Dallas/ Fort Worth to San Antonio corridors. This is due to the nature of the geography for those two corridors, which essentially form the sides of a triangle. For example, the cost and trip time required to get between Houston and Waco would not be competitive via transfer between the two core express routes (going through Dallas/ Fort Worth) as compared to either driving or flying directly between the two cities. As a result, there was little system effect to the individual corridor ridership of including these two corridors together in a system. However, the ridership was increased by combining the Austin to Houston and Dallas/ Fort Worth to San Antonio corridors in a system, as there were transfers between those two routes. In conclusion, a “triangle system” causes little increase to corridor ridership forecasts, while a “T” system would experience greater transfers and resulting increases to individual corridor ridership forecasts.

³ Dallas/ Fort Worth region to Houston and Dallas to San Antonio corridor results shown in Table 39 are based on the optimized model runs performed with decreased fares to account for competitive air fares in those corridors rather than federal mileage rate fares utilized for other corridors.

1.0 Introduction and Purpose

The Statewide Ridership Analysis was completed in order to develop a Statewide Passenger Rail Ridership Model that provides the framework to estimate intercity passenger rail ridership for various corridors throughout Texas as well as to certain cities located in the adjacent states of Louisiana, Arkansas, Oklahoma, and New Mexico. The analysis included stakeholder coordination throughout the state, analysis of transit connectivity in urban areas and intercity travel demand as part of the development of the ridership model, the Statewide Analysis Model Version 2.5 (SAM-V2.5).

The statewide model is intended to provide a high level evaluation of ridership and cost effectiveness for various corridors in order to determine which corridors may warrant further analysis, should funding become available, and what level(s) of service may be supported by the different corridors. The model also provides the framework that can be efficiently modified for use in a corridor level ridership model, rather than having to create a new model from scratch for every individual corridor. Assumptions for inputs impacting ridership (e.g., fare, travel speeds, access and egress times at airports and rail stations, etc.) were developed as described in this report and used consistently for all of the corridors evaluated. Corridor-specific characteristics that may impact the inputs utilized in the ridership model, and therefore the forecasted ridership, would need to be evaluated in individual corridor level studies. Additionally, the model does not include corridor alignments for the passenger rail routes, but rather consists of a nodal analysis of ridership based on various levels of service (i.e., speed, frequency, etc.) for intercity passenger rail between specified cities.

The development of the SAM-V2.5 included updating the existing TxDOT Statewide Analysis Model (SAM V2), which is used by the State to analyze and forecast passenger and freight travel throughout the state, in order to better address the passenger rail travel mode and to expand the model, which was previously limited to Texas boundaries, to also include the immediate surrounding states of Louisiana, Arkansas, Oklahoma, and New Mexico.

The model was then used as part of a cost effectiveness analysis of the potential passenger rail corridors to obtain travel demand model output values, revenue from fares and time savings (user benefit hours) associated with the potential intercity passenger rail service. The cost effectiveness of the potential passenger rail corridors was evaluated based on the cost recovery ratio (annual revenue from fares divided by annual operating and maintenance costs) and the cost per hour of user benefit (time savings).

Lastly, a probability analysis was performed for the estimates of capital and annual operating and maintenance costs, as well as for the forecasted ridership for the corridors

evaluated in the model. The results of the probability analysis allowed the cost estimates and ridership forecasts to be reported in ranges, rather than single point estimates. The probability analysis addressed the uncertainties in estimated costs and forecasted ridership that are inherent to a statewide high-level study of this nature where there are still many unknowns that would need to be further evaluated and clarified in more in-depth corridor level studies.

2.0 Overview of Model Development

The SAM-V2.5 is a traditional four-step model with trip generation, trip distribution, mode choice, and trip assignment. The SAM-V2.5 was developed, calibrated, and validated for a base year of 2010 and forecast year of 2035. Trip generation, trip distribution, and mode choice are separate models for passenger and freight travel. The SAM-V2.5 was designed to assign the following modes of travel to their respective network layers:

- Highway (passenger and truck),
- Passenger rail, and
- Freight rail.

For highway assignment, the passenger and freight model outputs are combined to allow for a joint assignment of passenger vehicles and trucks to the highway network. This is relevant for passenger traffic, as the freight volumes impact traffic flow. The resulting congestion affects passenger volumes on the highway, which can ultimately impact the attractiveness of passenger rail as a mode of travel.

Several modifications were made to the SAM during model development to update the model for use in the Statewide Ridership Analysis. For the SAM-V2.5, the main efforts were focused on the refinement of the mode choice model developed in the SAM-V2. Based on a review of other inter-regional models and special needs for the policy analysis of HSR, one of the refinements was the addition of egress modes in the transit skim process, and the mode choice model structure. To further analyze the competition among HSR and air travel, reliability measures were added to the utility function for rail and air modes. The impact of frequency of service and convenience of departure time on mode choice were also investigated. In addition, different scenarios for out-of-vehicle travel time constraints were explored, including reasonable wait time and realistic out-of-vehicle travel time were explored. In comparison to the SAM-V2, version 2.5 includes the following enhancements:

- Expanded five state study area
- Updated Passenger mode choice

- Updated 2010 demographics

The following sections summarize the development, validation, and testing of the SAM-V2.5. Additional details about the model development can be found in the Model Development Report.

Trip Generation

Trip generation, which is the first of the four primary steps in the travel demand modeling process, produces a set of trip productions (origins) and trip attractions (destinations) for each traffic analysis zone (TAZ) by trip purpose.

The production rates for the SAM-V2.5 were derived using *2009 National Household Travel Survey* (NHTS) data, more specifically, the 20,000 sample add-on surveys sponsored by TxDOT. Trip rates are for motorized person trips. Passenger trip productions are stratified by:

- Four household size categories,
- Four income categories, and
- Eight area type categories.

Both the household size and income stratifications were determined using *2000 Census Transportation Planning Package* (CTPP) data.

Trip attractions were estimated from workplace surveys conducted in four urban areas in the state and the *2009 NHTS*. Attraction rates were estimated by area type, employment type, income group, and trip purpose. The stratification by income group was included to allow income segments to be maintained throughout the model stream for use in the traffic assignment step. This stratification allows for more accurate analysis of toll facilities and more detailed interpretation of mode choice utilities.

Trip Distribution

Trip distribution, which is the second step in the traditional four-step model, takes the production and attraction trip ends developed during trip generation and connects them in origin-destination pairs based on the trip length frequency curves for each trip purpose. A traditional gravity model with calibrated friction factors by trip purpose is utilized for trip distribution in SAM-V2.5. Trip lengths are expressed in minutes or miles and are derived from the *NHTS*. Separate distribution models are run for the income segments within each trip purpose.

Mode Choice

Mode choice, which is the third step in the travel demand modeling process, uses production and attraction person trip tables produced by the trip distribution program, combined with traveler characteristics, origin and destination data from the TAZ layer, and zone-to-zone travel impedances to allocate the trips to the available modes of travel. The SAM-V2.5 passenger mode choice model is structured as a nested logit model. The mode choice models are structured in a manner similar to many urban models in which peak travel times are used for work-related trip purposes and mid-day travel times are used for non-work related trip purposes. This structure allows one mode choice model to be run for each trip purpose. The time of day step takes place after mode choice, thus avoiding the running of four mode choice models for each trip purpose. Trips can be forecast for auto drivers, auto passengers, intercity rail passengers, high-speed rail passengers, and air passengers.

Freight Models

The units of measurement for the productions and attractions at the origin and destination of freight trips are expressed in annual tonnage for 15 commodity types. An incremental logit choice model produces flow tables for the 15 distinct commodity types considered in SAM-V2.5. Modes include truck, carload rail, and intermodal rail. The baseline for applying the increments is a Texas-focused TRANSEARCH database purchased by TxDOT.

While the freight rail and passenger rail modes are separate within the SAM-V2.5 architecture, the freight models can still have an impact on passenger rail. For highway assignment, the passenger and freight model outputs are combined to allow for a joint assignment of passenger vehicles and trucks. The freight vehicles (trucks) and passenger vehicles combine to affect traffic flow and increase travel delay due to congestion on the highway facilities, which can ultimately impact the passenger rail volumes.

Assignment

Trip assignment, the final step in the travel demand process, assigns trips to the highway network. In SAM-V2.5, the passenger and freight highway trips are combined and assigned using a multi-class highway assignment procedure. The model is designed to perform at the daily (i.e., 24-hour) level and also has the flexibility to examine four distinct time periods: AM Peak, Mid-Day, PM Peak, and overnight. Toll analysis is handled with a generalized cost function during traffic assignment. Daily flows of truck tonnages are converted to freight trucks for assignment purposes using payload factors for each commodity group.

The SAM-V2.5 is designed to apply multiple volume delay functions (VDFs) varied by functional classification, and to account for both link and intersection delay. This approach

allows the attributes of specific types of roadways to impact how quickly delay builds up, and for the assignment to be influenced by both link delay, and delay experienced at intersections regulated by traffic control devices (i.e., signals and stop signs). A set of VDF parameters was developed for different facility types and traffic control methods.

The SAM-V2.5 feeds the congested highway travel times produced in the traffic assignment step back to the trip distribution model. The feedback procedure uses the method of successive averages (MSA) with convergence based on changes in link volumes between iterations.

Expansion to Five states

The SAM-V2.5 passenger models were expanded to cover Texas' four neighboring states - Louisiana, Arkansas, Oklahoma and New Mexico in order to support the TxDOT passenger rail study. The passenger model expansion involves the following components:

- Zonal structure and network
- Demographics estimates and forecasts
- Household sub-models and household regional distribution
- Special generators
- Externals
- Addition of egress and modes in the transit skimming process and the mode choice model structure
- Addition of reliability measures in the utility function for rail and air modes
- Investigating the impact of frequency of service and convenience of departure time on mode choice

The zonal structure, network and demographics are the required inputs for the expanded model area, which is described in detail in the other model reports. The household sub-models in the original SAM-V2 passenger models were developed solely based on Texas demographic data. This data was not necessary to best fit the expanded five state area and therefore the household sub-models and regional household distribution were re-estimated for the five state area using the American Community Survey (ACS) data. The special generators are identified for the four neighboring states using the same criteria as SAM-V2. The expansion inevitably brings change to the external stations. The external stations in the original SAM-V2 model are now internal zones and new external stations were identified for the new boundary of the five-state model area. In addition, due to data limitations and the

new characteristics of the External-to-External trips for the five-state area compared to SAM-V2, the methodology for estimating external trips was revised.

Because the neighboring four states did not participate in the 2009 NHTS add-on program and the national sample for the four states did not provide enough detail to analyze the trip characteristics that were modeled by the SAM-V2, the Texas daily travel patterns were applied to the expanded model area.

Data Updates

Multiple components of the SAM-V2.5 model were updated with current data sources. The sections below describe several of these updates.

Socioeconomic Data

The socioeconomic data serves both the passenger and freight trip generation models. Employment data is maintained at the two-digit North American Industry Classification System (NAICS) level except for the manufacturing sector, where employment is maintained at the three-digit NAICS level.

Forecast years for the socioeconomic data included in the standard distribution of the model include 2010, 2020, 2030, and 2035. The processes used to estimate population and employment variables at the SAM-V2.5 TAZ level were all based on the US Census year 2000 block geography data. The socioeconomic base year and forecast data for all five states were updated using data from:

- U.S. Decennial Censuses
- U.S. Census Bureau's American Community Survey (ACS)
- Individual Metropolitan Planning Organization (MPO) Population and Employment Forecasts
- U.S. Census Bureau's County Business Patterns (CBP)
- U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW)
- U.S. Bureau of Economic Analysis' Regional Economic Information System (REIS)
- Texas Workforce Commission (TWC)
- LEHD Origin-Destination Employment Statistics (LODES)
- Woods & Poole 2010 Complete Economic and Demographic Data Source (CEDDS)

Networks

A master network geography is maintained for all years and modes. Individual years or mode networks (e.g. rail) can be extracted, enabled, or disabled with selection sets depending on needs. The following mode-specific networks are contained within the master network layer:

- Roadway,
- Passenger rail,
- Passenger air routes,
- Passenger high-speed rail,
- Freight rail, and
- Freight waterways.

The following elements of the SAM-V2.5 network were revised for the Statewide Ridership Analysis.

Road Network

- Posted Speed: Recent speed limit changes on Texas interstates and freeways
- Future Projects: Major existing and future roadway projects from TX, AR, LA, NM, and OK
- HOV/HOT Lanes: HOV and HOT lanes from the Houston and Dallas metropolitan areas
- Toll Roads: Toll rates on existing and future roadways
- Grade Separations: Grade separated intersections in AR, LA, NM, and OK
- Traffic Counts: Internal and External Annual Average Daily Traffic (AADT) and Automatic Vehicle Classification (AVC) traffic counts in TX, AR, LA, NM, and OK

Other Modal Networks

- Intercity Passenger Rail: Amtrak routes added in TX, AR, LA, NM, and OK
- Urban Passenger Rail: Urban rail routes added in TX, AR, LA, NM, and OK
- High Speed Passenger Rail: High speed rail routes added in TX, AR, LA, NM, and OK
- Air Routes: Air routes added in TX, AR, LA, NM, and OK

Additional detail about these modifications can be found in the Model Development Report.

Use of ALPS Data

The SAM-V2.5 model uses the Advanced Land-Transportation Performance Simulation (ALPS) model to better define the urban area interfaces and conditions. This was accomplished by using the ALPS results designed and output to be compatible with the SAM-V2.5 to:

- Review the reasonableness of air passenger activity estimates at airports with the data produced from flight schedule processing performed in support of ALPS.
- Review and refine the urban passenger rail facilities (i.e., routes and stops) input into the SAM-V2.5 using urban passenger rail route information output from ALPS with the goal of improving the correlation of passenger activity in the peak and off-peak time periods.
- Review travel to/from intercity passenger rail intermodal stations and airports, which represent travel time and cost parameters associated with the access and egress components of a trip within the terminal or station property.

Specifically, regarding the components of travel within or at terminals and stations, ALPS data was used to confirm and verify input assumptions in a few ways:

- The Houston airport distribution of processing time through airport functional areas (as in the Table below from the HGAC ALPS report) was used to derive part of out-of-vehicle time as mode choice inputs. Similar tables for airports of different sizes are available from additional ALPS reports.

Table 1: HOU Airport Distribution of Processing Time through Airport Functional Areas

Originating Passengers		Terminating Passengers	
Process	Time (min.)	Process	Time (min.)
Parking/Access	13.4	Exit Plane/Secure Area	16.7
Ticketing	20.2	Baggage Claim	25
SSCP	33.6	Parking/Egress	13.9
Gate Area/Boarding	67.2	Total	55.5
Total	134.4		

- The parking cost assumptions made by ALPS at airports and rail stations were reviewed.

Additional information about the use of the ALPS models in the SAM-V2.5 development can be found in the ALPS Model Development Report.

Validation

Validation refers to the process of using a calibrated model to estimate travel for the base year and then comparing the model's output to observed travel data. The validation of the SAM-V2.5 included the validation of passenger trip generation, passenger trip distribution, passenger mode choice, and passenger and freight trip assignment for all modes of transportation. However, during SAM-V2.5 development, all steps of the freight model were independently validated as well.

Care was taken with each model step to ensure that the Travel Demand Model maintains a high level of predictive value. To this end, the model contains no subjective adjustment factors. All changes and adjustments to model parameters were performed in a comprehensive and systematic manner, and were applied uniformly and consistently across the entire model. The resulting model provides a realistic and reliable predictor of magnitude and pattern of future travel in Texas and surrounding states. It should serve as a useful and informative tool for performing travel forecasts and analyses of proposed transportation projects.

Trip Generation

Trip rates were calculated from the *2009 National Household Travel Survey (NHTS) Texas* add-on sample and urban area household surveys, as reported in *Urban Travel in Texas* (Texas Transportation Institute, The Texas A&M University System, 1996), which were utilized in trip generation validation. The percentage of trips by seven trip purposes estimated for the SAM was compared to the percentage reported in the *NHTS* and *Urban Travel in Texas*.

Trip Distribution

The primary method used to validate the trip distribution model is to compare the trip length by trip purpose and income group between the model and the observed data. The trip length is checked for time (in minutes) across all trip purposes and income groups.

Mode Choice

Validation and reasonableness checking of mode choice models involves comparison of mode shares by trip purpose produced by the SAM-V2.5 to observed survey data through the use of the 2009 *NHTS* data.

Trip Assignment

Validation of the model to observed flows is important to the modeling effort in two regards. First, the validation shows whether the calibration tools used in the model process and assumptions were reasonable. Second, the validation shows what level of confidence the user can have in the forecast results.

The typical comparison for highway validation, when sufficient data is available, is between highway traffic assignments and actual traffic volumes derived from traffic count data. A similar measure, vehicle miles of travel (VMT), is calculated from the same traffic counts and the length of the roadway on which the count is located. Extensive traffic counts were available to validate the SAM-V2.5.

The model validation procedure used for the SAM-V2.5 was similar to the procedure used by state DOTs and MPOs throughout the country. The locations of year 2010 traffic counts provided by the TxDOT were coded to the roadway networks. Traffic assignment results for the validation year (2010) were compared to these traffic counts by three indices: Percent of Count, Correlation Coefficient, and Percent Root Mean Squared Error (%RMSE), each of which was aggregated and tabulated across a variety of categories. Percent of Count was used to measure the overall difference between modeled and counted flows. The Correlation Coefficient estimated the correlation between the actual ground counts and the estimated traffic volumes. Percent Root Mean Squared Error (%RMSE) was used to measure the difference between modeled flows and counted volumes on a link-by-link basis, which gave a better picture of the “closeness” between model flows versus counts.

The assignment of high speed intercity passenger rail trips within the SAM-V2.5 were not specifically examined during the validation process. The validation process compares the model output for the base year to existing count data. Because there are no existing high speed intercity passenger rail facilities within the SAM-V2.5 study area in 2010, no high speed intercity passenger rail facilities were specifically validated. However, substantial sensitivity testing and probability analysis were conducted to ensure that the high speed intercity passenger rail ridership results were realistic and reasonable.

Sensitivity Testing

To carry out the sensitivity analysis, a series of travel demand model runs were conducted using the draft SAM-V2.5. The initial round of sensitivity tests was run using the 2010 model Base Year, with a surrogate, or straw man, high speed intercity passenger rail service component incorporated into the existing transportation system. Once the battery of sensitivity tests for level-of-service variables had been completed for the Base Year

condition, an additional test to examine model performance in a forecast year was conducted to examine responses in model performance to changes in model inputs.

Using the Base Year as the test case allowed for initial testing of model sensitivity without the bias that could be introduced by forecasting methodology or other factors such as inflation rates or discount rates.

Results and Relationships of Variables

Sensitivity testing was conducted for the intercity passenger rail level of service attributes later described in section 2 of this report in order to evaluate the attributes' relative elasticity. This testing was done to evaluate the potential impact of changes in the level of service parameters, and to evaluate the reasonableness and validity of the SAM-V2.5 mode choice model.

Elasticity Analysis

Following the mathematical derivation of the elasticity for the independent variables in the SAM-V2.5 passenger mode choice model, the direct elasticity and cross-elasticity were calculated with respect to each independent variable.

Direct elasticity values are interpreted as the percent effect that a 1% change in the independent variable has on the likelihood of a specific alternative being chosen. If the computed elasticity is less than one, then the variable is said to be inelastic because a 1% change will result in less than 1% of the change in the probability of choosing the specific alternative. If the elasticity is greater than one, then the variable is said to be elastic because a 1% change in the variable will result in more than 1% of change in the probability of choosing the specific alternative.

The cross-elasticity measures the change on a variable resulting from a 1% change in a different, related variable. If the computed cross-elasticity is negative, it means that the two alternatives are complementary; if the computed cross-elasticity is positive, it means the two alternatives are substitutive.

Model Runs

To check the reasonableness and sensitivity of the SAM-V2.5 prediction on mode choice, four scenarios were run with different settings provided by the project team on the potential intercity passenger rail routes. The following table briefly describes and compares the differences in the four test scenarios.

Table 2: Modeling Scenarios

Scenario	Passenger Rail Routes	Fare	Avg. Speed
High Fare 2010	3	Highest (comparable to AIR)	150 mph
Low Fare 2010	3	Lowest (comparable to Drive Alone)	150 mph
Mid-Range 2010	3	Medium (federal mileage route * route distance)	80 mph
High Fare 2035	3	Highest (comparable to AIR)	150 mph

All mode shares were compared to the adjustments to the intercity passenger rail service levels and the results were analyzed to determine what impact the intercity passenger rail service levels have on mode shift by determining which modes were most and least sensitive to the intercity passenger rail mode. The results from this general comparison appear reasonable, which indicates the current mode choice model performs as intended.

Corridor Level Comparison

Finally, the sensitivity tests were evaluated at the corridor level. These sensitivity tests used the results from the SAM-V2.5 model runs in each of the four scenarios previously described to evaluate the impact of the shift in mode share in response to intercity passenger rail level of service modifications at a more aggregate level with a mixture of Origin/Destination (OD) pair characteristics and travel demand. Several corridors, listed below, were included in the sensitivity testing.

- Dallas- Fort Worth to Houston
- Dallas- Fort Worth to Austin
- Dallas- Fort Worth to Oklahoma City
- Dallas- Fort Worth to San Antonio
- Austin to San Antonio
- Dallas- Fort Worth to Killeen/Temple
- College Station to Houston

The results of the model runs were again compared to the adjustments to the HSR corridors to determine the impact of the shift in mode share. The results of this analysis reflected what was seen in the elasticity analysis and reflected the stability of the mode choice model performance across scenarios.

Conclusions

Based on the previous findings in the sensitivity analysis, the mode choice model appears to be sensitive to changes in modal scenarios, and is performing well. However, the model can be further refined to enhance the model's predictive capabilities, as well as to provide additional sensitivity to some market segments. Additional details about the model development can be found in the Model Development Report.

3.0 Levels-of-Service Assumptions and Forecast Alternatives

The origin and destination cities (city pairs), as well as the level of service characteristics for the various corridors to be analyzed in the Statewide Ridership Model, were determined using the methodology outlined as follows.

Evaluation of City Pairs

The methodology used to determine the city pairs to be analyzed in the Statewide Ridership Model began with a review of previous studies conducted that identify and prioritize potential passenger rail corridors in Texas. The three primary works referenced to develop the city pairs are briefly summarized below.

Potential Development of an Intercity Passenger Transit System in Texas, Texas Transportation Institute (TTI), February 2010

The TTI report discusses existing transit services in Texas and identifies and ranks 18 potential intercity corridors for passenger rail services. The analysis focused on current and future demographic projections, projected future demand, current transportation network capacity, and intercity roadway, air, bus, and rail travel, and weighted all evaluation factors equally when applying a ranking to each corridor. Order-of-magnitude construction costs were also calculated for each corridor for speeds up to 79 MPH, 110 MPH, and greater than 110 MPH; these costs were not included as part of the ranking analysis.

Of the 18 city pairs, the Dallas-Fort Worth to San Antonio and the Dallas-Fort Worth to Houston corridors were considered the priority corridors based on rankings. The next highest-ranked corridors included Dallas-Fort Worth to El Paso via Abilene, Dallas-Fort Worth to Lubbock via Abilene, Houston to Austin, and Houston to Beaumont. The lowest-ranked corridors included Amarillo to Midland/Odessa via Lubbock and San Antonio to Brownsville via Corpus Christi.

Performance Measures for Prioritizing Passenger Rail in Texas, Center for Transportation Research (CTR), January 2010

The CTR report specifies seven specific performance measures for evaluating passenger rail in Texas: travel demand, capacity, diversified investment, travel time, route planning, intermodal, and environment/land use. These particular performance measures were developed through federal and state governments as well as organizations with interest in proposed intercity passenger rail systems.

Travel demand for the cities within the Texas Triangle region formed by Dallas-Fort Worth, Houston, and San Antonio (including Austin and Waco) seemed the most likely to have sufficient ridership for successful passenger rail service, according to the study. Similarly, the implementation of passenger/high-speed rail service in the Texas Triangle region could provide additional capacity for roadway and airports that are anticipated to be overburdened

operationally, as well as the potential for air/rail integration. Travel times based on the Texas TGV project for high-speed rail in the Texas Triangle generally appear to be more efficient than automobile but not as efficient as air travel, the exceptions being in the Austin – San Antonio corridor.

America 2050: Where High Speed Rail Works Best, September 2009

The America 2050 report, *Where High Speed Rail Works Best*, defines and ranks the corridors most appropriate for high-speed rail based on the greatest ridership demand between city pairs within the United States. The city pairs were evaluated based on metropolitan size, distance between the cities, available transit connectivity, economic productivity, and congestion. The Dallas to Houston corridor was ranked 10th and the Austin to Dallas corridor was ranked 45th in terms of the greatest demand for a high speed rail system based on the following factors.

- Metropolitan size - High speed rail systems located in major metropolitan areas have higher travel demand.
- Distance - The evaluation prioritized city pairs that were 200 to 300 miles apart based on the assumption that longer distances are more efficiently traveled by air and shorter distances are better travelled by automobile.
- Transit Connections - “High-speed rail systems will attract greater numbers of riders if they begin and end in central locations within the metro region and tie seamlessly into existing commuter rail and transit systems.”
- Economic Productivity - “High-speed rail systems depend heavily on business travel to sustain ridership and business travel is highest in places with more productive economies.”
- Congestion - Congestion reduction at airports and on highways is a goal for building high speed rail lines.

Statewide Ridership Analysis Methodology

The methodology for this study utilized the common measures of population, travel demand, and corridor distance from the studies listed above to evaluate the potential city pairs. The TTI study utilized population as well as travel demand; the CTR study identified travel demand and travel time (as a function of distance); and the America 2050 study looked at metropolitan size and distances.

The city pairs analyzed in the Statewide Ridership Model were evaluated independently for three different levels of service, based on the definitions contained in the National High Speed Rail Strategic Plan as summarized below.

- Core Express Service

- Maximum speeds between 125 and 250 mph
- Frequent, express service between major population centers 200 to 600 miles apart with few, if any, intermediate stops
- Located on dedicated right of way, with the exception of potential shared use tracks in terminal urban areas
- Fully grade-separated corridor
- Regional Service
 - Maximum speeds between 90 and 125 mph
 - Relatively frequent service between major and moderate population centers 100 to 500 miles apart with some intermediate stops
 - Located on some dedicated and some shared use track, generally following existing rail corridors
- Emerging/ Feeder
 - Maximum speeds up to 90 mph
 - Developing corridors of 100 to 500 miles, with strong potential for future regional or core express service
 - Located primarily on shared track

Potential city pairs evaluated in the ridership model for each service level were determined independently based on the criteria for each level of service utilizing a tiered analysis that filtered potential cities based on population, corridor distance, and corridor travel demand, as described in further detail as follows.

Core Express Service

The city pairs tested in the model to determine potential ridership for core express service were identified utilizing the tiered process illustrated in Figure 1.

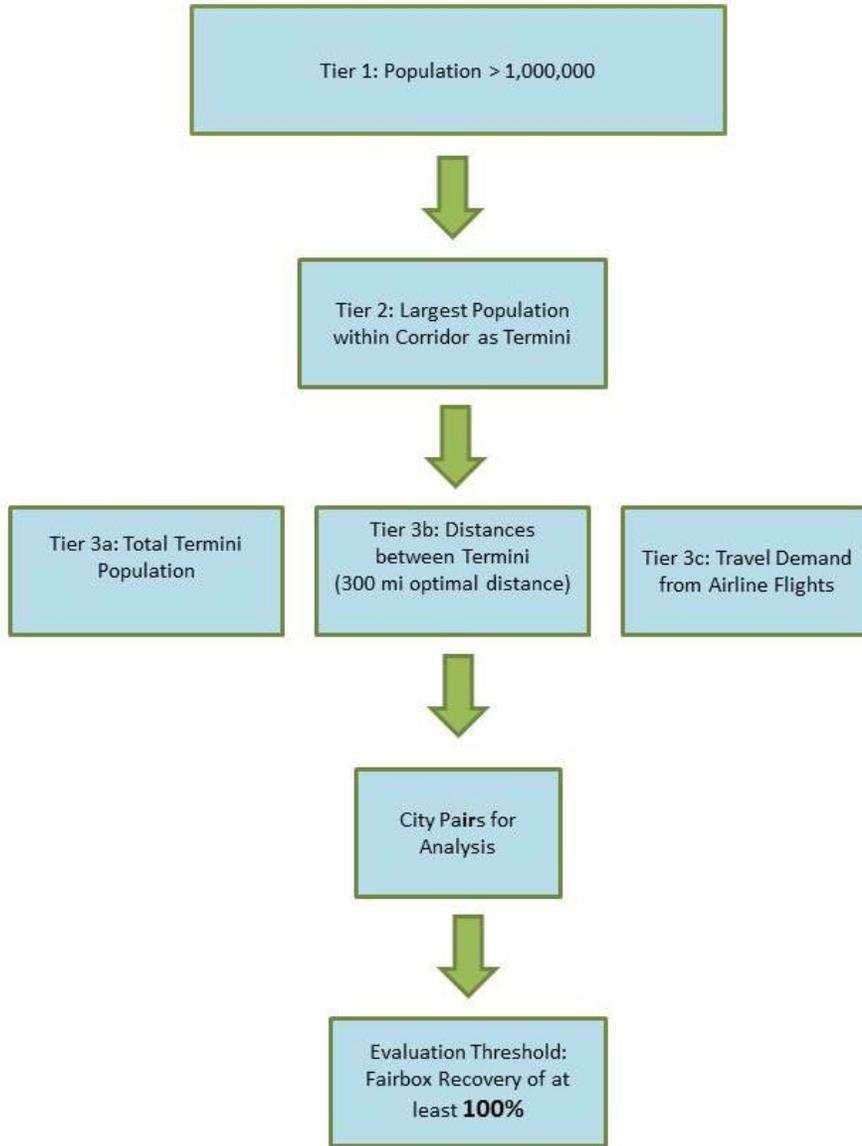


Figure 1: Evaluation Process to Identify City Pairs to be Evaluated for Core Express Service Ridership

Tier 1: Population Density of Metropolitan Statistical Areas (MSAs)

The potential list of city pairs started with all Metropolitan Statistical Areas (MSAs), which are defined as regions with a relatively large population density (at least 50,000 people) at its core, within the state of Texas as well as the MSAs of Baton Rouge, Shreveport/ Bossier City, Little Rock, Oklahoma City, and Albuquerque from adjacent states. Populations of the MSAs were identified utilizing U.S. Census Bureau data. MSAs with higher populations are assumed to produce a higher travel demand through a larger base of potential riders and generally higher population densities in a particular city area. Tier 1 of this methodology narrowed down the list of potential city terminus points for intercity passenger rail to MSAs with populations of greater than one million persons. It should be noted that, while the

minimum population criterion of one million eliminated Baton Rouge as a potential core express route terminus for the modeling, if New Orleans were to be included in the analysis, routes through Baton Rouge (such as New Orleans to Houston) may warrant core express service.

Tier 1 of the analysis narrowed down the list of potential city termini from 29 MSAs to 5 MSAs that were moved forward to Tier 2 in the evaluation as listed in Table 3.

Table 3: MSAs for Use in Core Express City Pair Analysis

Metropolitan Statistical Area (MSA)	Abbreviation	Population (2011)
Austin-Round Rock-San Marcos, TX	AUS	1,783,519
Dallas-Fort Worth-Arlington, TX	DFW	6,526,548
Houston-Sugar Land-Baytown, TX	HOU	6,086,538
Oklahoma City, OK	OKC	1,278,053
San Antonio-New Braunfels, TX	SAN	2,194,927

Tier 2: Largest MSAs within Corridor as Termini

Tier 2 looked at the populations of the potential corridor termini as well as the MSAs along the corridor's route of the city pairs that met Tier 1 criteria. Corridors that include a MSA population within the corridor larger than the termini of the corridor were removed from consideration. This removed potential overlap of corridors with larger MSAs within the city pair; however, the shorter route utilizing the larger MSA (without the larger MSA inside of the termini points) was still considered as a city pair for analysis.

Tier 2 of the analysis narrowed down the list of potential city pairs from the 5 MSAs from Tier 1 to seven city pairs which were moved forward to Tier 3 in the evaluation, as listed in Table 4. City pairs with both termini points outside of Texas (e.g., Albuquerque to Oklahoma City) were not included. The remaining city pairs were then ranked from one to seven for each of the three criterion in Tier 3 of the evaluation: total population of the termini cities, distance between termini, and travel demand within the corridor.

Table 4: Potential Core Express City Pairs for Tier 3 Analysis

Terminus 1	Terminus 2
AUS	DFW
AUS	HOU
AUS	SAN
DFW	HOU
DFW	OKC
DFW	SAN
HOU	SAN

Tier 3a: Total Termini Population

The populations at the termini serve as the greatest factor for potential intercity passenger rail ridership. The seven potential city pairs, ranked by total termini population, are shown in Table 5.

Table 5: Potential Core Express City Pairs Based on Total Population of Corridor

Terminus 1	Terminus 2	Total Pop	Pop Rank
DFW	HOU	12,613,086	1
DFW	SAN	8,721,475	2
AUS	DFW	8,310,067	3
HOU	SAN	8,281,465	4
AUS	HOU	7,870,057	5
DFW	OKC	7,804,601	6
AUS	SAN	3,978,446	7

Tier 3b: Distances between MSAs

Corridor distances generally considered appropriate for high-speed passenger rail range from 200 to 600 miles in length, with 200- to 300-mile corridors being optimal based on the assumption that longer distances are more efficiently traveled by air and shorter distances are better travelled by automobile or commuter rail. Tier 3b ranked the city pairs based on the corridor distances between the termini, with an optimal distance of 300 miles, as stated in the America 2050 report previously referenced. The corridor distances were approximated based on existing major highway routes or existing Amtrak routes between the city central business districts, since alignments for potential passenger rail service have not yet been identified.

The seven potential city pairs, ranked by distance between MSAs, are shown in Table 6.

Table 6: Potential Core Express City Pairs Based on Distance between Termini

Terminus 1	Terminus 2	Distance	Rank
DFW	SAN	272	1
DFW	HOU	251.5	2
DFW	OKC	205.5	3
HOU	SAN	197	4
AUS	DFW	193	5
AUS	HOU	165	6
AUS	SAN	81	7

Tier 3c: Travel Demand from Airline Flights

Each city pair has a travel demand from multiple transit modes, including automobile, bus, air, and passenger rail. Tier 3c evaluated the current travel frequency of airline flights to identify potential travel demand for the intercity passenger rail city pairs that met Tier 2 criteria. It was assumed that a certain percentage of the ridership for the intercity passenger rail corridors would come from this travel mode, and that a higher amount of travelers within a particular corridor denotes a higher potential ridership for the intercity passenger rail corridor.

A particular travel date was chosen for use to determine nonstop flights between city pairs. Capacities of airplanes were assumed as 140 based on typical seat availability. The average annual daily traffic (AADT) between corridors was not used as part of this analysis since specific origin and destination data for AADT between the city pairs was not available at this stage of development.

The 7 potential city pairs, ranked based on travel demand, are shown in Table 7.

Table 7: Potential Core Express City Pairs Based on Travel Demand

Terminus 1	Terminus 2	Total Flights	Rank
DFW	HOU	108	1
DFW	SAN	58	2
AUS	DFW	54	3
AUS	HOU	28	4
HOU	SAN	28	5
DFW	OKC	24	6
AUS	SAN	0	7

Tier 4: Identification of City Pairs for Statewide Ridership Model

The Tier 4 analysis highlighted the results from the Tier 3a, 3b, and 3c reviews and determined potential city pairs to be evaluated in the Statewide Ridership Model based on those results. Table 8 and Figure 2 show the results from the Tier 3a, 3b, and 3c analysis showing the highest and lowest rankings and the average ranking, assuming equal weighting for each category, for each city pair.

Table 8: Results of Tier 3 Analyses and Highest/Low est Overall Rankings for Core Express Service

Terminus 1	Terminus 2	Rank			Rank (Avg)
		Distance	Population	Travel Demand	
DFW	SAN	1	2	2	1
DFW	HOU	6	1	1	2
AUS	DFW	10	3	3	3
HOU	SAN	9	4	6	4
AUS	HOU	12	5	6	5
DFW	OKC	8	6	9	5
AUS	SAN	14	14	17	6

Compared with the TTI and America 2050 corridors, the DFW-SAN, DFW-HOU, and HOU-SAN city pairs ranked in the top 5 for all 3 lists. Similarly, AUS-HOU and DFW-OKC also made the top 10 in each list; however, it should be noted that TTI did not extend its study limits to city pairs outside of Texas.

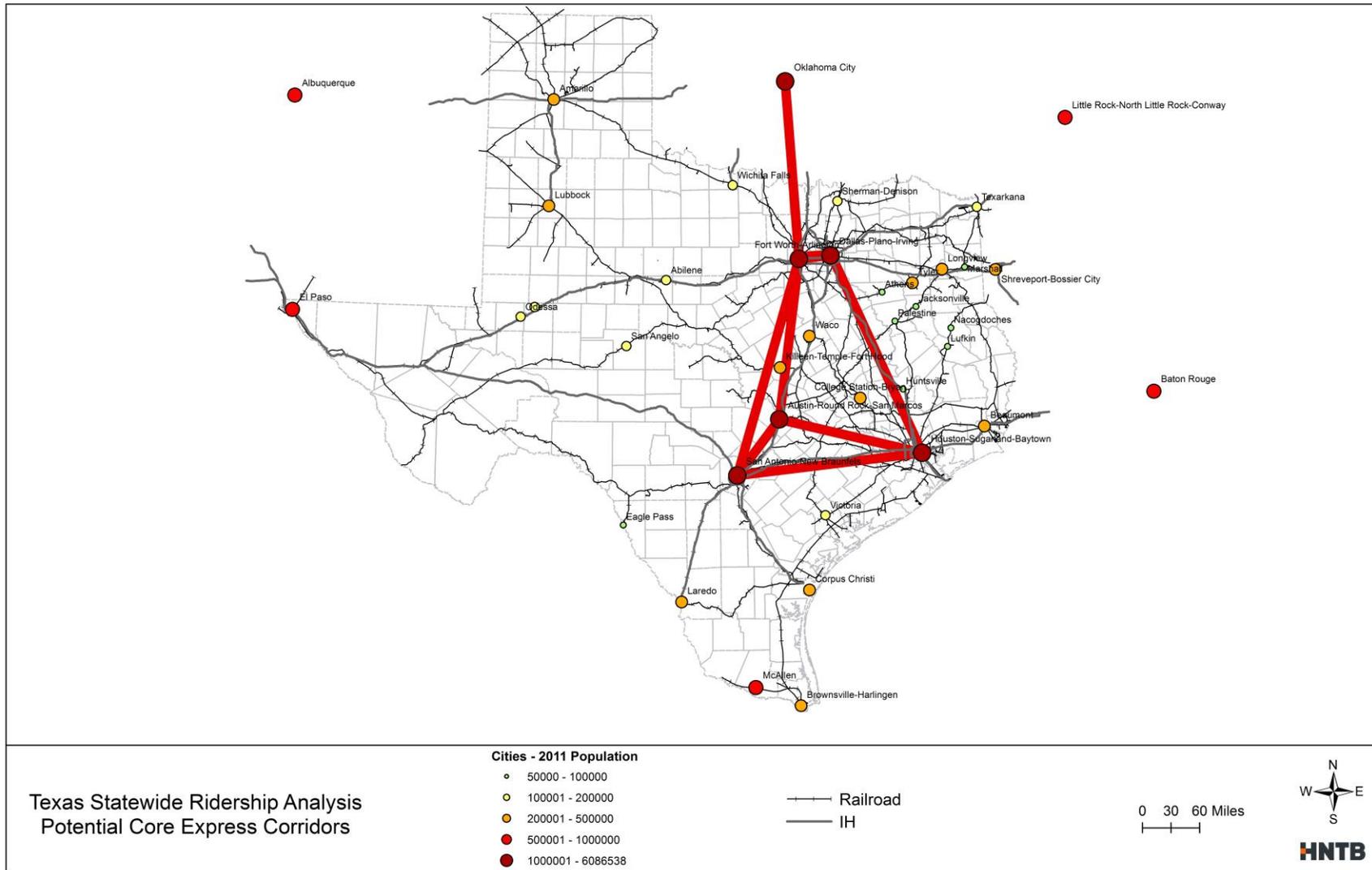


Figure 2: Potential Core Express Service Corridors

The corridors listed in Table 8 were tested in the Statewide Ridership Model to determine potential ridership and cost recovery to evaluate if core express service is economically justified. The corridors will be tested starting from the top of the list until a cost recovery threshold initially assumed to be a 100% farebox recovery ratio is no longer reached, at which point the remaining corridors will not be tested for core express service. The farebox recovery ratio is the percentage of a passenger rail system’s operating and maintenance costs that are paid for by the fees charged to ride the system. The remaining corridors that did not meet the farebox recovery threshold were then tested based on the results of the evaluation utilized to determine potential city pairs for regional service described as follows.

Regional and Emerging Service

The potential city pairs tested in the model to determine potential ridership for regional service were identified utilizing the tiered process illustrated in Figure 3.

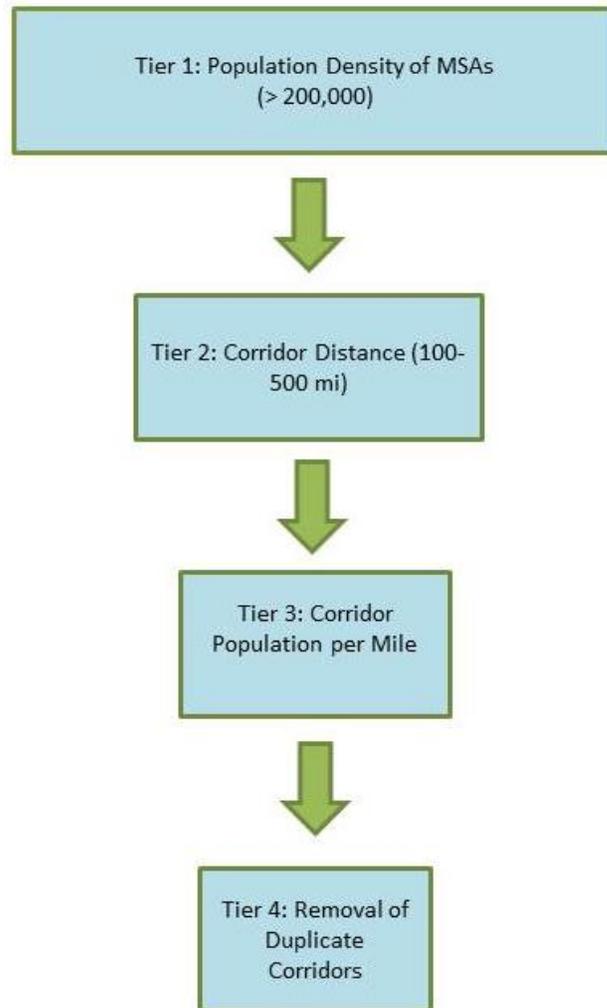


Figure 3: Evaluation Process to Identify City Pairs to be Evaluated for Regional Service Ridership

Tier 1: Population Density of Metropolitan Statistical Areas (MSAs)

Tier 1 of this methodology narrowed down the list of potential city terminus points for intercity passenger rail to MSAs with populations of greater than 200,000 persons. Tier 1 of the analysis narrowed down the list of potential city termini to 22 MSAs (220 city pairs) which were moved forward to Tier 2 in the evaluation as listed in Table 9.

Table 9: MSAs for Use in Regional City Pair Analysis

Metropolitan Statistical Area (MSA)	Abbreviation	Population (2011)
Albuquerque, NM	ABQ	898,642
Amarillo, TX	AMA	253,823
Austin-Round Rock-San Marcos, TX	AUS	1,783,519
Baton Rouge, LA	BAT	808,242
Beaumont-Port Arthur, TX	BEA	390,535
Brownsville-Harlingen, TX	BRO	414,123
College Station-Bryan, TX	COL	231,623
Corpus Christi, TX	CRP	431,381
Dallas-Fort Worth-Arlington, TX	DFW	6,526,548
El Paso, TX	ELP	820,790
Houston-Sugar Land-Baytown, TX	HOU	6,086,538
Killeen-Temple-Fort Hood, TX	KIL	411,595
Laredo, TX	LAR	256,496
Little Rock-North Little Rock-Conway, AR	LR	709,901
Longview, TX	LON	216,666
Lubbock, TX	LUB	290,002
McAllen-Edinburg-Mission, TX	MCA	797,810
Oklahoma City, OK	OKC	1,278,053
San Antonio-New Braunfels, TX	SAN	2,194,927
Shreveport-Bossier City, LA	SHR	403,595
Tyler, TX	TYL	213,381
Waco, TX	WAC	238,564

Tier 2: Corridor Distance

City pairs with total corridor distances less than 100 miles or greater than 500 miles were eliminated, which narrowed down the list of potential city pairs from 220 to 132 corridors that were moved forward to Tier 3 of the analysis.

Tier 3: Population per Mile of Corridor

The populations at the termini as well as cities with populations greater than 100,000 people along the corridor were calculated for each of the potential city pairs. Additionally, the corridor distance generally following existing rail corridors or, in some cases, short segments of new track were estimated for each city pair. The city pairs were then ranked based on the corridor population per mile to compare the city pairs based on potential ridership and level of investment. Additionally, population per mile along a route has proven in various existing passenger rail systems to correlate with the farebox recovery ratio. The top 25 of the remaining potential city pairs, ranked based on corridor population per mile, are shown in Table 10.

Table 10: Potential Regional City Pairs Based on Population of Corridor per Mile

Terminus 1	Terminus 2	Pop/MI	Pop/MI Rank
COL	DFW	39,292	1
DFW	SHR	36,275	2
HOU	KIL	34,869	3
HOU	WAC	34,780	4
HOU	TYL	31,818	5
CRP	HOU	31,488	6
OKC	SAN	30,116	7
HOU	LON	29,920	8
HOU	SHR	28,550	9
HOU	LAR	26,934	10
DFW	LAR	26,879	11
OKC	TYL	26,638	12
LON	OKC	24,354	13
LON	SAN	24,134	14
KIL	OKC	24,013	15
BEA	CRP	23,988	16
BEA	DFW	23,976	17
AUS	BAT	22,280	18
DFW	LUB	22,204	19
DFW	LR	21,601	20

Terminus 1	Terminus 2	Pop/MI	Pop/MI Rank
BAT	SAN	21,352	21
HOU	MCA	20,448	22
AMA	DFW	19,154	23
AUS	COL	18,833	24
CRP	DFW	18,579	25

Tier 4: Removal of Duplicate Corridors

Tier 4 removed city pairs that would be served by the potential core express corridors as well as overlapping corridors such as Oklahoma City to San Antonio and Dallas-Fort Worth to San Antonio. In the case of overlapping corridors, the longest corridor was retained while the shorter corridor options were removed and ridership outputs by corridor segment were produced in the model. The overlapping corridors that were contained in the top 25 of the city pairs listed in Table 10 were then replaced by the longer corridor along those same routes. For example, Corpus Christi to Houston was replaced by Beaumont to Brownsville. The resulting top 25 corridors for potential regional service evaluated in the model are listed in Table 11.

Lastly, three potential corridors were added to the list that would provide service to El Paso, since it was the only major metropolitan area in Texas that would not be served based on the methodology utilized to determine the potential city pairs as described.

The resulting corridors are listed in Table 11 and shown in Figure 4.

Table 11: Potential Regional Corridors Based on Population of Corridor per Mile

Terminus 1	Terminus 2	Rank
COL	DFW	1
DFW	BAT	2
HOU	KIL	3
HOU	WAC	4
HOU	TYL	5
BEA	BRO	6
OKC	SAN	7
HOU	LON	8
HOU	LR	9
BEA	LAR	10
DFW	LAR	11
OKC	TYL	12
LON	OKC	13
LON	SAN	14
KIL	OKC	15
BEA	MCA	16
BEA	DFW	17
AUS	BAT	18
LUB	TYL	19
DFW	LR	20
BAT	SAN	21
ABQ	DFW	22
COL	SAN	23
DFW	MCA	24
ELP	DFW (via Midland-Odessa)	25
ELP	DFW (via San Angelo)	25
ELP	AUS	25
ABQ	ELP	25

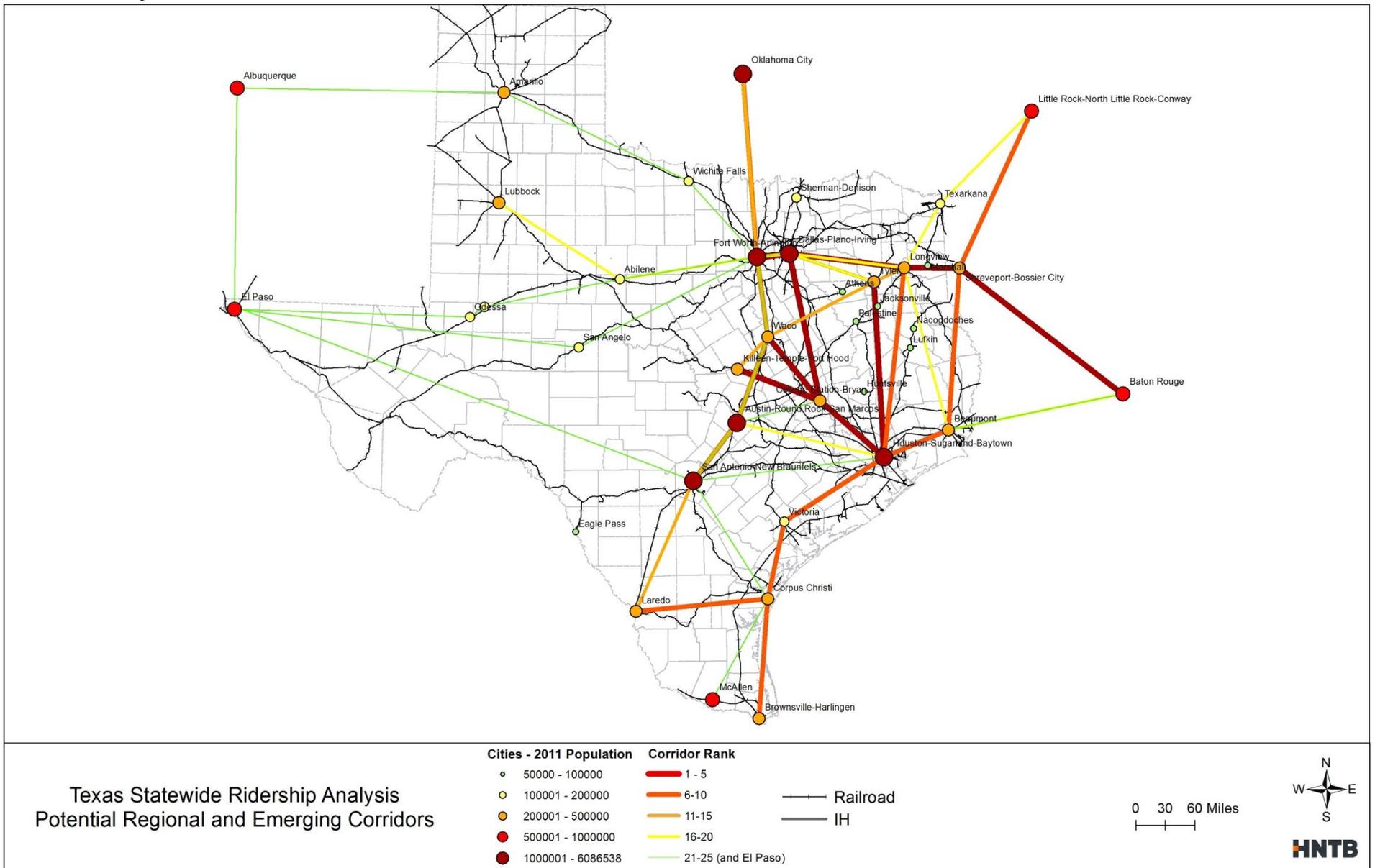


Figure 4: Potential Corridors for Regional and Emerging Service

The top 25 corridors were tested starting from the top of the list until a cost recovery threshold initially assumed to be a 75% (or slightly below) farebox recovery ratio was no longer reached, at which point the remaining corridors were tested for emerging service until a farebox recovery ratio of 50% (or slightly below) was no longer reached. The assumed farebox recovery ratio threshold may be adjusted based on the modeling results.

Figure 5 shows the potential core express, Regional, and Emerging corridors evaluated in the ridership model as previously described.

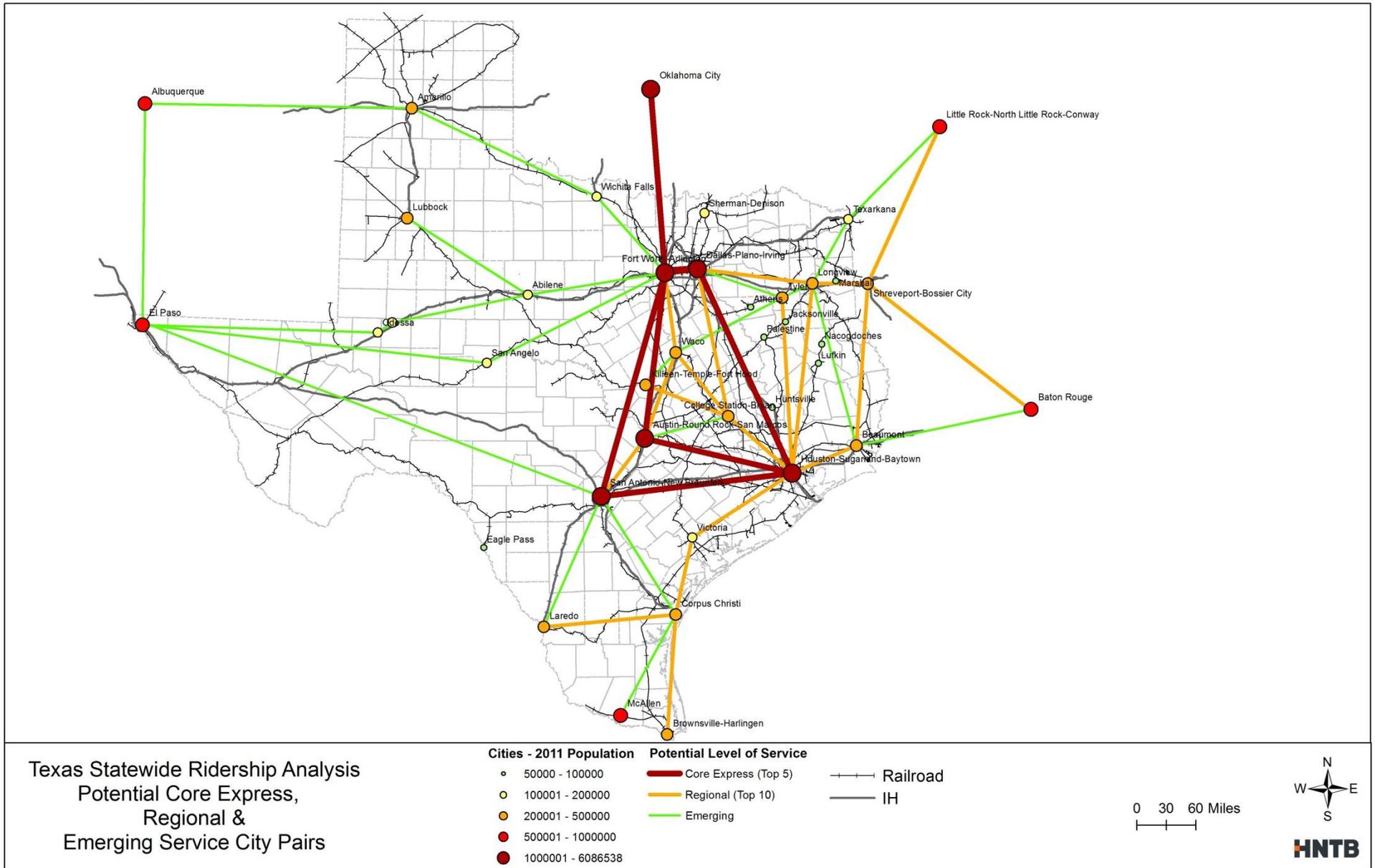


Figure 5: Potential Corridors for Core Express, Regional, and Emerging Service

Service Level Criteria Assumptions

The characteristics that distinguish the levels of service tested in the Statewide Ridership Model and the associated estimated costs were defined by the following assumptions based on similar operating systems.

Average Operating Speed

The average operating speeds assumed for the purpose of determining estimated trip times in the ridership model were based on the maximum allowable speeds along the route reduced to account for acceleration and deceleration, station stops, and potential curve restrictions. However, operations modeling was not performed for the potential passenger rail corridors and the assumed average operating speeds do not account for corridor-specific congestion (train meets/ capacity constraints) or any known topography or geometry.

- Core Express – 150 mph (250 mph max speed)
- Regional – 75 mph (125 mph max speed)
- Emerging – 40 mph (90 mph max speed with PTC)

Type of route

The type of route assumed between the city pairs for the purpose of determining route distance was based on the infrastructure requirements for each level of service. For example, core express service requires a fully grade separated corridor, while regional service typically requires new track with an offset of at least 50 feet from existing freight tracks. Emerging service can operate on existing freight tracks, though positive train control (PTC) signal systems would be required for operating speeds greater than 79 mph. In cases where multiple route options may be available (e.g., Houston to Little Rock through Beaumont and Shreveport versus through Longview), the route with the greatest population base for ridership was assumed.

- Core Express – greenfield
 - Route distance based on shortest highway route
- Regional – mostly existing corridors with new tracks adjacent to existing with some new greenfield sections where existing tracks do not provide reasonable routes between cities
 - Route distance based on track charts with total distance reduced by 5% to account for curve reductions and greenfield sections were based on shortest available highway routes
- Emerging – shared-use with existing freight lines

- Route distance based on existing track between city pairs

Station Stops

The number of stops and spacing of stops varies based on the level of service in order to maintain trip times appropriate for each type of service. For example, the number of stops along a core express route must be kept to a minimum in order to maintain the high speeds and short trip times to be competitive with flight service.

- Core Express – only stops at termini and major metropolitan areas (population > 500,000)
 - Some exceptions were made in locations where several populations were located in near proximity that would aggregate to approximately 500,000 or more (e.g., Waco/ Killeen)
- Regional – stops at cities with population > 100,000
- Emerging – stops at cities with population > 50,000

Frequency of Service/ Headways

The assumed frequency of service for each of the levels of service was based on examples of similar systems already in place with comparable operating speeds as well as the frequency of available air flights between city pairs.

- Core Express – 20 trips in each direction daily (based on assumed 30 minute headways during peak hours 6-9am, and 4-7pm and 90 minute headways during off peak hours 9am-4pm and 7pm to 10pm)
- Regional – 12 trips per day in each direction daily (based on assumed 60 minute headways during peak hours 6-9am, and 4-7pm and 2 hour headways during off peak hours 9am-4pm and 7pm to 10pm)
- Emerging – 2 trains in each direction daily

Fares

Although a range of fares will be tested in the ridership model, initial assumed fares for the service level were estimated based on the comparable costs to fly or drive between the city pairs.

- Core Express – high fare = airfare, low fare = federal mileage rate*route distance
- Regional – high fare = federal mileage rate*route distance, low fare = fuel cost to drive
- Emerging – high fare = federal mileage rate*route distance, low fare = fuel cost to drive

The federal mileage rate used for the fare calculations was \$0.555 at the time of this study, while the average price of fuel for the State of Texas was reported as by the American Automobile Association (AAA) as \$3.394 per gallon for regular gasoline.

Level of Service Characteristics by Corridor

The criteria for each level of service as previously listed were utilized to create a matrix defining the base assumptions for service characteristics to be modeled in the Statewide Ridership Model for each of the city pairs as shown in Appendix A.

4.0 Cost Effectiveness Analysis

This section provides a summary of the assumptions made, methodology used and outcomes achieved in a preliminary analysis of cost effectiveness of the potential intercity passenger rail corridors. The following two main measures of cost effectiveness were used:

- Cost Recovery Ratio (Annual Revenue from Fare / Annual O&M Cost)
- Cost per hour of user benefit

First, specific measures of cost were developed for each corridor. The following measures of cost were used in the cost effectiveness analysis.

- Annual intercity passenger rail system O&M cost for each of the Build Scenarios
- Annualized total capital costs for each of the Build Scenarios developed by the project team.

The estimated capital costs include station costs, infrastructure costs, and equipment costs for each corridor.

Development of Cost Estimates

The methodology used to determine estimates of capital and operating and maintenance costs for each of the city-pair scenarios identified and analyzed in the Statewide Ridership Analysis is summarized in the following section and described in further detail in the technical memorandum included as Appendix B to this report. The probability distribution analysis was performed in order to address the uncertainty in estimates of capital and operating costs and provide a range of possible outcomes.

Cost estimates provided for each corridor were based solely on assumed general costs per mile for infrastructure as well as operating and maintenance requirements depending on the level of service, and did not account for specific corridor attributes. Rolling stock costs were based on an assumed type of technology and frequency of service for each level of service. The estimated costs will be further refined as the corridors are further advanced, should funding allow, to the stages of developing Service Development Plans, Preliminary Engineering, and NEPA documentation.

There were 64 city-pair/level-of service corridors identified through the previously described evaluation of city-pairs and associated levels of service for which single-point cost estimates were prepared. These city-pair/level-of-service corridors were analyzed assuming that each corridor was mutually exclusive. Table 12 lists the identified city-pairs along with the related levels-of-service analyzed.

Table 12: City-Pairs by Level-of-Service Analyzed

City-Pair		Level-of Service		
Terminus 1	Terminus 2	Core Express	Regional	Emerging
Dallas	San Antonio	X		
Dallas	Houston	X		
Fort Worth	Houston	X		
DFW/CentrePort	Houston	X		
Dallas	Austin	X		
Houston	San Antonio	X		
Austin	Houston	X		
Dallas	Oklahoma City	X		
Austin	San Antonio	X		
Fort Worth	College Station		X	X
Fort Worth	Baton Rouge		X	X
Houston	Killeen		X	X
Houston	Waco		X	X
Houston	Tyler		X	X
Beaumont	Brownsville		X	X
Oklahoma City	San Antonio		X	X
Houston	Longview		X	X
Houston	Little Rock		X	X
Beaumont	Laredo		X	X
Dallas	Laredo		X	X
Oklahoma City	Tyler		X	X
Longview	Oklahoma City		X	X
Longview	San Antonio		X	X
Killeen	Oklahoma City		X	X
Beaumont	McAllen		X	X
Fort Worth	Beaumont		X	X
Austin	Baton Rouge		X	X
Lubbock	Tyler		X	X
Fort Worth	Little Rock		X	X
Baton Rouge	San Antonio		X	X

City-Pair		Level-of Service		
Terminus 1	Terminus 2	Core Express	Regional	Emerging
Dallas	Albuquerque		X	X
College Station	San Antonio		X	X
Dallas	McAllen		X	X
El Paso	Austin		X	X
Albuquerque	El Paso		X	X
Fort Worth (via Midland-Odessa & San Angelo)	El Paso		X	
Dallas (via Midland-Odessa)	El Paso			X
Dallas (via San Angelo)	El Paso			X

The cost metrics forecasted within the probability distribution model were total corridor capital cost, annual corridor operating and maintenance costs, and total annualized corridor cost. The total corridor capital cost (capital cost) metrics were assembled from three cost components, each with their own levels of variability and uncertainty: 1) station cost, 2) infrastructure cost, and 3) equipment cost. The total annualized corridor cost was calculated using the total corridor capital cost annualized based on life expectancies for the various components of that cost and the annual operating and maintenance cost. The input assumptions for the individual metrics were estimated either as an annual amount or as a life of component amount that was annualized utilizing component life expectancies.

The 90-percent (P90) level of confidence reporting probability for the estimated costs were utilized in the cost effectiveness analysis. It should be noted that use of P90 as a decision criteria is a risk averse approach (whereas the use of P50 would be a risk neutral approach, and use of levels less than 50-percent would be risk seeking).

The cost and life expectancy input assumptions were selected at a cursory level of detail intended to be applied statewide for the various corridors due to the preliminary nature of the study. As the project(s) mature, the input assumptions should become divided into more specific assumptions as knowledge of the individual corridors increase.

Subject Matter Experts (SMEs) were utilized to estimate most-likely, low, and high values for each of the input assumptions utilized to exhibit uncertainty in the costs. These 3 data points were applied to a standard BetaPERT probability distribution. A BetaPERT probability distribution is a continuous distribution that describes a situation with a limited amount of data. The distribution works well with expert data. SMEs were also utilized to determine the correlation coefficients applied to the cost components to address the dependency of one

variable assumption to a different variable assumption. The correlation coefficient values indicate how much of a change in one variable is explained by a change in another, such as: as the cost of the infrastructure increases, generally the O&M cost will increase also.

Key Cost Assumptions

The input assumptions for the model that have associated variability are shown in Tables 13 through 16.

Infrastructure

The infrastructure cost includes track elements, structures, signal systems, stations, ancillary facilities, and right-of-way. The costs for core express and regional service assume all new track construction, while emerging service would only require improvements to existing track to improve maximum allowable speeds and provide additional capacity. The cost per mile for emerging service may vary by corridor depending on the class of track and available capacity of the existing freight rail lines. This consolidated level of estimation ignores the terrain and environmental differences among city-pairs.

Table 13: Infrastructure Cost and Component Life Expectancy Assumptions

Assumption Description	Low Value	Most-Likely Value	High Value
Core Express - Infrastructure Cost Per Mile	\$30,000,000	\$50,000,000	\$80,000,000
Regional - Infrastructure Cost Per Mile	\$10,000,000	\$15,000,000	\$60,000,000
Emerging - Infrastructure Cost Per Mile	\$5,000,000	\$7,000,000	\$30,000,000
Civil - Life Expectancy in Years	25	45	60
Structures - Life Expectancy in Years	50	100	125
System - Life Expectancy in Years	15	30	50
Facilities - Life Expectancy in Years	15	50	75
Crossings - Life Expectancy in Years	5	15	30
Electrification - Life Expectancy in Years	15	30	50

Stations

The estimated station costs vary depending on the assumed size of each station, which was estimated based on the ridership estimated to be served at each station.

Table 14: Station Cost and Life Expectancy Assumptions

Assumption Description	Low Value	Most-Likely Value	High Value
"Hub" Station Cost	\$106,000,000	\$120,000,000	\$135,000,000
"Major" Station Cost	\$50,000,000	\$60,000,000	\$66,000,000
"Intermediate" Station Cost	\$20,000,000	\$30,000,000	\$30,000,000
"Minor" Station Cost	\$5,000,000	\$5,000,000	\$15,000,000
"Hub" Station - Life Expectancy in Years	50	75	75
"Major" Station - Life Expectancy in Years	40	75	75
"Intermediate" Station - Life Expectancy in Years	30	75	75
"Minor" Station - Life Expectancy in Years	20	75	75

Rolling Stock (Equipment)

The estimated costs for rolling stock are based on acquiring new equipment with a total purchase of 30 or less trainsets.

Table 15: Train Set Cost and Life Expectancy Assumptions

Assumption Description	Low Value	Most-Likely Value	High Value
Core Express - Cost per Train Set	\$41,000,000	\$45,000,000	\$51,000,000
Regional - Cost per Train Set	\$35,000,000	\$38,000,000	\$41,000,000
Emerging - Cost per Train Set	\$25,000,000	\$30,000,000	\$35,000,000
Core Express Train Set - Life Expectancy in Years	25	25	30
Regional Train Set - Life Expectancy in Years	25	25	30
Emerging Train Set - Life Expectancy in Years	25	25	30

Operating and Maintenance

The operating and maintenance costs include operator profit, administration and management, station costs, sales and marketing, insurance liability, track and ROW maintenance, energy and fuel, equipment maintenance, on-board service crews, and train crews. Several components of the operating and maintenance costs vary depending on the type of equipment technology utilized, such as the examples listed below.

- 79-mph conventional diesel
- 110-mph high-speed diesel
- 150-mph electric locomotive-hauled high-speed rail

- 220-mph electric multiple-unit (self-propelled) high-speed rail
- 125-mph Maglev (linear induction motor)
- 300-mph Transrapid Maglev (linear synchronous motor)

Although the type of technology for each corridor is not known at this stage, unit costs per train mile traveled for each level of service were estimated based on reported O&M costs for existing and planned comparable services. The train miles were estimated based on the calculated route miles and the frequency of trains per day for each level of service.

Table 16: Operating & Maintenance Cost Assumptions

Assumption Description	Low Value	Most-Likely Value	High Value
Core Express - O&M Cost per Train Mile Traveled	\$25	\$40	\$65
Regional - O&M Cost per Train Mile Traveled	\$30	\$45	\$70
Emerging - O&M Cost per Train Mile Traveled	\$30	\$50	\$85

Cost Probability Analysis Results

Table 17 presents the total corridor capital cost for each of the 64 city-pair/level-of-service corridors. The median value for each corridor represents the amount where half of the Monte Carlo Simulation iterations produced resulted in values less than the median value and half of the iterations produced resulted in values greater than the median. The P75 value is larger than 75-percent of the iterations produced and the P90 value is larger than 90-percent of the iterations produced. The P90 value for the first City-Pair/Level-of-Service corridor listed can be further communicated by the following statement: “There is a 90-percent probability that the total corridor capital cost will not be greater than \$20.4 billion for the Dallas-San Antonio core express corridor.”

Table 17: Total Estimated Corridor Capital Cost (Billions of Dollars)

City-Pair		Level-of Service	Total Corridor Capital Cost		
Terminus 1	Terminus 2		Median (\$B)	P75 (\$B)	P90 (\$B)
Dallas	San Antonio	Core Express	\$16.3	\$18.5	\$20.4
Dallas	Houston	Core Express	\$14.6	\$16.6	\$18.3
Fort Worth	Houston	Core Express	\$16.3	\$18.5	\$20.4
DFW/CentrePort	Houston	Core Express	\$15.4	\$17.5	\$19.2
Dallas	Austin	Core Express	\$12.1	\$13.7	\$15.2
Houston	San Antonio	Core Express	\$10.7	\$12.1	\$13.3
Austin	Houston	Core Express	\$8.8	\$10.0	\$11.0

City-Pair		Level-of Service	Total Corridor Capital Cost		
Terminus 1	Terminus 2		Median (\$B)	P75 (\$B)	P90 (\$B)
Dallas	Oklahoma City	Core Express	\$12.4	\$14.1	\$15.5
Austin	San Antonio	Core Express	\$4.3	\$4.9	\$5.4
Fort Worth	College Station	Regional	\$4.2	\$5.5	\$6.8
Fort Worth	Baton Rouge	Regional	\$9.1	\$11.9	\$14.8
Houston	Killeen	Regional	\$4.1	\$5.3	\$6.6
Houston	Waco	Regional	\$3.9	\$5.1	\$6.3
Houston	Tyler	Regional	\$4.3	\$5.6	\$6.9
Beaumont	Brownsville	Regional	\$10.0	\$13.0	\$16.1
Oklahoma City	San Antonio	Regional	\$10.6	\$13.9	\$17.2
Houston	Longview	Regional	\$4.3	\$5.6	\$6.9
Houston	Little Rock	Regional	\$9.6	\$12.6	\$15.6
Beaumont	Laredo	Regional	\$9.3	\$12.2	\$15.1
Dallas	Laredo	Regional	\$10.3	\$13.5	\$16.7
Oklahoma City	Tyler	Regional	\$7.1	\$9.2	\$11.5
Longview	Oklahoma City	Regional	\$7.4	\$9.6	\$12.0
Longview	San Antonio	Regional	\$8.4	\$10.9	\$13.5
Killeen	Oklahoma City	Regional	\$7.6	\$10.0	\$12.4
Beaumont	McAllen	Regional	\$10.0	\$13.1	\$16.2
Fort Worth	Beaumont	Regional	\$7.7	\$10.0	\$12.4
Austin	Baton Rouge	Regional	\$9.0	\$11.8	\$14.6
Lubbock	Tyler	Regional	\$9.5	\$12.4	\$15.3
Fort Worth	Little Rock	Regional	\$8.2	\$10.7	\$13.4
Baton Rouge	San Antonio	Regional	\$10.3	\$13.5	\$16.7
Dallas	Albuquerque	Regional	\$13.7	\$17.9	\$22.3
College Station	San Antonio	Regional	\$3.5	\$4.6	\$5.7
Dallas	McAllen	Regional	\$13.6	\$17.8	\$22.1
Fort Worth (via Midland-Odessa & San Angelo)	El Paso	Regional	\$13.5	\$17.7	\$21.9
El Paso	Austin	Regional	\$13.7	\$18.0	\$22.3
Albuquerque	El Paso	Regional	\$5.1	\$6.7	\$8.3
Fort Worth	College Station	Emerging	\$2.0	\$2.7	\$3.4

City-Pair		Level-of Service	Total Corridor Capital Cost		
Terminus 1	Terminus 2		Median (\$B)	P75 (\$B)	P90 (\$B)
Fort Worth	Baton Rouge	Emerging	\$4.5	\$5.9	\$7.4
Houston	Killeen	Emerging	\$2.1	\$2.8	\$3.5
Houston	Waco	Emerging	\$1.9	\$2.5	\$3.1
Houston	Tyler	Emerging	\$2.8	\$3.7	\$4.6
Beaumont	Brownsville	Emerging	\$4.9	\$6.5	\$8.1
Oklahoma City	San Antonio	Emerging	\$5.2	\$6.9	\$8.7
Houston	Longview	Emerging	\$2.3	\$3.1	\$3.8
Houston	Little Rock	Emerging	\$4.7	\$6.2	\$7.8
Beaumont	Laredo	Emerging	\$4.6	\$6.1	\$7.6
Dallas	Laredo	Emerging	\$5.1	\$6.7	\$8.4
Oklahoma City	Tyler	Emerging	\$3.5	\$4.7	\$5.9
Longview	Oklahoma City	Emerging	\$3.6	\$4.7	\$6.0
Longview	San Antonio	Emerging	\$3.4	\$4.5	\$5.6
Killeen	Oklahoma City	Emerging	\$3.8	\$5.0	\$6.2
Beaumont	McAllen	Emerging	\$5.2	\$6.9	\$8.6
Fort Worth	Beaumont	Emerging	\$3.6	\$4.7	\$5.9
Austin	Baton Rouge	Emerging	\$5.0	\$6.5	\$8.2
Lubbock	Tyler	Emerging	\$4.7	\$6.2	\$7.8
Fort Worth	Little Rock	Emerging	\$3.9	\$5.2	\$6.5
Baton Rouge	San Antonio	Emerging	\$5.0	\$6.6	\$8.3
Dallas	Albuquerque	Emerging	\$7.4	\$9.7	\$12.2
College Station	San Antonio	Emerging	\$1.9	\$2.5	\$3.2
Dallas	McAllen	Emerging	\$6.7	\$8.8	\$11.1
Dallas (via Midland-Odessa)	El Paso	Emerging	\$6.4	\$8.5	\$10.7
Dallas (via San Angelo)	El Paso	Emerging	\$7.3	\$9.6	\$12.1
El Paso	Austin	Emerging	\$6.9	\$9.1	\$11.4
Albuquerque	El Paso	Emerging	\$2.5	\$3.4	\$4.2

Table 18 presents the annual corridor operating and maintenance costs for each of the 64 city-pair/level-of-service alternatives.

Table 18: Annual Corridor Operating & Maintenance Costs (Millions of Dollars)

City-Pair		Level-of Service	Annual Corridor O&M Costs		
Terminus 1	Terminus 2		Median (\$M)	P75 (\$M)	P90 (\$M)
Dallas	San Antonio	Core Express	\$185	\$211	\$234
Dallas	Houston	Core Express	\$166	\$189	\$209
Fort Worth	Houston	Core Express	\$185	\$211	\$234
DFW/CentrePort	Houston	Core Express	\$175	\$199	\$220
Dallas	Austin	Core Express	\$137	\$156	\$173
Houston	San Antonio	Core Express	\$120	\$138	\$152
Austin	Houston	Core Express	\$99	\$113	\$125
Dallas	Oklahoma City	Core Express	\$140	\$160	\$177
Austin	San Antonio	Core Express	\$48	\$55	\$61
Fort Worth	College Station	Regional	\$79	\$89	\$97
Fort Worth	Baton Rouge	Regional	\$174	\$196	\$215
Houston	Killeen	Regional	\$76	\$86	\$94
Houston	Waco	Regional	\$73	\$82	\$91
Houston	Tyler	Regional	\$80	\$90	\$99
Beaumont	Brownsville	Regional	\$191	\$215	\$236
Oklahoma City	San Antonio	Regional	\$205	\$231	\$253
Houston	Longview	Regional	\$81	\$91	\$100
Houston	Little Rock	Regional	\$184	\$208	\$228
Beaumont	Laredo	Regional	\$178	\$201	\$220
Dallas	Laredo	Regional	\$199	\$223	\$245
Oklahoma City	Tyler	Regional	\$135	\$152	\$166
Longview	Oklahoma City	Regional	\$141	\$159	\$174
Longview	San Antonio	Regional	\$161	\$181	\$198
Killeen	Oklahoma City	Regional	\$146	\$165	\$180
Beaumont	McAllen	Regional	\$192	\$216	\$237
Fort Worth	Beaumont	Regional	\$147	\$165	\$181
Austin	Baton Rouge	Regional	\$172	\$195	\$213
Lubbock	Tyler	Regional	\$182	\$204	\$224

City-Pair		Level-of Service	Annual Corridor O&M Costs		
Terminus 1	Terminus 2		Median (\$M)	P75 (\$M)	P90 (\$M)
Fort Worth	Little Rock	Regional	\$158	\$178	\$195
Baton Rouge	San Antonio	Regional	\$198	\$222	\$244
Dallas	Albuquerque	Regional	\$264	\$298	\$326
College Station	San Antonio	Regional	\$66	\$75	\$82
Dallas	McAllen	Regional	\$263	\$296	\$324
Fort Worth (via Midland-Odessa & San Angelo)	El Paso	Regional	\$261	\$295	\$322
El Paso	Austin	Regional	\$266	\$299	\$328
Albuquerque	El Paso	Regional	\$98	\$110	\$120
Fort Worth	College Station	Emerging	\$16	\$18	\$20
Fort Worth	Baton Rouge	Emerging	\$34	\$39	\$44
Houston	Killeen	Emerging	\$16	\$18	\$20
Houston	Waco	Emerging	\$14	\$17	\$19
Houston	Tyler	Emerging	\$21	\$24	\$27
Beaumont	Brownsville	Emerging	\$38	\$43	\$48
Oklahoma City	San Antonio	Emerging	\$40	\$47	\$52
Houston	Longview	Emerging	\$18	\$20	\$23
Houston	Little Rock	Emerging	\$36	\$42	\$46
Beaumont	Laredo	Emerging	\$35	\$40	\$45
Dallas	Laredo	Emerging	\$39	\$45	\$50
Oklahoma City	Tyler	Emerging	\$27	\$32	\$35
Longview	Oklahoma City	Emerging	\$28	\$32	\$35
Longview	San Antonio	Emerging	\$26	\$30	\$33
Killeen	Oklahoma City	Emerging	\$29	\$33	\$37
Beaumont	McAllen	Emerging	\$40	\$46	\$51
Fort Worth	Beaumont	Emerging	\$28	\$32	\$35
Austin	Baton Rouge	Emerging	\$38	\$44	\$48
Lubbock	Tyler	Emerging	\$36	\$42	\$46
Fort Worth	Little Rock	Emerging	\$30	\$35	\$38
Baton Rouge	San Antonio	Emerging	\$38	\$44	\$49
Dallas	Albuquerque	Emerging	\$56	\$65	\$72

City-Pair		Level-of Service	Annual Corridor O&M Costs		
Terminus 1	Terminus 2		Median (\$M)	P75 (\$M)	P90 (\$M)
College Station	San Antonio	Emerging	\$15	\$17	\$19
Dallas	McAllen	Emerging	\$51	\$59	\$66
Dallas (via Midland-Odessa)	El Paso	Emerging	\$49	\$56	\$62
Dallas (via San Angelo)	El Paso	Emerging	\$55	\$64	\$71
El Paso	Austin	Emerging	\$53	\$61	\$67
Albuquerque	El Paso	Emerging	\$19	\$22	\$25

Appendix B contains details for each of the 64 city-pair/level-of-service alternatives for the total corridor capital cost metric and the annual corridor operating & maintenance costs metric as well as additional detail regarding the methodology utilized for the probability analysis.

Corridor Cost Effectiveness Analysis Results

Once the costs for each corridor were developed, the Statewide Analysis Model Version 2.5 (SAM-V2.5) model was used to analyze the forecasted 2035 intercity passenger rail ridership at three different levels of service: core express, regional, and emerging. The corridors were ranked on likelihood of potential intercity passenger rail ridership based on terminal population, distance between MSAs, and airline flight frequency as previously described. The corridors were run from the highest ranking to the lowest ranking until the corridors no longer reached the specified cost recovery thresholds for each service level. The cost recovery threshold is represented by the amount of operating and maintenance costs recovered by the fare box revenue (100% for core express, 75% for regional, 50% for emerging). The fare box revenue was calculated as the total number of new riders per year multiplied by the assumed passenger rail fare to calculate total fares collected. The total fare box receipts were discounted to net present value in 2010 year dollars and then compared to the cost to determine if the corridor met the cost recovery threshold.

If the corridors met the cost recovery threshold, then the Federal Transit Administration's (FTA) Summit Software was used in quantifying the user benefits for the different corridors. The transportation system user benefits is representative of total system expenditure savings in hours, which is the travel time savings between the build scenario (each potential intercity passenger rail corridor) and the no build scenario (no new intercity passenger rail corridors). The weekday user benefits, or expenditure savings in hours, were then multiplied

by an annual factor to establish the annual estimate of total system user benefits in hours per year. The benefits analyzed included the following effectiveness inputs:

- Transportation System User Benefits (TSUB) measured in hours per year based on Summit output
- Total additional intercity passenger rail ridership measured in new riders per year based on SAM-V2.5 output

After all of the input values for each corridor alternative were calculated, the cost effectiveness of each alternative was analyzed. The cost effectiveness for each corridor was evaluated based on the cost per hour of user benefit and the cost recovery ratio. The cost and benefit input values developed, as well as the cost effectiveness output is summarized for each service level in Tables 19 through 21.

Daily ridership (typical weekday) was forecast for 2035 for the proposed high speed rail service with the SAM-V2.5. An additional factor was applied to these results to derive weekend ridership⁴. The forecasted ridership estimates provided in this study do not include induced ridership.

Core Express Corridors

The results from the cost effectiveness analysis of the core express corridors are shown in Table 19. Each core express corridor had varying levels of cost (including capital and operating and maintenance), forecasted 2035 intercity passenger rail ridership, revenue in 2010 dollars, total system user benefit in hours, and cost per hour of user benefit in 2010 dollars. The cost per hour of user benefit can be used as a comparative measure between the corridors to determine which corridors are the most cost effective. Lower values indicate more cost effective corridors.

The Austin-Houston core express corridor had the highest level of cost effectiveness, or cost per hour of user benefit. Not only did the Austin-Houston corridor have the highest ridership and second highest revenue, it also had the lowest cost per hour of user benefit. The corridor with the second highest cost effectiveness, or cost per hour of user benefit, was the Houston-San Antonio corridor. The Houston-San Antonio corridor had the third lowest cost, third highest ridership, fifth highest revenue, and fifth highest total system user benefits.

⁴ The 2009 National Household Transportation Survey (NHTS) provides the basis for the calculation of weekend ridership that is paired with the weekday ridership forecast with the Statewide Analysis Model (SAM). The NHTS allowed for an examination of Weekday (Mon-Thurs) long distance travel (150 miles or more) as compared with weekend (Fri-Sun) long distance travel.

The relationships between the benefit, cost, and cost effectiveness variables demonstrate that the cost effectiveness is a comprehensive effectiveness measure for each corridor.

Table 19: Core Express Service Cost Effectiveness Results

Origin	Destination	2035 Annual Ridership ⁵	Total Capital Cost	Annual O&M Cost	Annual Fare Box Revenue	Cost Recovery Ratio	Annual Total System User Benefits (hours)	Cost per Hour of User Benefit
Austin	Houston	5.5M	\$11.0B	\$125M	\$506M	4.05	2.4M	\$150
Houston	San Antonio	4.2M	\$13.3B	\$152M	\$460M	3.03	2.3M	\$190
Dallas	Houston	3.6M	\$18.3B	\$209M	\$448M	2.14	2.3M	\$250
Dallas	Austin	4.0M	\$15.2B	\$273M	\$373M	2.16	1.9M	\$260
Fort Worth	Houston	3.8M	\$20.4B	\$234M	\$479M	2.05	2.4M	\$270
Dallas	San Antonio	4.9M	\$20.4B	\$234M	\$522M	2.23	2.4M	\$280
Dallas	Oklahoma City	2.4M	\$15.5B	\$177M	\$275M	1.55	1.4M	\$350
DFW/Airport	Houston	2.9M	\$19.2B	\$220M	\$354M	1.61	1.7M	\$360
Austin	San Antonio	0.27M	\$5.4B	\$61M	\$11M	0.18	51K	\$3,390

Regional Corridors

The results from the cost effectiveness analysis of the regional service corridors are shown in Table 20. Similar to the core express corridors, each regional corridor had varying levels of cost (including capital and operating and maintenance), 2035 ridership, revenue in 2010 dollars, total system user benefit in hours, and cost per hour of user benefit in 2010 dollars. The cost per hour of user benefit can be used as a comparative measure between the corridors to determine which corridor is the most cost effective.

The Waco-Houston regional corridor had the highest level of cost effectiveness, or cost per hour of user benefit. Not only did the Waco-Houston corridor have the highest ridership and

⁵ Ridership estimates are reported in ranges following the probability analysis section to account for uncertainty.

highest revenue, it also had the lowest cost and lowest cost per hour of user benefit. The regional corridor with the second highest cost effectiveness, or cost per hour of user benefit, was the Fort Worth-College Station corridor. The Fort Worth-College Station corridor had the third lowest cost, third highest ridership, third highest revenue, and highest total system user benefits. The relationships between the benefit, cost, and cost effectiveness variables demonstrate that the cost effectiveness is a comprehensive effectiveness measure for each corridor.

Table 20: Regional Service Cost Effectiveness Results

Origin	Destination	2035 Annual Ridership ⁶	Total Capital Cost	Annual O&M Cost	Annual Fare Box Revenue	Cost Recovery Ratio	Annual Total System User Benefits (hours)	Cost per Hour of User Benefit
Waco	Houston	1.4M	\$6.3B	\$91M	\$105M	1.15	400K	\$350
Fort Worth	College Station	0.81M	\$6.8B	\$97M	\$75M	0.77	450K	\$550
Houston	Killeen	0.81M	\$6.6B	\$94M	\$55M	0.59	320K	\$750
Tyler	Houston	0.54M	\$6.9B	\$99M	\$59M	0.60	210K	\$1,190
Fort Worth	Baton Rouge	1.2M	\$14.8B	\$215M	\$102M	0.47	300K	\$1,800

Emerging Corridors

The results from the cost effectiveness analysis of the emerging service corridors are shown in Table 21. Similar to the core express and regional corridors, each emerging corridor had varying levels of cost (including capital and operating and maintenance), 2035 ridership, revenue in 2010 dollars, total system user benefit in hours, and cost per hour of user benefit in 2010 dollars. The cost per hour of user benefit can be used as a comparative measure between the corridors to determine which corridor is the most cost effective.

The Waco-Houston emerging corridor also had the highest level of cost effectiveness, or cost per hour of user benefit. The Waco-Houston corridor had the lowest cost, highest ridership, lowest revenue, highest total system user benefits, as well as the lowest cost per hour of user benefit. The emerging corridor with the second highest cost effectiveness, or cost per hour of user benefit, was the Tyler-Houston corridor. The Tyler-Houston corridor had the third highest cost, highest ridership, second highest revenue, and third highest total system user benefits. The relationships between the benefit, cost, and cost effectiveness variables demonstrate that the cost effectiveness is a comprehensive effectiveness measure for each corridor.

⁶ Ridership estimates and are reported in ranges following the probability analysis section to account for uncertainty.

Table 21: Emerging Service Cost Effectiveness Results

Origin	Destination	2035 Annual Ridership ⁷	Total Capital Cost	Annual O&M Cost	Annual Fare Box Revenue	Cost Recovery Ratio	Annual Total System User Benefits (hours)	Cost per Hour of User Benefit
Waco	Houston	0.38M	\$3.1B	\$19M	\$22M	1.16	200K	\$760
Tyler	Houston	0.38M	\$4.6B	\$27M	\$15M	0.56	150K	\$880
Killeen	Houston	0.22M	\$3.5B	\$20M	\$12M	0.60	120K	\$890
Fort Worth	Baton Rouge	0.32M	\$7.4B	\$44M	\$18M	0.41	150K	\$2,170
Fort Worth	College Station	.12M	\$3.4B	\$20M	\$11M	0.55	70K	\$2,370
Beaumont	Brownsville	0.24M	\$8.1B	\$48M	\$14M	0.29	70K	\$3,430

⁷ Ridership estimates are reported in ranges following the probability analysis section to account for uncertainty.

5.0 System Optimization Analysis

A system optimization analysis was performed to evaluate the impact of combining the high-performing individual corridors into a core system and the impact of incrementally adding corridors to that system. The various system combinations were evaluated based to determine the impact of the system to the individual corridor ridership forecasts and annual revenue from fares as well as the impact to the overall system cost recovery ratio, cost effectiveness, and user benefits of adding additional corridors to the system.

Although not evaluated in this study, considerations for connecting multiple corridors that may be owned and operated by different parties should be coordinated in the future. System integration considerations are summarized below:

- Infrastructure
 - Connecting corridors should have common hub stations connecting them.
 - Trains should arrive at a common platform.
 - Different equipment types can be used with different top speeds and operating characteristics. However equipment must be standardized with regard to platform height and length requirements.
 - Cross-platform boarding may be required.
- Operations
 - Schedules must be consistent with regard to frequencies.
 - Train arrival and departure times at stations shared by multiple routes/ services should be coordinated to allow passengers to move across the platform from the arriving train to the departing train seamlessly.
 - This will require integrated dispatching and communications systems to address any operating and schedule issues that develop.
 - Ticketing and revenue management systems should be coordinated to allow through-ticketing regardless of which operator originates the trip. This may require some kind of integration of ticketing and reservations systems technology.
 - Baggage handling may present a challenge. Checked baggage may not be possible.
- Operating and maintenance expenses
 - Agreements for shared track and stations may be required.

The following section provides a comprehensive summary of the methodology, assumptions, and outcomes of the system optimization analysis, while detailed tables and figures showing the results of each system alternative analyzed are included in Appendix D.

Analysis Approach / Methodology

The SAM-V2.5 travel demand model was used to measure and compare the travel utility and cost effectiveness of seven candidate intercity passenger rail systems. Utility is the measure of traveler’s perception of how easy a mode is to access and how useful it is to them in achieving their travel objective. In the SAM-V2.5 mode choice model utility is measured in terms of a combination of variables related to travel cost, travel time, convenience and reliability. The candidate systems were created by combining high-performing individual corridors based on professional judgment and the rankings from the travel market and cost effectiveness analyses.

Core System

The SAM-V2.5 was run on a Core System consisting of three core express corridors. The Core System consisted of the following corridors:

- Dallas to San Antonio Core Express
- Fort Worth to Houston Core Express
- Austin to Houston Core Express

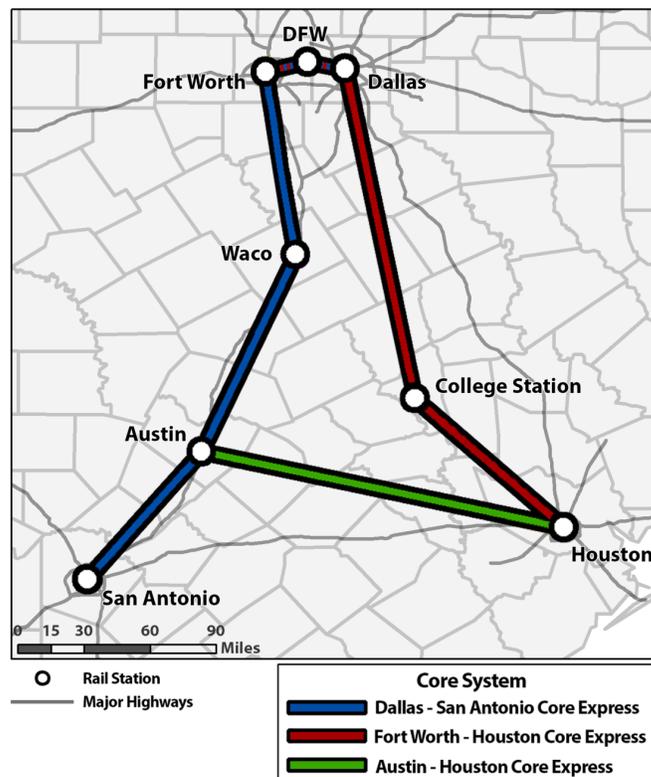


Figure 6: Core System Route Concept

After the Core System was defined, a SAM-V2.5 model run was performed using the service parameters (fare, average travel speed, etc.) of the Core System as previously defined in the Level of Service Assumptions section of this report. The performance of the Core System was analyzed using several key performance indicators, including revenue and cost effectiveness.

The first measure of cost effectiveness was reported in terms of unit cost, or dollars per hour of total system user benefit. This measure aligns with the methodology used by the Federal Transit Administration (FTA) to calculate cost effectiveness for all New Starts projects. This measure was calculated by dividing the total annualized costs of the system by the total system user benefits (see formula below).

Cost Per Hour of User Benefit

$$= \frac{(Annualized\ Capital\ Cost) + (Total\ Systemwide\ Annual\ Operating\ \&\ Maintenance\ Cost)}{Annual\ Total\ System\ User\ Benefits}$$

The second measure of cost effectiveness, Cost Recovery Ratio, was reported as the ratio of operating and maintenance costs recovered by the fare box revenue, which was based on high speed intercity passenger rail system riders per year. This ratio was developed using the formula below.

$$Cost\ Recovery\ Ratio = \frac{Annual\ Operating\ and\ Maintenance\ Costs}{Annual\ Fare\ Box\ Revenue}$$

Total revenue was determined by multiplying the total number of new riders per year by the intercity passenger rail fare. The total fare box receipts were discounted to Net Present Value (NPV) in the year 2010.

System Expansion

After the Core System was run, additional corridors were added iteratively to the Core System to create new candidate systems. The additional corridors were selected based on professional judgment and the rankings from the travel market and cost effectiveness analyses. In situations where the additional corridors overlapped the service of existing corridors, the route with the higher level of service was kept in order to avoid duplication of service. The additional corridors provided connectivity between new city pairs not included in the Core System, expanding the intercity passenger rail system market. The corridors that were incrementally added to the Core System include, in sequential order:

- San Antonio to Houston Core Express
- Oklahoma City to Dallas Core Express
- Waco to Houston (via College Station) Regional
- Killeen to Houston (via College Station) Regional
- Tyler to Houston Emerging
- Fort Worth to Baton Rouge Regional

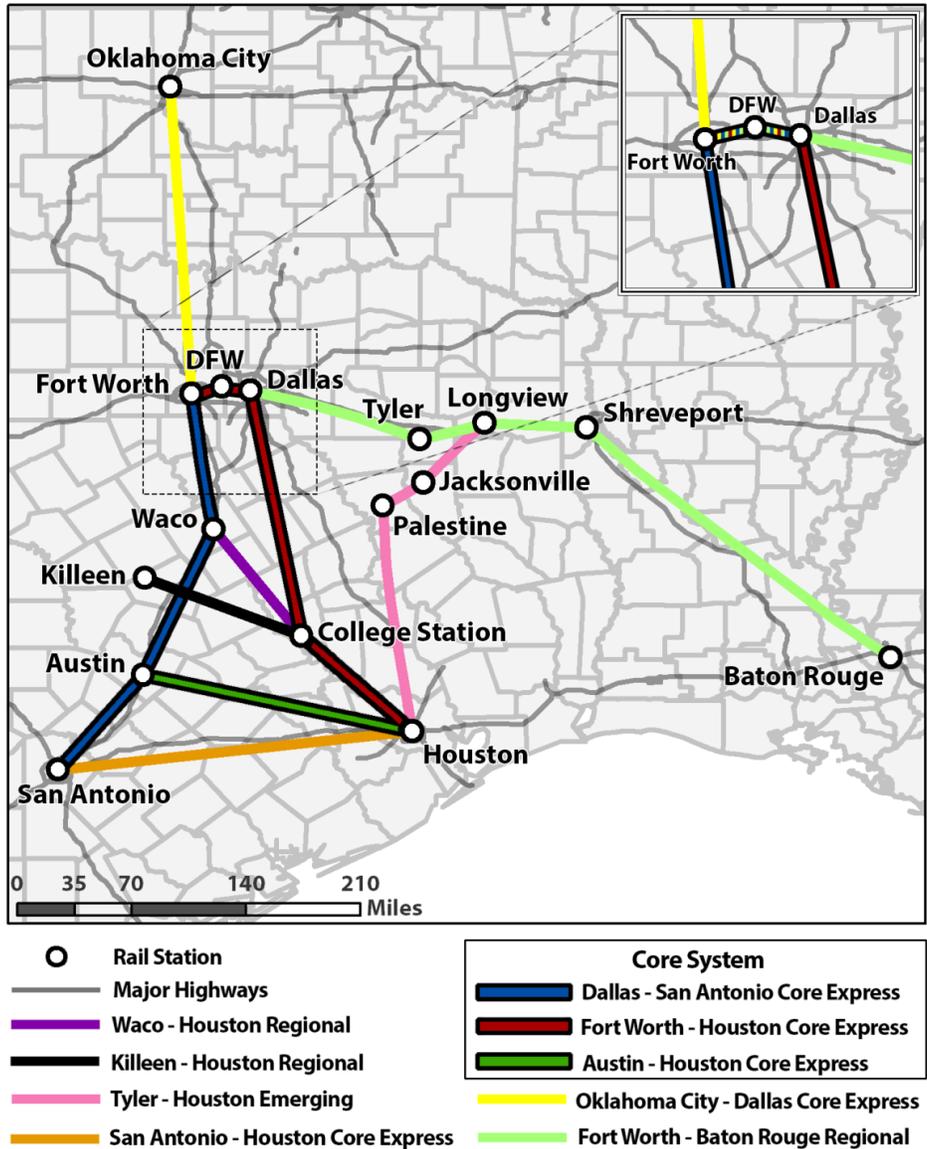


Figure 7: Expanded System Route Concept

Results

After each of the new corridors was added, the performance of the new system was compared to the performance of the Core System in terms of ridership and travel utility. A system performance summary, which includes total annualized costs, 2035 ridership, fare box revenue, and cost effectiveness of the seven intercity passenger rail systems, is presented in Table 25.

Daily ridership (typical weekday) was forecast for 2035 for the proposed high speed rail service for the Core System with the SAM-V2.5. An additional factor was applied to these results to derive weekend ridership⁸. Table 22 depicts 2035 daily and annual ridership for the Core System.

Table 22: Core System 2035 Ridership

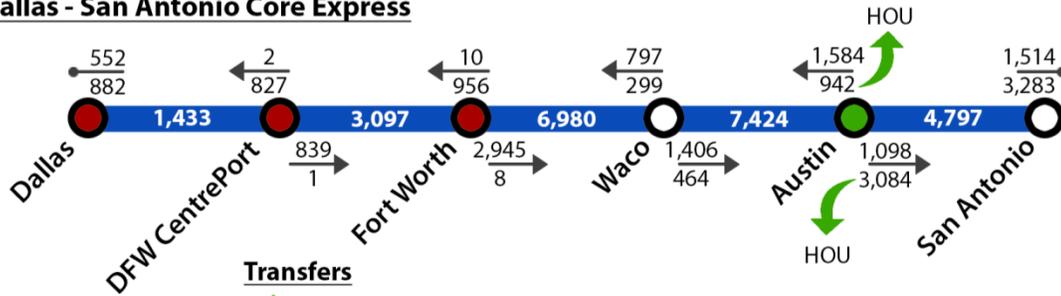
Period	Weekday-Daily (Mon. – Thurs.)	Annual Weekday (Mon. – Thurs.)	Weekend-Daily (Fri. – Sun.)	Annual Weekend (Fri. – Sun.)	Total 2035 Annual Ridership	Annual Average Daily
Dallas-San Antonio Ridership	10,747	2,235,352	22,781	3,576,563	5,811,915	15,923
Fort Worth-Houston Ridership	6,244	1,298,801	13,236	2,078,082	3,376,883	9,252
Austin-Houston Ridership	11,559	2,404,308	24,503	3,846,893	6,251,201	17,127
Systemwide Total	28,550	5,938,461	60,519	9,501,538	15,439,999	42,301

Figure 8 on the next page shows 2035 daily weekday ridership on each segment of each route in the Core System, along with passenger boardings (on) and alightings (off) at each station. The colored arrows represent transfers made by passengers to other routes (minimum 10 passengers).

⁸ The 2009 National Household Transportation Survey (NHTS) provides the basis for the calculation of weekend ridership that is paired with the weekday ridership forecast with the Statewide Analysis Model (SAM). The NHTS allowed for an examination of Weekday (Mon-Thurs) long distance travel (150 miles or more) as compared with weekend (Fri-Sun) long distance travel.

As shown in Figure 8, there were negligible transfers between the Dallas/ Fort Worth to Houston and the Dallas/ Fort Worth to San Antonio corridors. This is due to the nature of the geography for those two corridors, which essentially form the sides of a triangle. For example, the cost and trip time required to get between Houston and Waco would not be competitive via transfer between the two core express routes (going through Dallas/ Fort Worth) as compared to either driving or flying directly between the two cities. As a result, there was little system effect to the individual corridor ridership of including these two corridors together in a system. However, the ridership was increased by combining the Austin to Houston and Dallas/ Fort Worth to San Antonio corridors in a system, as there were transfers between those two routes. In conclusion, a “triangle system” causes little increase to corridor ridership forecasts, while a “T” system would experience greater transfers and resulting increases to individual corridor ridership forecasts.

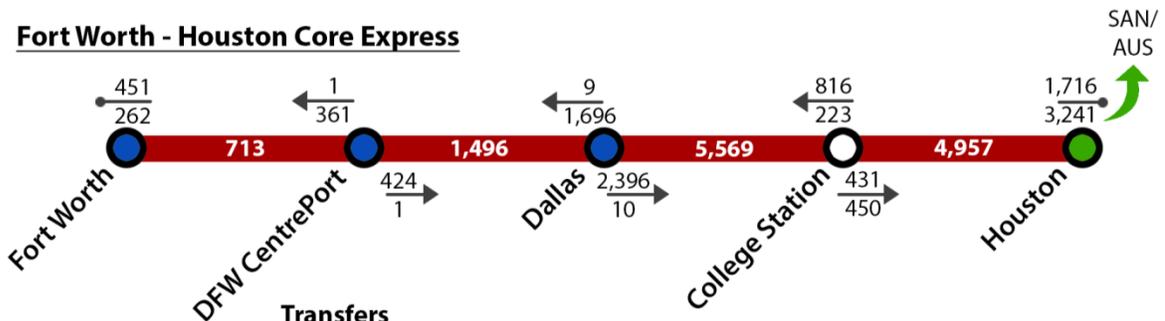
Dallas - San Antonio Core Express



Transfers

- 802 to Houston from San Antonio via Austin
- 147 to Houston from Waco via Austin

Fort Worth - Houston Core Express



Transfers

- 10 to San Antonio from College Station via Houston and Austin
- 11 to Austin from College Station via Houston

Austin - Houston Core Express



Transfers

- 61 to Waco from Houston via Austin
- 942 to San Antonio from Houston via Austin

on/off counts	daily riders	station*	transfers occurring at station

*colors represent transfer points

Figure 8: Core System Ridership by Segment

Core System Performance Measures

Performance measures, including Total Annual Revenue, Cost Recovery Ratio, and Cost per Hour of User Benefit, were calculated in order to evaluate the performance of the Core System as presented in Table 23 below.

Table 23: Core System Performance Measures

Performance Measure	Annual Fare Revenue	2035 Annual Ridership
System Total	\$1.6B	15.4M
Total Revenue: Dallas – San Antonio Core Express	\$560M	5.8M
Total Revenue: Fort Worth – Houston Core Express	\$450M	3.4M
Total Revenue: Austin – Houston Core Express	\$570M	6.2M
Cost Recovery Ratio	2.80	
Cost per Hour of User Benefit	\$195	

Using the same methodology used for the Core System, performance measures were calculated for each corridor in System 7 (fully expanded system with all corridors included as shown in Figure 9). Performance Measures for the System 7 are presented in Table 24.

Table 24: System 7 Performance Measures

Performance Measure	Annual Fare Revenue	2035 Annual Ridership
System Total	\$2.2B	20.9M
Total Revenue: Dallas – San Antonio Core Express	\$520M	4.8M
Total Revenue: Fort Worth – Houston Core Express	\$450M	3.5M
Total Revenue: Austin – Houston Core Express	\$420M	4.5M
Total Revenue: San Antonio – Houston Core Express	\$420M	3.8M
Total Revenue: Oklahoma City – Dallas Core Express	\$280M	2.3M
Total Revenue: Waco – Houston Regional Rail	\$20M	0.4M
Total Revenue: Killeen – Houston Regional Rail	\$6.7M	0.1M
Total Revenue: Tyler – Houston Emerging Rail	\$11M	0.2M
Total Revenue: Fort Worth – Baton Rouge Regional	\$100M	1.3M
Cost Recovery Ratio	2.15	
Cost per Hour of User Benefit	\$336	

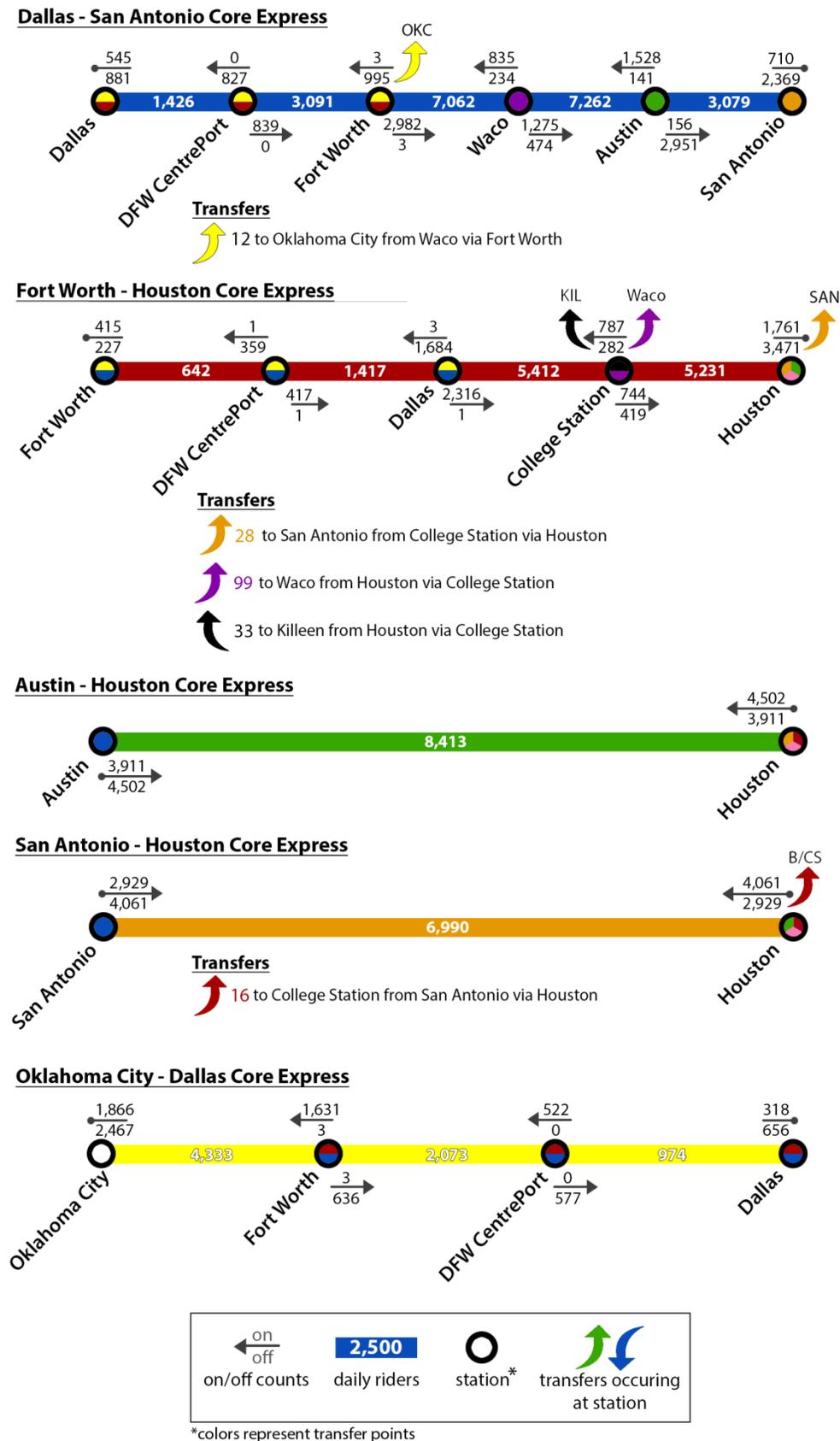
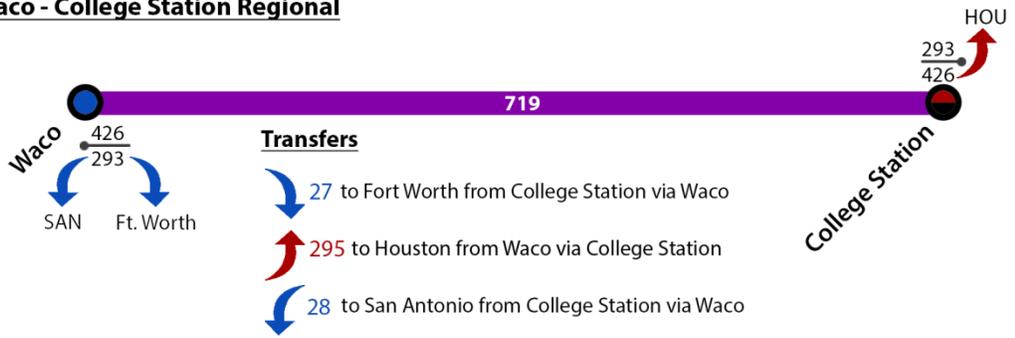
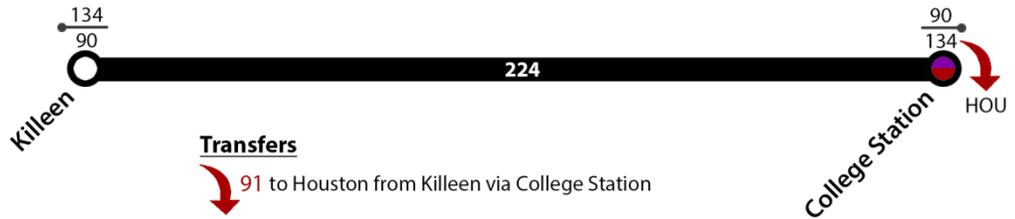


Figure 9: System 7 Ridership by Route Segment

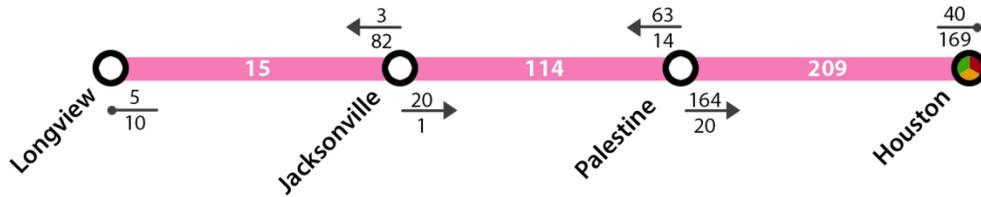
Waco - College Station Regional



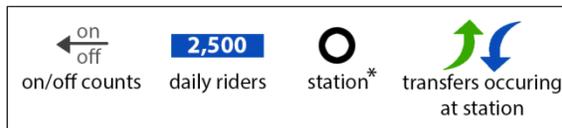
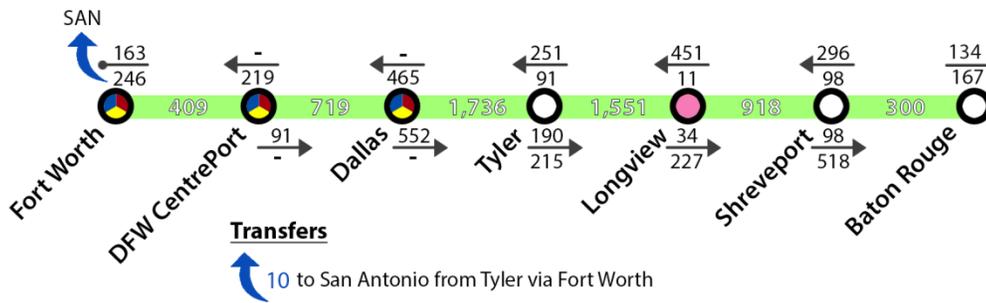
Killeen - College Station Regional



Tyler to Houston Emerging



Fort Worth - Baton Rouge Regional



*colors represent transfer points

Figure 9 (continued): System 7 Ridership by Route Segment

The system performance summary, which includes total annualized costs, 2035 ridership, fare box revenue, and cost effectiveness of the seven intercity passenger rail systems, is presented in Table 25.

Table 25: Systems Performance Summary

System	Annual O&M Cost	2035 Annual Ridership	Annual Fare Box Revenue	Annual Total System User Benefits	Cost Recovery Ratio	Cost per Hour of User Benefit
Core	\$567M	15.4M	\$1.6B	8.2M	2.80	\$195
2	\$719M	16.8M	\$1.8B	8.1M	2.54	\$250
3	\$871M	19.1M	\$2.1B	9.6M	2.41	\$256
4	\$917M	19.4M	\$2.1B	9.6M	2.29	\$267
5	\$967M	19.5M	\$2.1B	9.6M	2.18	\$280
6	\$994M	19.8M	\$2.1B	9.7M	2.13	\$291
7	\$1,034M	20.9M	\$2.2B	10M	2.15	\$336

Although individual results were not shown in this report, model runs were performed for system alternatives 2 through 6 based on incrementally adding the corridors one at a time to the Core System until all corridors shown in Figure 9 were included as shown in the System 7 results above. Results for the other system alternatives are shown in the System Optimization Technical Memorandum shown in Appendix D.

Overall, the results of this analysis show that while each additional corridor had its own independent utility, the addition of new corridors to the system caused the Cost Recovery Ratio to decrease and the Cost per Hour of User Benefit to increase due to higher system costs and somewhat redundant services. For example, the significant decrease in forecasted ridership and revenue along the Austin to Houston corridor, resulting from adding the San Antonio to Houston corridor, and the overall significant reduction in the system cost recovery ratio implies that the two core express corridors are somewhat redundant. Similar results were found for the Waco to Houston and the Killeen to Houston corridors. The lone exception to this rule was System 7, which saw a slight decrease in Cost Recovery Ratio compared to the previous system, though this is due mainly to the fact that much of the cost associated with the Fort Worth to Baton Rouge corridor added in System 7 was already accounted for in System 6 due to overlapping corridors.

6.0 Ridership Probability Analysis

An uncertainty analysis was conducted as part of the Statewide Ridership Analysis in order to provide a range of estimated annual riders for all of the corridors tested in the ridership model, rather than single point estimates. This was done to account for the variability in forecasted ridership that may be caused by the application of assumptions statewide to the various corridors as well as other corridor-specific unknown conditions. The analysis provides ridership distributions that can be utilized to estimate a range for the forecasted ridership depending on key input variables such as fare and travel speed/ trip time. This uncertainty analysis consisted of the following four components:

1. Determination of sample corridors and input variables to be tested in the ridership model for the uncertainty analysis
2. Production of ridership model runs estimating the total annual riders for each sample corridor based on variation of the input variables
3. Evaluation of ridership model outputs (total annual riders) and application of a probability distribution for each sample corridor
4. Application of sample corridor probability distributions to remaining corridors

The following technical memorandum describes the methodology used in each of the four components of the uncertainty analysis listed above, as well as the resulting distributions for the forecasted total annual riders for each corridor tested in the Statewide Ridership model, as previously described in the technical memorandum for the cost effectiveness analysis.

Approach and Key Assumptions

The first step of the uncertainty analysis was to determine which corridors would be used as the sample corridors for testing in the ridership model, which variables would be used, and how they would be varied to determine the impact on forecasted annual ridership.

The corridor with the highest forecasted ridership within each service level, based on the results of the cost effectiveness analysis, was utilized as the sample corridor for the purposes of the uncertainty analysis. The sample corridors are listed in Table 26.

Table 26: City-Pairs by Level-of-Service Analyzed (Sample Corridors)

City-Pair		Level-of-Service
Terminus 1	Terminus 2	
Austin	Houston	Core Express
Waco	Houston	Regional
Waco	Houston	Emerging

The three variables determined to have the greatest impact on ridership were selected as the variables to be utilized in the uncertainty analysis; these are listed below along with the variations in values tested in the model for each input variable.

- Passenger Rail Fare: Three fare price (in 2010 dollars) levels – high, medium, and low were tested separately for each sample corridor as listed below.
 - Core Express: federal mileage rate fare, airfare fare, and midpoint between those two fares
 - Regional: fuel cost to drive fare, federal mileage rate fare, and midpoint between those two fares
 - Emerging: fuel cost to drive fare, federal mileage rate fare, and midpoint between those two fares
- Passenger Rail Average Operating Speed (determines trip time)
 - Core Express: 125 mph, 135 mph, 150 mph, 165 mph, 175 mph
 - Regional: 60 mph, 75 mph, 90 mph, 100 mph
 - Emerging: 30 mph, 40 mph, 50 mph, 60 mph
- Passenger Rail Weekend Ridership Factor
 - All levels of service: 0.6, 1.0, 1.6

The uncertainty analysis was intended to account for the different characteristics between corridors even though the Statewide Ridership Model used consistent assumptions statewide for all corridors as well as the uncertainty in the input variables. For example, although an average speed of 150 mph for core express service was utilized to produce ridership forecasts as reported in the technical memorandum for the cost effectiveness analysis, the actual average travel speed for a particular corridor may be higher or lower than 150 mph depending on the physical characteristics/ geometry of that corridor, which would be determined in a corridor level study. Furthermore, the fare rate per route mile for core express rail service within a particular corridor may be determined partly based on the competitiveness of available air service in that corridor and would likely vary by corridor.

The SAM-V2.5 travel demand model was utilized and run with each sample corridor included in one scenario to obtain the ridership for that specific corridor for the year 2035. For each potential intercity passenger rail corridor, different ridership was obtained with the variation of the following variables:

- Passenger Rail Fare
- Passenger Rail Average Operating Speed (determines trip time)

Fare and operating speed are important input to the SAM-V2.5 travel demand model, which affect the forecasted daily passenger rail ridership. In addition to these two variables, an off-model variable, Passenger Rail Weekend Ridership Factor, was also varied to examine the impact on the annual passenger rail ridership.

The resulting values of forecasted 2035 annual ridership associated with the variation in input values for each sample corridor are shown in Tables 27 through 29.

The forecasted annual ridership varies dramatically resulting from the changes in input variables tested. Changes in fare had the greatest impact on the forecasted annual ridership, with ridership increasing as the tested fares were decreased. The factor for weekend ridership was also varied to account for the fact that the Statewide Ridership Model only produces weekday ridership forecasts. The values used for the variation of this factor were based on NHTS survey data as well as weekend ridership vs. weekday ridership for other existing rail services and other ridership forecasting models. The forecasted annual ridership increased proportionally with the factor for weekend ridership.

Additionally, the forecasted annual ridership increased as the assumed average travel speeds were increased, since this would reduce trip times. The trip time is a major component of the mode choice model, though the model calculates trip time based on the input value of average travel speed.

Table 27: 2035 Ridership Data for Core Express Passenger Rail Service Sample Corridor
(Austin to Houston)

Basis of Fare	Passenger Rail Fare	Avg. Speed (MPH)	Factor for Weekend Ridership	Week Daily Riders	Average Daily Riders	Total Annual Riders
Mileage	\$ 91.57	175	1.6	10,965	16,246	5,929,933
Mileage	\$ 91.57	165	1.6	10,691	15,840	5,781,474
Mileage	\$ 91.57	150	1.6	10,218	15,140	5,526,074
Mileage	\$ 91.57	135	1.6	9,654	14,304	5,220,936
Mileage	\$ 91.57	125	1.6	9,213	13,650	4,982,172
Mileage	\$ 91.57	175	1.0	10,965	12,497	4,561,487
Mileage	\$ 91.57	165	1.0	10,691	12,184	4,447,287
Mileage	\$ 91.57	150	1.0	10,218	11,646	4,250,826
Mileage	\$ 91.57	135	1.0	9,654	11,003	4,016,105
Mileage	\$ 91.57	125	1.0	9,213	10,500	3,832,440
Mileage	\$ 91.57	175	0.6	10,965	9,998	3,649,189
Mileage	\$ 91.57	165	0.6	10,691	9,747	3,557,830
Mileage	\$ 91.57	150	0.6	10,218	9,317	3,400,661
Mileage	\$ 91.57	135	0.6	9,654	8,802	3,212,884
Mileage	\$ 91.57	125	0.6	9,213	8,400	3,065,952
Mid-point	\$ 134.79	175	1.6	5,883	8,716	3,181,427
Mid-point	\$ 134.79	165	1.6	5,681	8,418	3,072,414
Mid-point	\$ 134.79	150	1.6	5,334	7,904	2,884,798
Mid-point	\$ 134.79	135	1.6	4,921	7,291	2,661,160
Mid-point	\$ 134.79	125	1.6	4,599	6,814	2,487,007
Mid-point	\$ 134.79	175	1.0	5,883	6,705	2,447,252
Mid-point	\$ 134.79	165	1.0	5,681	6,475	2,363,395
Mid-point	\$ 134.79	150	1.0	5,334	6,080	2,219,075
Mid-point	\$ 134.79	135	1.0	4,921	5,608	2,047,046
Mid-point	\$ 134.79	125	1.0	4,599	5,241	1,913,083

Basis of Fare	Passenger Rail Fare	Avg. Speed (MPH)	Factor for Weekend Ridership	Week Daily Riders	Average Daily Riders	Total Annual Riders
Mid-point	\$ 134.79	175	0.6	5,883	5,364	1,957,802
Mid-point	\$ 134.79	165	0.6	5,681	5,180	1,890,716
Mid-point	\$ 134.79	150	0.6	5,334	4,864	1,775,260
Mid-point	\$ 134.79	135	0.6	4,921	4,487	1,637,637
Mid-point	\$ 134.79	125	0.6	4,599	4,193	1,530,466
Air	\$ 178.00	175	1.6	2,681	3,973	1,450,080
Air	\$ 178.00	165	1.6	2,551	3,779	1,379,330
Air	\$ 178.00	150	1.6	2,330	3,452	1,260,070
Air	\$ 178.00	135	1.6	2,075	3,075	1,122,430
Air	\$ 178.00	125	1.6	1,884	2,792	1,018,956
Air	\$ 178.00	175	1.0	2,681	3,056	1,115,446
Air	\$ 178.00	165	1.0	2,551	2,907	1,061,023
Air	\$ 178.00	150	1.0	2,330	2,656	969,284
Air	\$ 178.00	135	1.0	2,075	2,365	863,407
Air	\$ 178.00	125	1.0	1,884	2,147	783,813
Air	\$ 178.00	175	0.6	2,681	2,445	892,357
Air	\$ 178.00	165	0.6	2,551	2,326	848,818
Air	\$ 178.00	150	0.6	2,330	2,124	775,428
Air	\$ 178.00	135	0.6	2,075	1,892	690,726
Air	\$ 178.00	125	0.6	1,884	1,718	627,050

Table 28: 2035 Ridership Data for Regional Passenger Rail Service Sample Corridor
(Waco to Houston)

Basis of Fare	Passenger Rail Fare	Avg. Speed (MPH)	Factor for Weekend Ridership	Week Daily Riders	Average Daily Riders	Total Annual Riders
Fuel	\$ 32.11	100	1.6	10,762	15,946	5,820,265
Fuel	\$ 32.11	90	1.6	9,986	14,795	5,400,282
Fuel	\$ 32.11	75	1.6	8,538	12,650	4,617,236
Fuel	\$ 32.11	60	1.6	6,589	9,763	3,563,326
Fuel	\$ 32.11	100	1.0	10,762	12,266	4,477,127
Fuel	\$ 32.11	90	1.0	9,986	11,381	4,154,063
Fuel	\$ 32.11	75	1.0	8,538	9,731	3,551,720
Fuel	\$ 32.11	60	1.0	6,589	7,510	2,741,020
Fuel	\$ 32.11	100	0.6	10,762	9,813	3,581,702
Fuel	\$ 32.11	90	0.6	9,986	9,105	3,323,251
Fuel	\$ 32.11	75	0.6	8,538	7,785	2,841,376
Fuel	\$ 32.11	60	0.6	6,589	6,008	2,192,816
Mid-point	\$ 66.28	100	1.6	6,066	8,987	3,280,226
Mid-point	\$ 66.28	90	1.6	5,486	8,128	2,966,805
Mid-point	\$ 66.28	75	1.6	4,510	6,682	2,438,769
Mid-point	\$ 66.28	60	1.6	3,310	4,904	1,790,060
Mid-point	\$ 66.28	100	1.0	6,066	6,913	2,523,251
Mid-point	\$ 66.28	90	1.0	5,486	6,252	2,282,158
Mid-point	\$ 66.28	75	1.0	4,510	5,140	1,875,976
Mid-point	\$ 66.28	60	1.0	3,310	3,773	1,376,970
Mid-point	\$ 66.28	100	0.6	6,066	5,530	2,018,601
Mid-point	\$ 66.28	90	0.6	5,486	5,002	1,825,726
Mid-point	\$ 66.28	75	0.6	4,510	4,112	1,500,781
Mid-point	\$ 66.28	60	0.6	3,310	3,018	1,101,576

Basis of Fare	Passenger Rail Fare	Avg. Speed (MPH)	Factor for Weekend Ridership	Week Daily Riders	Average Daily Riders	Total Annual Riders
Mileage	\$ 100.46	100	1.6	3,273	4,850	1,770,094
Mileage	\$ 100.46	90	1.6	2,941	4,357	1,590,284
Mileage	\$ 100.46	75	1.6	2,417	3,581	1,307,151
Mileage	\$ 100.46	60	1.6	1,792	2,655	969,028
Mileage	\$ 100.46	100	1.0	3,273	3,730	1,361,611
Mileage	\$ 100.46	90	1.0	2,941	3,351	1,223,295
Mileage	\$ 100.46	75	1.0	2,417	2,755	1,005,501
Mileage	\$ 100.46	60	1.0	1,792	2,042	745,406
Mileage	\$ 100.46	100	0.6	3,273	2,984	1,089,289
Mileage	\$ 100.46	90	0.6	2,941	2,681	978,636
Mileage	\$ 100.46	75	0.6	2,417	2,204	804,401
Mileage	\$ 100.46	60	0.6	1,792	1,634	596,325

Table 29: 2035 Ridership Data for Emerging Passenger Rail Service Sample Corridor
(Waco to Houston)

Basis of Fare	Passenger Rail Fare	Avg. Speed (MPH)	Factor for Weekend Ridership	Week Daily Riders	Average Daily Riders	Total Annual Riders
Fuel	\$ 33.71	60	1.6	5,710	8,460	3,087,929
Fuel	\$ 33.71	50	1.6	4,247	6,292	2,296,525
Fuel	\$ 33.71	40	1.6	2,735	4,052	1,479,069
Fuel	\$ 33.71	30	1.6	1,372	2,033	742,164
Fuel	\$ 33.71	60	1.0	5,710	6,508	2,375,330
Fuel	\$ 33.71	50	1.0	4,247	4,840	1,766,558
Fuel	\$ 33.71	40	1.0	2,735	3,117	1,137,746
Fuel	\$ 33.71	30	1.0	1,372	1,564	570,896
Fuel	\$ 33.71	60	0.6	5,710	5,206	1,900,264
Fuel	\$ 33.71	50	0.6	4,247	3,872	1,413,246
Fuel	\$ 33.71	40	0.6	2,735	2,494	910,196
Fuel	\$ 33.71	30	0.6	1,372	1,251	456,717
Mid-point	\$ 69.58	60	1.6	2,734	4,051	1,478,640
Mid-point	\$ 69.58	50	1.6	1,997	2,959	1,080,043
Mid-point	\$ 69.58	40	1.6	1,277	1,892	690,569
Mid-point	\$ 69.58	30	1.6	645	955	348,721
Mid-point	\$ 69.58	60	1.0	2,734	3,116	1,137,416
Mid-point	\$ 69.58	50	1.0	1,997	2,276	830,803
Mid-point	\$ 69.58	40	1.0	1,277	1,455	531,207
Mid-point	\$ 69.58	30	1.0	645	735	268,247
Mid-point	\$ 69.58	60	0.6	2,734	2,493	909,933
Mid-point	\$ 69.58	50	0.6	1,997	1,821	664,642
Mid-point	\$ 69.58	40	0.6	1,277	1,164	424,966
Mid-point	\$ 69.58	30	0.6	645	588	214,598
Mileage	\$ 105.45	60	1.6	1,460	2,164	789,755

Basis of Fare	Passenger Rail Fare	Avg. Speed (MPH)	Factor for Weekend Ridership	Week Daily Riders	Average Daily Riders	Total Annual Riders
Mileage	\$ 105.45	50	1.6	1,071	1,587	579,242
Mileage	\$ 105.45	40	1.6	685	1,016	370,687
Mileage	\$ 105.45	30	1.6	354	525	191,605
Mileage	\$ 105.45	60	1.0	1,460	1,664	607,504
Mileage	\$ 105.45	50	1.0	1,071	1,221	445,571
Mileage	\$ 105.45	40	1.0	685	781	285,144
Mileage	\$ 105.45	30	1.0	354	404	147,388
Mileage	\$ 105.45	60	0.6	1,460	1,332	486,003
Mileage	\$ 105.45	50	0.6	1,071	977	356,457
Mileage	\$ 105.45	40	0.6	685	625	228,115
Mileage	\$ 105.45	30	0.6	354	323	117,910

The sample data provided by the model run outputs was limited to the three sample corridors and the variations of input variable previously listed, since this analysis was applied to a statewide model rather than a corridor model. In order to produce more accurate ridership estimates for any particular corridor, the input variables tested in this uncertainty analysis as well as others that may include the location of station stops, access and egress wait times at rail stations vs. airports in the corridor, etc. should be refined and tested in the model.

For this analysis, probability distributions were fitted to the sample data utilizing visual and mathematical procedures described in Appendix E in order to apply similar distributions to all of the statewide corridors based on the modelling results for the sample corridors. The supplied sample data was loaded into Oracle's Crystal Ball software containing goodness-of-fit algorithms to statistically determine an appropriate distribution.

Predictions of occurrence or reporting the probability of a particular value based on the fitted distributions are subject to uncertainty, which arises from the following conditions:

- The true probability distribution of events may deviate from the fitted distribution, as the observed data series may not be totally representative of the real uncertainty of occurrence of the phenomenon.

- The occurrence of events in another situation or in the future may deviate from the fitted distribution as this occurrence can also be subject to random error.
- A change of environmental conditions may cause a change in the probability of occurrence for the forecasted ridership. In the case of this analysis, a change in the controlled variables such as fare has a great impact on the ridership. As a result, the probability of occurrence for a particular range of ridership is dependent upon the decision of which range of fare will be used. Although the fare may be a controllable variable, it is still an unknown variable at this stage.

The fitted probability distributions shown may not actually reflect a true probability of occurrence, since the variable with the greatest impact on the annual forecasted ridership is the fare, which is a controllable variable and would therefore be optimized making the probability actually higher for some of the higher ridership values. However, at this stage the fare for each corridor is still unknown.

Distribution Fitting Results

Table 30 presents the forecasted 2035 intercity passenger rail annual ridership for the 3 sample corridors with the associated probability of occurrence in 5% increments, excluding the extremes of the distribution. The probability of the forecasted annual ridership for the first city-pair/level-of-service corridor listed can be communicated by the following statement: “There is a 70-percent probability that the annual ridership will be between 1.1 and 4.1 million riders for the Austin-Houston core express corridor.” As the variables are further defined, the range of estimated values for annual ridership for any given level of confidence will become smaller.

Table 30: Annual Ridership with Associated Confidence Level

Probability	Austin – Houston /Core Express	Waco – Houston /Regional	Waco – Houston /Emerging
85%	1,058,862	1,069,013	276,529
80%	1,203,128	1,192,508	323,945
75%	1,342,462	1,312,013	371,053
70%	1,481,288	1,431,284	419,168
65%	1,622,715	1,552,978	469,307
60%	1,769,382	1,679,364	522,417
55%	1,923,888	1,812,692	579,516
50%	2,089,111	1,955,461	641,800
45%	2,268,524	2,110,701	710,777
40%	2,466,616	2,282,337	788,464
35%	2,689,557	2,475,772	877,693
30%	2,946,344	2,698,898	982,677
25%	3,251,030	2,964,057	1,110,103
20%	3,627,533	3,292,274	1,271,534
15%	4,121,770	3,723,967	1,489,562

Application of Sample Corridor Distributions to Remaining Corridors

To fit the distributions from the sampled corridors to the non-sampled corridors with the same level of service, the fitted distributions were proportionally adjusted based on the relative size of a single ridership iteration that utilized the same underlying assumptions. The table below displays an example relationship for core express service. The Austin – Houston corridor was sampled and the Houston – San Antonio corridor was not sampled.

Table 31: Example Relative Scale Comparison between Sampled and Non-Sampled Corridor

Austin – Houston Annual Ridership	Houston – San Antonio Annual Ridership	Relative Size
5,526,074	4,164,160	75.35%

This relational methodology assumed that the distribution derived from the sampled corridors would retain its shape for the non-sampled corridors. The only change in the distribution applied to the non-sampled corridors would be the ridership values assigned at

each confidence interval along the distribution. This methodology assumes that the impact of fare and travel speed/ trip time on forecasted annual ridership would remain relatively consistent between corridors within each level of service. In addition to the bulleted reasons for uncertainty listed previously, applying a probability distribution from a sampled corridor to a non-sampled corridor causes the uncertainty to be enhanced.

Core Express Corridors

The results from fitting the scaled ridership probability distribution from the sample corridor to the remaining non-sample core express service corridors are shown in Table 32. The table shows the ranges of ridership for each corridor with a 70% probability of occurrence.

The Austin-Houston core express service corridor had the highest forecasted ridership, followed by Dallas to San Antonio, then Houston to San Antonio and Fort Worth to Houston (through Dallas). It should be noted however, that the Dallas-Fort Worth to Houston corridor has air service within the corridor at a level of competitiveness far above the other corridors as compared to the assumed passenger rail service. For example, there are approximately 50 flights each way with average fares comparable to the federal mileage rate for the Dallas-Fort Worth corridor, while there are only 10 to 15 flights per day in each direction with fares well above the federal mileage rate in the Austin to Houston corridor. As a result, the Dallas-Fort Worth to Houston corridor may warrant further detailed analysis to determine the impact of corridor-specific fares and travel speed/ trip times (competitive with air service) on forecasted ridership, since the overall travel demand for that corridor is actually significantly higher than the Austin to Houston corridor.

Table 32: Core Express Service Ridership Uncertainty Results

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Austin	Houston	\$11B	\$125M	1.1M – 4.1M
Houston	San Antonio	\$13.3B	\$152M	0.8M – 3.1M
Dallas	Houston	\$18.3B	\$209M	0.7M – 2.7M
Dallas	Austin	\$15.2B	\$273M	0.8M – 2.9M
Fort Worth	Houston	\$20.4B	\$234M	0.7M – 2.8M
Dallas	San Antonio	\$20.4B	\$234M	0.9M – 3.7M
Dallas	Oklahoma City	\$15.5B	\$177M	0.5M – 1.8M
DFW/ Airport	Houston	\$19.2B	\$220M	0.5M – 2.1M
Austin	San Antonio	\$5.4B	\$61M	52K – 201K

Regional Corridors

The results from fitting the scaled ridership probability distribution from the sample corridor to the remaining non-sample regional service corridors are shown in Table 33. The table shows the ranges of ridership for each corridor with a 70% probability of occurrence. The Waco to Houston regional service corridor had the highest forecasted ridership, followed by Fort Worth to Baton Rouge.

Table 33: Regional Service Ridership Uncertainty Results

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Waco	Houston	\$6.3B	\$91M	1.1M – 3.7M
Fort Worth	Bryan-College Station	\$6.8B	\$97M	0.7M – 2.3M
Houston	Killeen	\$6.6B	\$94M	0.7M – 2.3M
Tyler	Houston	\$6.9B	\$99M	0.4M – 1.5M
Fort Worth	Baton Rouge	\$14.8B	\$215M	1M – 3.5M

Emerging Corridors

The results from fitting the scaled ridership probability distribution from the sample corridor to the remaining non-sample emerging service corridors are shown in Table 34. The table shows the ranges of ridership for each corridor with a 70% probability of occurrence. The Waco to Houston and Tyler to Houston emerging service corridors had the highest forecasted ridership.

Table 34: Emerging Service Ridership Uncertainty Results

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Waco	Houston	\$3.1B	\$19M	0.3M – 1.5M
Tyler	Houston	\$4.6B	\$27M	0.3M – 1.5M
Killeen	Houston	\$3.5B	\$20M	0.2M – 0.9M
Fort Worth	Baton Rouge	\$7.4B	\$44M	0.2M – 0.5M
Fort Worth	Bryan-College Station	\$3.4B	\$20M	90K – 0.5M
Beaumont	Brownsville	\$8.1B	\$48M	0.2M – 1M

Dallas/ Fort Worth to Houston and Dallas/ Fort Worth to San Antonio Corridors

The preliminary ridership results as produced in the cost effectiveness analysis and probability analysis tasks showed the forecasted ridership for the Dallas/ Fort Worth to Houston corridor to be significantly lower than some of the other core express service corridors evaluated, such as the Austin to Houston and Dallas to San Antonio corridors. However, these results were further analyzed, since the Dallas/ Fort Worth to Houston corridor has an overall higher number of intercity travellers (all modes combined) than the other corridors. It was determined that the highly competitive nature of air service within the Dallas/ Fort Worth to Houston corridor, with two major airports at each terminus and approximately 50 flights per day in each direction at fares nearly equal to the federal mileage rate, would require the assumptions for high speed rail service in that corridor would need to be modified to be more competitive with the air service. As a result, an optimized run was performed for the Dallas/ Fort Worth to Houston corridor to better reflect the likely characteristics of potential high speed rail service in that corridor. The characteristics utilized in the optimized model run were based on publicized assumptions being used by the Texas Central Railway, the private consortium currently pursuing high speed rail between Dallas/ Fort Worth and Houston, which consisted of the modifications listed below.

- Removed station stop at College Station
- Reduced fare to 80% of average airfare (\$108 between Dallas and Houston)
- Increased average travel speed to 160 mph to produce an approximate trip time of 90 minutes between Dallas and Houston

The above listed modifications results in a forecasted ridership that more than doubled from the original model run for the Dallas/ Fort Worth to Houston corridor, increasing from 3.8 million annual riders to 7.8 million annual riders. The estimated capital costs also changed for the modified Dallas/ Fort Worth to Houston corridor, since removing the College Station stop allowed for a more direct route and reduced the route length (reduced capital cost) and the revised ridership forecast required additional trainsets to provide the required capacity (increased capital cost). The estimated annual operating and maintenance costs were also revised to account for the additional trainsets, and therefore train miles, that would be required by the increased ridership.

Following the analysis of the Dallas/ Fort Worth to Houston corridors, the remaining core express corridors were reviewed to determine if they had similarly competitive air service. Of the remaining core express corridors, only the Dallas to San Antonio corridor has air service with fares nearly equal to or less than the federal mileage rate fare used in the model as the low fare for high speed rail service. As a result, an optimized run was performed for the

Dallas to San Antonio corridor with the high speed rail fare reduced to 80% of the average airfare. The reduction in the fare for the Dallas to San Antonio corridor resulted in an 80% increase in high speed rail ridership from 4.9 million annual riders to 8.8 million annual riders. The estimated capital costs were also modified for the modified Dallas to San Antonio corridor, since the revised ridership forecast required additional trainsets to provide the required capacity (increased capital cost). The estimated annual operating and maintenance costs were also revised to account for the additional trainsets, and therefore train miles, that would be required by the increased ridership.

Detailed results from the optimized Dallas/ Fort Worth to Houston and Dallas to San Antonio core express service corridors are shown in Appendix F of this report. The probability distribution was then revised for the Dallas/ Fort Worth to Houston and Dallas to San Antonio core express corridors based on the modified ridership data. Table 35 shows the ranges of forecasted ridership for the core express service corridors, with the values revised for the Dallas/ Fort Worth to Houston corridors based on the above discussed modified assumptions.

Table 35: Core Express Service Ridership Uncertainty Results – Dallas/ Fort Worth to Houston and Dallas to San Antonio Corridors

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Dallas	Houston	\$16.8B	\$266M	1.5M – 5.7M
Fort Worth	Houston	\$19B	\$301M	1.5M – 5.8M
DFW/ Airport	Houston	\$17.4B	\$276M	1.5M – 5.4M
Dallas	San Antonio	\$20.7B	\$351	1.7M – 6.5M

The results of the optimized runs further demonstrate the direct relationship between the fare and forecasted ridership for the potential intercity passenger rail corridors. While the probability analysis accounted for variations in fares, the optimized runs shown in Table 35 were performed to account for corridors where there was little difference between the low fares (federal mileage rate) and high fares (airfare).

7.0 Summary of Results

The Statewide Ridership Analysis was completed to provide a high level evaluation of forecasted ridership and cost effectiveness for various corridors in the state in order to determine which corridors may warrant further analysis, should funding become available, and what level(s) of service may be supported by the different corridors. The analysis was not intended to provide a detailed ridership analysis of any individual corridor, since many assumptions were applied to all of the corridors statewide and would need to be modified to more accurately reflect the characteristics of any particular corridor. However, care was taken to account for the variability and uncertainty in the forecasted ridership results produced as reported in ranges shown in the summary tables below.

Table 36: Core Express Service Ridership Summary Results^{9 10}

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Austin	Houston	\$11B	\$125M	1.1M – 4.1M
Houston	San Antonio	\$13.3B	\$152M	0.8M – 3.1M
Dallas	Houston	\$16.8B	\$266M	1.5M – 5.7M
Dallas	Austin	\$15.2B	\$273M	0.8M – 2.9M
Fort Worth	Houston	\$19B	\$301M	1.5M – 5.8M
Dallas	San Antonio	\$20.7B	\$351M	1.7M – 6.5M
Dallas	Oklahoma City	\$15.5B	\$177M	0.5M – 1.8M
DFW/ Airport	Houston	\$17.4B	\$276M	1.5M – 5.4M
Austin	San Antonio	\$5.4B	\$61M	52K – 201K

⁹ Dallas/ Fort Worth region to Houston and Dallas to San Antonio corridor results shown in Table 36 are based on the optimized model runs performed with decreased fares to account for competitive air fares in those corridors rather than federal mileage rate fares utilized for other corridors.

¹⁰ Forecasted passenger rail ridership reported does not include induced ridership.

Table 37: Regional Service Ridership Summary Results¹¹

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Waco	Houston	\$6.3B	\$91M	1.1M – 3.7M
Fort Worth	Bryan-College Station	\$6.8B	\$97M	0.7M – 2.3M
Houston	Killeen	\$6.6B	\$94M	0.7M – 2.3M
Tyler	Houston	\$6.9B	\$99M	0.4M – 1.5M
Fort Worth	Baton Rouge	\$14.8B	\$215M	1M – 3.5M

Table 38: Emerging Service Ridership Summary Results¹²

Origin	Destination	Upfront Capital Cost	Annual O&M Cost	2035 Annual Ridership (P70)
Waco	Houston	\$3.1B	\$19M	0.3M – 1.5M
Tyler	Houston	\$4.6B	\$27M	0.3M – 1.5M
Killeen	Houston	\$3.5B	\$20M	0.2M – 0.9M
Fort Worth	Baton Rouge	\$7.4B	\$44M	0.2M – 0.5M
Fort Worth	Bryan-College Station	\$3.4B	\$20M	90K – 0.5M
Beaumont	Brownsville	\$8.1B	\$48M	0.2M – 1M

The ridership forecasts shown in the tables above are based on the corridors being implemented singularly, and do not account for the corridors acting as part of a system. A Core System was evaluated by combining high-performing individual corridors based on professional judgment and the rankings from the travel market and cost effectiveness analyses. The Core System is shown in Figure 10 and the resulting performance of the Core System is summarized in Table 39.

¹¹ Forecasted passenger rail ridership reported does not include induced ridership.

¹² Forecasted passenger rail ridership reported does not include induced ridership.

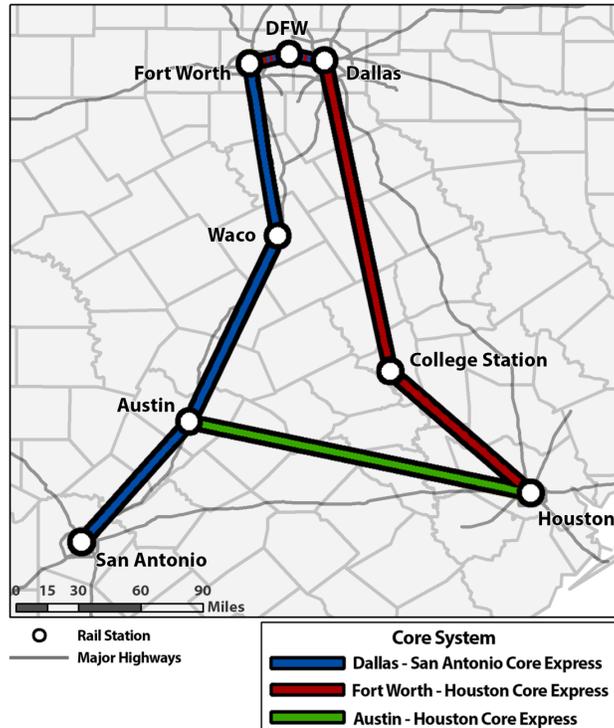


Figure10: Core System Route Concept

Table 39: Core System Performance Measures¹³

Performance Measure	Upfront Capital Cost	2035 Annual Ridership
System Total	\$48.5	4.3M – 16.4M
Total Revenue: Dallas – San Antonio Core Express	\$20.7B	1.7M – 6.5M
Total Revenue: Fort Worth – Houston Core Express	\$16.8B	1.5M – 5.8M
Total Revenue: Austin – Houston Core Express	\$11B	1.1M – 4.1M

After the Core System was run, additional corridors were added iteratively to the Core System to create new candidate systems. When run together in various combinations as part of a system, the results generally showed that while each additional corridor had its own independent utility, the addition of new corridors to the core system caused the cost effectiveness of the system to decrease due to higher system costs and somewhat redundant services. For example, the decrease in forecasted ridership and revenue along the Austin to Houston corridor resulting from adding the San Antonio to Houston corridor

¹³ Dallas/ Fort Worth region to Houston and Dallas to San Antonio corridor results shown in Table 39 are based on the optimized model runs performed with decreased fares to account for competitive air fares in those corridors rather than federal mileage rate fares utilized for other corridors.

and the overall significant reduction in the system cost recovery ratio implies that the two core express corridors are somewhat redundant. Similar results were found for the Waco to Houston and Killeen to Houston corridors.

Additionally, there were negligible transfers between the Dallas/ Fort Worth to Houston and the Dallas/ Fort Worth to San Antonio corridors. This is due to the nature of the geography for those two corridors, which essentially form the sides of a triangle. For example, the cost and trip time required to get between Houston and Waco would not be competitive via transfer between the two core express routes (going through Dallas/ Fort Worth) as compared to either driving or flying directly between the two cities. As a result, there was little system effect to the individual corridor ridership of including these two corridors together in a system. However, the ridership was increased by combining the Austin to Houston and Dallas/ Fort Worth to San Antonio corridors in a system, as there were transfers between those two routes. In conclusion, a “triangle system” causes little increase to corridor ridership forecasts, while a “T” system would experience greater transfers and resulting increases to individual corridor ridership forecasts.

Lastly, the mode share of each of the corridors analyzed in the system optimization analysis was evaluated as shown in Table 40. As previously discussed, modification of the fare has a significant impact on the forecasted passenger rail ridership and would therefore impact the mode shares shown below.

Table 40: Corridor Mode Share Summary Results (based on federal mileage rate used for passenger rail fare)

Corridor	Upfront Capital Cost	Auto Mode Share	Air Mode Share	Intercity Passenger Rail Mode Share
Dallas – San Antonio Core Express	\$20.7B	25%	12%	63%
Fort Worth – Houston Core Express	\$19B	39%	8%	53%
Austin – Houston Core Express	\$11B	50%	3%	47%
San Antonio – Houston Core Express	\$13.3B	56%	5%	39%
Oklahoma City – Dallas Core Express	\$15.5B	60%	9%	31%
Waco – Houston Regional Rail	\$6.3B	99%	0%	1%
Killeen – Houston Regional Rail	\$6.6B	99%	0%	1%
Tyler – Houston Emerging Rail	\$4.6B	88%	5%	7%
Fort Worth-Baton Rouge Regional Rail	\$14.8B	36%	62%	2%

Appendices

Appendix A - Matrix of City Pairs and Service Level Assumptions

Appendix B – Probability Analysis of Cost Estimates Technical Memorandum

Appendix C – Cost Effectiveness Analysis Technical Memorandum

Appendix D – System Optimization Analysis Technical Memorandum

Appendix E – Probability Analysis Technical Memorandum

Appendix F – Optimized Dallas/ Fort Worth to Houston and Dallas/ Fort Worth to San Antonio Model Results

This report was written on behalf of the Texas Department of Transportation by



701 Brazos, Suite 450
Austin, TX 78701
Tel (512) 691-2213
www.hntb.com



11500 Metric Blvd.
Bldg. M-1, Suite 150
Austin, TX 78758
www.alliance-transportation.com

Exhibit 3

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

Finance Docket No. 36025

**TEXAS CENTRAL RAILROAD AND INFRASTRUCTURE, INC. &
TEXAS CENTRAL RAILROAD, LLC
-AUTHORITY TO CONSTRUCT AND OPERATE-
PASSENGER RAIL LINE BETWEEN DALLAS, TX AND HOUSTON, TX**

**Verified Statement of John T. Harding
In Support of Reply to Petition for Exemption**

1. My name is John T. Harding. As Chief Maglev¹ Scientist for the U.S. Department of Transportation, Federal Railroad Administration (“FRA”) from 1976-2004, I participated in and contributed to several High Speed Rail (“HSR”) and Maglev deployment studies commissioned by Congress.

2. I am a consultant in transportation technology and economics. In addition to my experience at the FRA, I obtained a Ph.D. in Physics from California Institute of Technology in 1958, and a MA equivalency in Economics from University of California at Berkeley in 1978.

3. In preparation for this statement, I have reviewed:

- a. The Petition for Exemption (“Petition”) filed by Texas Central Railroad and Infrastructure, Inc. and Texas Central Railroad, LLC (“TCR”);
- b. Redacted portions of the Texas Central High Speed Rail Feasibility Study by the Louis Berger Group dated February 2013;²

¹ Maglev (derived from magnetic levitation) is a transport method that uses magnetic levitation to move trains with magnets and electricity without touching the ground.

² TCR has not provided the full version.

- c. the Statewide Ridership Analysis Report authored by the Texas Department of Transportation (the “TxDOT Report”)³ dated December 2013;
- d. TxDOT District Traffic Maps 2014, District Base Sheet Supplemental;
- e. the TxDOT Statewide Planning Map application;⁴
- f. Numerous online studies and articles regarding high-speed rail; and
- g. Various other materials that pertain to TCR’s proposed construction of the 240-mile-long rail corridor, including materials on TCR’s website.

4. I have come to the following conclusions regarding the inadvisability of exempting TCR’s proposed high-speed rail line from the prior approval requirements of 49 U.S.C. § 10901.

COST OF PROJECT

5. The issue as I see it is whether TCR can meet operating expenses and repay lenders and investors for the \$10-\$18.3B estimated cost of the high-speed rail line from Dallas to Houston (“Dallas-Houston HSR”). Initially, I would note that \$10B for construction (TCR’s estimate in its Petition), or even \$12B (TCR’s most recent estimate), appears to be artificially low based on TCR’s estimates of \$16.8B⁵ to \$18.3B⁶ contained in the TxDOT report, and my general experience with railroads underestimating construction costs while seeking regulatory approval.

PASSENGERS PER YEAR (RIDERSHIP PROJECTIONS)

6. The TxDOT Report, dated December 2013, was written by TxDOT with input from TCR. Based on TCR’s input, TxDOT estimated the upfront capital cost of the Dallas-Houston HSR at \$18.3B.⁷ I believe this number is much more accurate than the lowball figure of \$10B

³ See Exhibit 2 to TAHSR’s Reply to Petition for Exemption.

⁴ <http://www.txdot.gov/inside-txdot/division/transportation-planning/maps/statewide-planning.html>.

⁵ TxDOT Report at 74, Table 35.

⁶ *Id.* at 71, Table 32.

⁷ *Id.*

advanced by TCR in its Petition, or the \$12B figure TCR company officials recently quoted to reporters. Further, TxDOT estimates the 2035 annual ridership between “0.7M to 2.7M passengers,” a range critically below the four million projected by TCR in its Petition. The low-end projection of 700,000 annual passengers should give the Board grave concern. The TxDOT Report also notes that “...the Dallas Fort Worth to Houston corridor has air service within the corridor at a level of competitiveness far above the other corridors as compared to the assumed passenger rail service.”⁸ This is a *negative* indication for the viability of the Dallas-Houston HSR, and may spell doom for such an expensive project.

7. It is clear from the initial ridership projections from TxDOT, and using TxDOT’s highest initial projection of 2.7M,⁹ the Dallas-Houston HSR will not be a viable undertaking. TxDOT goes on to say that TCR’s numbers would need to be “modified” for the Dallas-Houston HSR to be more competitive with air service.¹⁰ In my years of experience, I have seen many consultants and agencies “modify” numbers, but even “modifying” these numbers will not make the Dallas-Houston HSR viable.

8. TxDOT “modified” the numbers based on publicized assumptions being used by TCR.¹¹ TxDOT assumed two highly significant conditions: (1) removal of the highly touted Brazos Valley stop, and (2) reducing the rail fare to \$108.¹² TxDOT then performs undisclosed mathematical gyrations to *double* the ridership estimates. No federal regulatory agency could possibly accept a doubling of the most significant number—ridership—without supporting documentation. Again, TxDOT’s annual ridership projections ranged from 0.7M to 2.7M. Using

⁸ *Id.* at 73.

⁹ *Id.* at 71, Table 32.

¹⁰ *Id.* at 73.

¹¹ *Id.*

¹² *Id.*

its gyrations, TxDOT shows TCR's projections of annual ridership doubling to 1.5M to 5.7M.¹³ Although I question the doubling of these projections, for purposes of the Income Statements below, I will give TCR the benefit of the doubt and use the highest annual ridership estimate of 5.7M. Even using this figure, the numbers prove that the Dallas-Houston HSR will be a financial disaster.

9. Even though I am using TCR's number, it is important to thoroughly examine the current ridership disinformation circulated by TCR to gain public and political support. TCR is currently reporting to the politicians and the public that *90,000 vehicles per day currently travel between Dallas and Houston*.¹⁴ Based on TxDOT's own traffic counts, there is no support whatsoever for TCR's report of daily vehicular traffic moving between Houston and Dallas.

10. TxDOT conducts 24-hour traffic counts 365 days a year along the I-45 highway between Dallas and Houston.¹⁵ These traffic counts can be accessed using TxDOT's Statewide Planning Map application. Logically, the number of vehicles traveling between Dallas and Houston daily *must be less* than the minimum traffic point along the route. Even TCR could not debate this point.

11. The minimum traffic point occurs near Streetman, TX, and in 2014 amounted to an average annual daily traffic of 26,256 vehicles (9.58M/y), of which 40.4% are trucks.¹⁶ Of course, commercial trucks cannot be used to estimate potential for high-speed rail. Reducing 26,256

¹³ *Id.* at 74, Table 35.

¹⁴ See Exhibit 13 to TAHSR's Reply to Petition for Exemption. Online link: <https://youtu.be/k6igUibrfwc?t=49s>.

¹⁵ <http://www.txdot.gov/inside-txdot/division/transportation-planning/maps.html>.

¹⁶ See Exhibit 14 to TAHSR's Reply to Petition for Exemption, from TxDOT's Statewide Planning Map application.

vehicles by 40.4% trucks leaves 15,648 passenger vehicles. In addition, it should be noted that TxDOT only projects 39,015 vehicles/day moving between Houston and Dallas by 2034.¹⁷

12. All of these traffic counts include two types of traffic: specific Dallas to Houston traffic, and other traffic.

13. Other traffic includes two components: (1) local traffic traveling short of Dallas to Houston, for example from Corsicana to Buffalo, and (2) any long-haul traffic traveling beyond Dallas or Houston on either end. Other Traffic will likely be much greater than specific point-to-point traffic, such as Dallas to Houston. Further, I would expect a significant amount of local traffic based on my experience. TCR's consultant, the Louis Berger Group, has estimated that the specific Dallas to Houston traffic percentage would be 55%, a seemingly high figure for which no supporting data has been provided. Nonetheless, to cast TCR's project in the most favorable light, I will use TCR's consultant's 55% figure in my calculations on TxDOT traffic counts.

14. Based on my experience and background, and the available studies on HSR projects similar to TCR's, it would appear that a realistic estimate of diversion rates (or induced ridership) for Dallas to Houston vehicular traffic is below 10% of eligible passenger vehicles. Indeed, induced ridership should be constrained to less than 10% in light of fatally flawed overestimates typically used in connection with other HSR projects.

15. I would note, however, that the Berger Group uses a diversion rate (15%) which is at least 50% higher than I would opine. To give TCR the benefit of the doubt, I have used the Berger Group's 15% diversion rate in the following Traffic Study Chart, which is based on TCR's most favorable assumptions, along with TxDOT's numbers.

¹⁷ *Id.*

TxDOT TRAFFIC STUDY CHART

	<u>2014</u>	<u>2034</u>
Average Daily Minimum Traffic Count (TxDOT)	26,256	39,015
➤ Reduce by TxDOT Truck Percentage	40.4%	40.4%
➤ Total Passenger Vehicles at Minimum Traffic Spot – Streetman, TX	15,648	23,253
Dallas to Houston Factor (from the Berger Group)	55%	55%
Dallas to Houston Only Passenger Vehicles (available to divert to HSR)	8,606	12,789
Diversion Factor to HSR (from the Berger Group)	15%	15%
Maximum New HSR Passengers Per Day Diverted	1,291	1,918

16. If *on day one of operations* TCR captured its target of 20% of the 2,858 airline passengers¹⁸ (571) that on average fly between Dallas and Houston daily, and diverted its target of 15% of available Dallas to Houston passenger vehicles, its daily passenger rate would total only 1,862 passengers (571 + 1,291). This number, which is more than 9,000 passengers short of TCR’s 10,958 daily projection (4M annually), would not sustain the Dallas-Houston HSR and would undermine any environmental benefit, as the trains would be running near empty. There appears to be no reasonable likelihood that TCR could repay its investment, much less pay operating costs, with a realistic appraisal of ridership.

¹⁸ See Exhibit 12 to TAHSR’s Reply to Petition for Exemption, from U.S. Department of Transportation’s Domestic Airline Consumer Airfare Reports.

TICKET PRICE

17. In the TxDOT Report, TCR acknowledges that it must reduce ticket prices to \$108 to stimulate demand in order to achieve their “doubled” ridership statistics.¹⁹ I have used the TxDOT \$108 price for the ticket in the following financial calculations.

RETURN TO INVESTORS

18. High-speed rail (“HSR”) projects are typically regarded as risky investments, and therefore investors usually require a significant rate of return. I am aware that in the case of the Florida HSR project, investors required a 12% rate on bonds of return based on the risky nature of the project. Rather than use 12%, I have used 5% as a blended rate for debt service and investor return in my example, which represents a conservative assumption.

19. I note that the proponent of the Florida HSR issued bonds at a 12% coupon rate. Obviously, equity investors will require some guaranteed return on such a risky investment. Further, any debt to the Japanese must be repaid on an amortized schedule, and bonds will eventually need to be retired. Any traditional debt will also have to be repaid on an amortization schedule with interest and principal. When bonds are utilized in an infrastructure project, there is typically a coupon rate representing interest, and with a mandated sinking fund to retire the principal amount of the bond at maturity. In my calculations, I have used a straight 5% rate as the blended cost of debt, bonds, and investor capital, which I believe is conservative and favoring TCR. To provide context, a fully amortized payment at 2.9% interest on a 30-year amortized loan of \$12B is \$600,043,438. In comparison, a straight 5% rate on \$12B is \$600,000,000. In other words, using the straight 5% rate for purposes of my calculations on TxDOT's traffic numbers comparisons, is equivalent to using a 2.9% rate on debt and bonds, and

¹⁹ TxDOT Report at 73.

assuming that equity would want a 5% return due to the risk. Of course, as stated above, in Florida the bond investors required 12% on the HSR project, about 900 basis points over a 2.9% rate. After considering all of these factors, I have used an optimistic and conservative assumption (favoring TCR) of 5% for a weighted cost of capital, bonds, and debt.

OPERATION AND MAINTENANCE

20. Operations and maintenance costs are obviously in addition to debt service and return to investors. In my calculations, the estimated annual operations and maintenance cost (O&M) are taken directly from the TxDOT Report. I believe the O&M numbers are underestimated, based on ridership miles. Again, I have used the high-end ridership projection of 5.7M, which at 240 miles is 1,368,000,000 annual passenger miles. Using the low figure of \$266M for O&M costs provided by TCR to TxDOT, TCR's average O&M cost is \$0.19 per passenger mile. The international average is approximately \$0.30 per passenger mile, and I expect TCR's O&M costs to meet or exceed this average. As a result, using TCR's low estimate of \$266M is once again giving TCR the benefit of the doubt, underscoring the extremely conservative nature of my analysis.

INCOME STATEMENT

21. The below Income Statement gives TCR every benefit of the doubt. It applies TCR's most favorable ridership estimate as utilized by TxDOT (5.7M/year). It ignores the \$18.3B TxDOT estimate, and instead uses TCR's most recent construction cost estimate (\$12B), TCR's O&M estimate (\$266M), and the \$108 ticket cost. Even after using all of TCR's estimated numbers, its Project will run an annual loss of \$250,000,000. To clarify, this *quarter billion-dollar deficit* occurs after 20 years of operation, when the train should be running at optimal levels.

Passengers Per Year in 2035	5,700,000
Ticket Price	\$108
Gross Annual Revenue	\$615,600,000
Less Debt Service/Return to Investors (5% interest only on \$12,000,000,000 upfront capital)	<u>\$600,000,000</u>
Annual Revenue available after Debt Service/Return to Investors	\$15,600,000
Less: Annual O&M Costs	<u>\$266,000,000</u>
Annual Deficit	(\$250,400,000)
Deficit over 40 years	(\$10,016,000,000)

22. In comparison, the below Income Statement uses TCR’s ridership estimate from its Petition (4M/year), and TxDOT’s more realistic construction cost estimate (\$16.8B).

Passengers Per Year in 2035	4,000,000
Ticket Price	\$108
Gross Annual Revenue	\$432,000,000
Less Debt Service/Return to Investors (5% interest only on \$16,800,000,000 upfront capital)	<u>\$840,000,000</u>
Annual Loss after Debt Service/Return to Investors	(\$408,000,000)
Less: Annual O&M Costs	<u>\$266,000,000</u>
Annual Deficit	(\$674,000,000)
Deficit over 40 years	(\$26,960,000,000)

23. Under either scenario, the deficit over 40 years will exceed \$10 billion. Both of these scenarios are analyzing 2035, after 15 years for ridership to ramp up. One can only imagine the deficit TCR will run the first five years of the Project. Using TxDOT’s low-end ridership figure

of 700,000 (1,500,000 after the doubling) would result in immediate failure. In short, even using TCR's favorable ridership and construction cost projections, the Dallas-Houston HSR does not appear to be financially viable in either the short or long term.

24. There is another trend that the Board should consider before granting approval to construct this Project. From my review of air-traffic statistics, air ridership between Dallas and Houston has been falling dramatically since 2000. Also, there is evidence that auto travel is starting to show a decline. During economic downturns, many businesses turned to electronic means of communication, such as video conference calls. Initially this was quite expensive, and oftentimes entailed traveling to a video conference center. As the economy has rebounded, many businesses have stayed with electronic conferencing, rather than business travel, both for the cost savings and due to the lost executive time during travel. Now anyone with an Apple smart phone can conduct a video conference via FaceTime. Skype and many other programs are also available for basically cost-free video conferencing. This is a threatening development regarding feasibility of a new and expensive HSR line, constructed primarily for business travelers.

ADVISABILITY OF HIGH SPEED RAIL FOR DALLAS TO HOUSTON CORRIDOR

25. When I was Chief Scientist at the FRA, Congress required that the FRA examine the market for HSR and Maglev. Eight corridors were examined,²⁰ including the Texas Triangle between Houston, San Antonio and Dallas. Some other corridors looked more favorable, assuming that government investment covered external benefits. The Texas Triangle did not appear to be promising; however, it showed "partnership potential" for "New HSR" using a longer, wishbone-shaped, shared route via Waco. The wishbone shaped corridor presented the best potential for Texas HSR, as it allowed travel between six of Texas' major cities: Houston (4th largest city in US

²⁰ See Figures 7-8 at <http://www.fra.dot.gov/eLib/details/L02519> of which I was a contributing author.

population), San Antonio (7th), Dallas (9th), and Austin (11th), Ft. Worth (16th) and Waco. The wishbone corridor ran north and south from Dallas to Waco. It then split into two paths, southeasterly toward Houston and south towards Austin and San Antonio. This spread the enormous capital expenditure for HSR construction over a ridership base in six significant cities, including five out of the 16 most populous cities in the United States. Notably, under the wishbone-shaped corridor, the first 100 miles south from Dallas was only built once. TCR's Project would require a redundant southbound track built through Waco, if Austin and San Antonio will ever be served.

26. In contrast, TCR's proposed Dallas-Houston HSR does not incorporate the wishbone corridor's economic good sense and economies of scale, and forces the \$12B to \$18.3B expenditure to be funded by the ridership base exclusively in Houston and Dallas; hence, the certain failure.

VERIFICATION

I, John T. Harding, declare under penalty of perjury that the foregoing statement is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on May 31, 2016

/s/ John T. Harding

Exhibit 4

BAKER BOTTS LLP

98 SAN JACINTO BLVD.
SUITE 1500
AUSTIN, TEXAS
78701-4078

TEL +1 512.322.2500
FAX +1 512.322.2501
BakerBotts.com

AUSTIN	LONDON
BEIJING	MOSCOW
BRUSSELS	NEW YORK
DALLAS	PALO ALTO
DUBAI	RIO DE JANEIRO
HONG KONG	RIYADH
HOUSTON	WASHINGTON

June 2, 2015

VIA HAND DELIVERY

The Honorable Ken Paxton
Office of the Attorney General
Open Records Division
Price Daniels Building
209 W. 14th Street, 6th Floor
Austin, TX 78701

Derek McDonald
TEL: 512.322.2667
FAX: 512.322.8342
derek.mcdonald@bakerbotts.com

Re: Public Information Act Request No. 570728 regarding Texas Central High-Speed Railway, LLC

Dear General Paxton:

On March 20, 2015, Mr. Frank Reilly, an attorney at Potts and Reilly, LLP, requested information contained in the files of the Texas Department of Transportation ("TxDOT"). Mr. Reilly's final request, revised by agreement with TxDOT, asked for all information related to Texas Central High-Speed Railway, LLC ("TCR") or a proposed high-speed rail route from Harris County to Dallas County from January 1, 2009 to present, excluding news clips. On May 5, 2015, TxDOT requested a decision from your office regarding whether certain documents determined by TxDOT to be responsive are excepted from disclosure under the Texas Public Information Act. TCR received notice of Mr. Reilly's request on May 18, 2015.

TCR supports TxDOT's claims of exception and opposes the release of certain information submitted to TxDOT under a claim of confidentiality. TCR's information that is the subject of this brief includes trade secret and confidential commercial or financial information. Such information is exempt from disclosure under the Texas Public Information Act. The enclosed brief provides specific detail in support of this position. As required by law, a copy of this letter and a redacted copy of the supporting brief are being provided to Mr. Reilly.

If you have any questions, please call me at (512) 322-2667.

Very truly yours,



Derek McDonald

Enclosure

cc: Sarah Parker, Associate General Counsel, TxDOT (w/out enclosure)

Brief in Support of Texas Central High-Speed Railway LLC's Position that Certain Confidential Materials in the Files of the Texas Department of Transportation Are Protected from Disclosure under the Texas Public Information Act

I. Introduction

On March 20, 2015, Mr. Frank Reilly, an attorney at Potts and Reilly, LLP, requested information under the Texas Public Information Act ("TPIA") pertaining to Texas Central High-Speed Railway, LLC ("TCR") and contained in the files of the Texas Department of Transportation ("TxDOT"). Mr. Reilly clarified his request for the final time on April 24, 2015. TxDOT requested a formal decision from the Open Records Division of the Office of the Attorney General ("OAG") on May 5, 2015, then submitted a brief to the OAG and notified TCR on May 15, 2015. The OAG assigned number PIR #570728 to TxDOT's request.

Mr. Reilly requested inspection of anything connected to TCR or a high-speed rail route from Harris County to Dallas County from January 1, 2009 to present, excluding news clips. While some responsive information contained in TxDOT's Exhibit E, submitted to the OAG, is public information that can be disclosed, other information must not be released. Specifically, [REDACTED] must not be disclosed because this is trade secret and/or confidential commercial or financial information of TCR.

II. TCR's Response is Timely

As a threshold matter, TCR's brief is timely. TCR seeks to prevent disclosure of documents that contain confidential information excepted from disclosure by law. The TPIA requires TCR to file a brief in support of its position not later than the tenth business day after the date of receipt of notice of a TPIA request. TCR received notice of Mr. Reilly's request on May 18, 2015. Given the May 25, 2015 Memorial Day holiday, the tenth business day after the date of receipt of notice is June 2, 2015. Thus, this brief is timely.

III. Background and Summary

TCR is facilitating the construction of a high-speed passenger rail line between Dallas and Houston by securing environmental and technological regulatory approvals that will be necessary in future stages of the project. Because the construction and operation of a high-speed rail system will require various federal regulatory approvals, an Environmental Impact Statement ("EIS") for the project is being conducted by the Federal Railroad Administration ("FRA") and TxDOT pursuant to the National Environmental Policy Act ("NEPA"). The FRA and TxDOT are jointly acting as lead agencies in the preparation of an EIS. For this reason, TxDOT has requested from TCR and TCR has submitted information relevant to its proposal.

[REDACTED]

[REDACTED] excepted from disclosure under Section 552.110(a) of the TPIA because this information constitutes a trade secret. This information is also excepted from disclosure as confidential commercial or financial information under Section 552.110(b) of the TPIA.

IV. Sections [REDACTED] Do Not Contain Trade Secret or Confidential Commercial or Financial Information

As an initial matter, TCR is no longer claiming that the following sections [REDACTED] [REDACTED] are proprietary and confidential, and these sections may be released to Mr. Reilly:

- Cover Page
- Section 1 - Project Overview
- Section 2 - Review of Previous Studies
- Section 3 - Travel Market Assessment
- Section 10 - Peer Review
- Appendix A - Station Area Market Analysis
- Appendix B - SAM-V2 Mode Choice Model
- Appendix C - Potential Road Closures and Conflicts

V. TCR's Trade Secret and Confidential Commercial or Financial Information Is Excepted from Public Disclosure

A. Confidential Trade Secret Information

Section 552.110(a) of the TPIA provides that “[a] trade secret obtained from a person and privileged or confidential by statute or judicial decision” is excepted from the disclosure requirements of the TPIA.² Protection from disclosure under Section 552.110(a) of the TPIA requires TCR to make a *prima facie* case that the information at issue is trade secret under the Restatement of Torts.

1. The “Trade Secret” Criteria

The Texas Supreme Court has adopted the definition of “trade secret” from the Restatement of Torts, section 757, which holds a trade secret to be:

¹ [REDACTED]

² Tex. Gov't Code § 552.110(a).

[A]ny formula, pattern, device, or compilation of information used in one's business, and which gives him an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating, or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business...in that it is not simply information as to a single or ephemeral event in the conduct of the business...A trade secret is a process or device for continuous use in the operation of the business...[It may] relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates, or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping, or other office management.³

To evaluate an assertion of trade secret protection, the courts and OAG use the following criteria:

- (1) the extent to which the information is known outside of TCR;
- (2) the extent to which it is known by employees and others involved in the business;
- (3) the extent of measures taken by TCR to guard the secrecy of the information;
- (4) the value of the information to TCR and its competitors;
- (5) the amount of effort or money expended in developing the information; and
- (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.⁴

TCR is not required to satisfy all six factors; the Texas Supreme Court has recognized that trade secrets "do not fit neatly into each factor each time."⁵ In addition, other circumstances could also be relevant to the trade secret analysis. Thus, these factors are to be weighed in the context of the surrounding circumstances.⁶ If a *prima facie* showing is made that the information at issue constitutes a trade secret, then TxDOT must withhold the information from the requestor.

2. Application of the "Trade Secret" Criteria

The sections [REDACTED] identified in Section IV do not constitute trade secret information; however, the remainder [REDACTED] contains information that satisfies the criteria for trade secret under the Restatement.

[REDACTED]

a) [REDACTED]

[REDACTED]

³ Restatement of Torts § 757 cmt b. (1939); see *Hyde Corp. v. Huffines*, 314 S.W.2d 763, 776 (Tex. 1958), *cert. denied*, 358 U.S. 898 (1958).

⁴ Restatement of Torts § 757 cmt b. (1939).

⁵ *In re Bass*, 113 S.W.3d 735, 740 (Tex. 2003).

⁶ *Id.*

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In addition

[REDACTED]

This information is precisely the type of trade

secret information

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] As detailed above, TCR has made a *prima facie* showing
[REDACTED] constitute trade secret information [REDACTED]
[REDACTED] that must be protected under the TPIA.

B. Confidential Commercial or Financial Information

Section 552.110(b) of the TPIA states, “Commercial or financial information for which it is demonstrated based on specific factual evidence that disclosure would cause substantial competitive harm to the person from whom the information was obtained is excepted from the requirements of Section 552.021 [(the disclosure requirements)].” Section 552.110(b) requires a

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

VI. Conclusion

For the reasons outlined above, TCR has made a *prima facie* case that [REDACTED] are trade secrets excepted from disclosure under the TPIA. In addition, [REDACTED] are also excepted from disclosure because this information is confidential commercial or financial information that, if released, would cause TCR substantial competitive harm.

⁸ See, e.g., Tex. Att’y Gen. ORD No. 10987 (2005).

Exhibit 5

JURISDICTION AND VENUE

4. This Court has jurisdiction over this matter pursuant to Texas Government Code Chapter 552, also known as the Texas Public Information Act (the “Act”). Venue is mandatory in Travis County, Texas, pursuant to TEX. GOV’T CODE §552.321.

DISCOVERY AND RULE 47 STATEMENT

5. Discovery should be conducted under Level 2 of Rule 190 of the Texas Rules of Civil Procedure. Plaintiff seeks non-monetary relief in the form of a declaratory judgment, together with attorney's fees and costs.

FACTUAL BACKGROUND

TxDOT and TCR’s Non-Disclosure Agreement

6. TxDOT is assisting Texas Central High-Speed Railway, LLC (“TCR”) in its efforts to obtain, among other things, an environmental impact statement for the construction of a proposed high-speed railway between Harris County and Dallas County.

7. On October 12, 2014, TxDOT and TCR entered into an Agreement for Use and Non-Disclosure of Confidential/Proprietary Information (“NDA”) with respect to TCR’s high-speed rail projects in Texas. For purposes of the NDA, “Proprietary Information” is defined as “any and all information... disclosed by TCR to TxDOT” during the term of the NDA. As such, TxDOT has improperly agreed that *any and all information* it receives from TCR should be treated as confidential and proprietary, regardless of its content or nature.

8. TxDOT and TCR cannot rely on the NDA to avoid disclosure of public information. Information is not confidential under the Act simply because the party submitting the information anticipates or requests that it be kept confidential. *Industrial Found. v. Texas Indus. Accident Bd.*, 540 S.W.2d 668, 677 (Tex. 1976). In other words, a governmental body

cannot, through a contract, overrule or repeal provisions of the Act. *See* Tex. Atty. Gen. Op. OR2000-3228 (Tex.A.G.), 2000 WL 33970987.

Open Records Request to TxDOT

9. On March 20, 2015, attorney Frank Reilly, General Counsel for TAHSR, filed an open records request with TxDOT requesting information under the Act pertaining to TCR. As amended and clarified, Reilly requested inspection of any information connected to TCR or its proposed high-speed railway from Harris County to Dallas County, from January 1, 2009 to present.

TxDOT and TCR's attempts to block disclosure of public information

10. On May 5, 2015, TxDOT requested a formal decision from the Open Records Division of the Office of the Attorney General ("OAG"). On May 15, 2015, TxDOT submitted a brief to the OAG in support of its letter request. TxDOT claimed certain information responsive to Reilly's request is excepted from disclosure under TEX. GOV'T CODE §§552.101 (common-law privacy), 552.107 (attorney-client privilege), and 552.111 (agency memoranda).

11. TxDOT did not produce all responsive information to the OAG for review. Instead, TxDOT provided only a representative sample pursuant to TEX. GOV'T CODE §552.301(e). While providing a representative sample might be appropriate and understandable under some circumstances (to avoid production of voluminous documents of similar content and nature), much of the responsive information at issue here consists of various email communications between TxDOT, TCR, the Federal Railway Administration,¹ and other third parties spanning a six-year time frame. Consequently, providing only a "representative sample"

¹ The Federal Railway Administration is working in conjunction with TxDOT as joint lead agencies in preparing an environmental impact statement for TCR.

of such emails between numerous parties involving a wide range of topics is hardly sufficient to ensure that no public information is being improperly withheld.

12. In addition to TxDOT's efforts to withhold public information, on June 2, 2015, TCR sent a letter notifying the OAG of its opposition to the release of certain information TCR had provided to TxDOT. TCR claimed the information is excepted from disclosure under the Act because it contains trade secret and confidential commercial and financial information.

13. TCR attached a brief to its letter, purportedly to provide specific detail in support of its position that the requested information is excepted from disclosure. TCR then redacted almost the entire brief and forwarded the redacted copy to requestor Reilly. The redacted copy sent to Reilly is attached as Exhibit A.

14. The redacted brief contains no description or identification of the information that TCR claims is excepted from disclosure. Likewise, the redacted brief contains none of TCR's arguments allegedly supporting its position that the information constitutes a trade secret or is confidential commercial or financial information. TCR merely concludes that it "has made a prima facie showing [REDACTED] constitute trade secret information" and that if the information were released, it "would cause TCR substantial competitive harm."

15. TEX. GOV'T CODE §552.304 grants citizens the right to submit written comment to the OAG stating the reasons why the information at issue in a pending open records request should or should not be released. The Act also grants citizens the right to challenge an OAG ruling. And, citizens have the right to seek relief through civil enforcement when a governmental body refuses to supply public information.

16. As a result of the extreme nature of the redactions, Plaintiff has been deprived of these rights. Without sufficient identification of the alleged confidential information or any

explanation of the arguments allegedly supporting TCR's bare conclusions, it is impossible to formulate an effective challenge to the OAG's ruling or to TxDOT and TCR's ongoing attempts to withhold public information.

The Attorney General's ruling

17. On July 23, 2015, the OAG issued Letter Ruling OR2015-14983, a copy of which is attached as Exhibit B. With respect to TxDOT's claim that certain information is excepted from disclosure pursuant to TEX. GOV'T CODE §§552.101, 552.107 and 552.111, the OAG allowed TxDOT to withhold information pursuant to all three exceptions.

18. Specifically, the OAG erroneously ruled that TxDOT may generally withhold certain communications which TxDOT claimed were sent for the purpose of seeking and providing confidential legal advice. Upon information and belief, the information withheld is not excepted under TEX. GOV'T CODE §552.107 because it is not "information that the attorney general or an attorney of a political subdivision is prohibited from disclosing because of a duty to the client under the Texas Rules of Evidence or the Texas Disciplinary Rules of Professional Conduct."

19. The OAG incorrectly ruled further that TxDOT may withhold certain information which TxDOT claimed consisted of advice, opinion, and recommendations pertaining to department policies. Upon information and belief, the information withheld is not excepted under TEX. GOV'T CODE §552.111 because it is not "interagency or intraagency memorandum or letter that would not be available by law to a party in litigation with the agency."

20. In addition, the OAG erroneously ruled that certain information is excepted from disclosure in conjunction with common-law privacy and the standard articulated by the Texas Supreme Court in *Industrial Found. v. Texas Indus. Accident Bd.*, 540 S.W.2d 668 (Tex. 1976).

The standard in *Industrial Foundation* provides that public information is excepted from disclosure under the Act as information deemed confidential by law if (1) the information contains highly intimate or embarrassing facts the publication of which would be highly objectionable to a reasonable person, and (2) the information is not of legitimate concern to the public. Upon information and belief, the information withheld by TxDOT is not excepted under TEX. GOV'T CODE §552.101 because it is not “information considered to be confidential by law, either constitutional, statutory, or by judicial decision,” nor does it meet the standard articulated in *Industrial Foundation*.

21. With respect to TCR's claim that certain information is excepted as trade secret or confidential commercial information, the OAG ruled that “TCR has demonstrated the information we have marked would result in substantial harm to its competitive position.” Accordingly, the OAG ordered TxDOT to withhold “the information we have marked under section 552.110(b).”

22. Upon information and belief, the information ordered to be withheld by TxDOT is not excepted under TEX. GOV'T CODE §552.110 because it does not constitute a trade secret nor is it confidential commercial or financial information. Plaintiff intends to amend this petition to allege further facts once the information at issue is sufficiently identified and the arguments in support of TCR's position are sufficiently disclosed.

REQUEST FOR IN CAMERA INSPECTION

23. Pursuant to TEX. GOV'T CODE §552.3221, Plaintiff requests that the information at issue be submitted to the Court for in camera inspection.

COUNT ONE—WRIT OF MANDAMUS

24. The release of public information is a ministerial duty, and the failure to perform

that duty is remedied by mandamus. *Dallas Area Rapid Transit v. Dallas Morning News*, 4 S.W.3d 469 (Tex.App.—Dallas 1999, no pet.). TEX. GOV. CODE §552.321 creates a statutory right of mandamus against a governmental body by a private party that has requested and been denied access to public information. TxDOT's refusal to release the requested public information as required by the Act has caused Plaintiff irreparable harm for which there is no adequate remedy at law. Therefore, Plaintiff respectfully requests an accelerated hearing and an order granting a writ of mandamus requiring TxDOT to produce all information responsive to Reilly's request.

COUNT TWO—RIGHT TO DECLARATORY RELIEF

25. Plaintiff believes the OAG's ruling is erroneous. An actual and justiciable controversy exists as to whether the OAG's ruling is correct. An actual and justiciable controversy also exists as to whether TxDOT should be required to disclose the requested information under the Act. Accordingly, Plaintiff seeks a judgment in accordance with Chapter 37 of the Texas Civil Practice and Remedies Code in order to resolve these controversies. Plaintiff seeks a declaration by this Court:

- (1) vacating the OAG's July 23, 2015 erroneous ruling;
- (2) declaring that the information withheld by TxDOT is public information not excepted from disclosure; and
- (2) ordering TxDOT to disclose the requested information.

ATTORNEY'S FEES—MANDAMUS AND RIGHT TO DECLARATORY RELIEF

26. Pursuant to TEX. GOV'T. CODE §552.321 and TEX. CIV. PRAC. & REM. CODE §37.009, Plaintiff is entitled to recover its reasonable and necessary attorney's fees for the investigation and prosecution of this action, including all trials and appeals.

PRAYER

Plaintiff respectfully requests entry of a writ of mandamus compelling TxDOT to release the requested information. Plaintiff further seeks entry of a final judgment declaring the rights of the parties with respect to the open records request to TxDOT under the Texas Public Information Act. Specifically, Plaintiff requests a declaration that the information withheld by TxDOT is public information not excepted from disclosure and that TxDOT has a duty to release the requested information. Plaintiff further requests recovery of its attorney's fees and costs incurred in the investigation and prosecution of this action. Finally, Plaintiff requests all other and further relief to which it is entitled.

Respectfully submitted,

/s/ Blake L. Beckham

Blake L. Beckham
blake@beckham-group.com
Texas State Bar No. 02016500
M. Patrick McShan
patrick@beckham-group.com
Texas State Bar No. 24047415
THE BECKHAM GROUP, P.C.
3400 Carlisle, Suite 550
Dallas, Texas 75204
214-965-9300 (tel.)
214-965-9301 (fax)

ATTORNEYS FOR PLAINTIFF

Exhibit A

BAKER BOTTS LLP

98 SAN JACINTO BLVD.
SUITE 1500
AUSTIN, TEXAS
78701-4078

TEL +1 512.322.2500
FAX +1 512.322.2501
BakerBotts.com

AUSTIN	LONDON
BEIJING	MOSCOW
BRUSSELS	NEW YORK
DALLAS	PALO ALTO
DUBAI	RIO DE JANEIRO
HONG KONG	RIYADH
HOUSTON	WASHINGTON

June 2, 2015

VIA HAND DELIVERY

The Honorable Ken Paxton
Office of the Attorney General
Open Records Division
Price Daniels Building
209 W. 14th Street, 6th Floor
Austin, TX 78701

Derek McDonald
TEL: 512.322.2667
FAX: 512.322.8342
derek.mcdonald@bakerbotts.com

Re: Public Information Act Request No. 570728 regarding Texas Central High-Speed Railway, LLC

Dear General Paxton:

On March 20, 2015, Mr. Frank Reilly, an attorney at Potts and Reilly, LLP, requested information contained in the files of the Texas Department of Transportation ("TxDOT"). Mr. Reilly's final request, revised by agreement with TxDOT, asked for all information related to Texas Central High-Speed Railway, LLC ("TCR") or a proposed high-speed rail route from Harris County to Dallas County from January 1, 2009 to present, excluding news clips. On May 5, 2015, TxDOT requested a decision from your office regarding whether certain documents determined by TxDOT to be responsive are excepted from disclosure under the Texas Public Information Act. TCR received notice of Mr. Reilly's request on May 18, 2015.

TCR supports TxDOT's claims of exception and opposes the release of certain information submitted to TxDOT under a claim of confidentiality. TCR's information that is the subject of this brief includes trade secret and confidential commercial or financial information. Such information is exempt from disclosure under the Texas Public Information Act. The enclosed brief provides specific detail in support of this position. As required by law, a copy of this letter and a redacted copy of the supporting brief are being provided to Mr. Reilly.

If you have any questions, please call me at (512) 322-2667.

Very truly yours,



Derek McDonald

Enclosure

cc: Sarah Parker, Associate General Counsel, TxDOT (w/out enclosure)

Brief in Support of Texas Central High-Speed Railway LLC's Position that Certain Confidential Materials in the Files of the Texas Department of Transportation Are Protected from Disclosure under the Texas Public Information Act

I. Introduction

On March 20, 2015, Mr. Frank Reilly, an attorney at Potts and Reilly, LLP, requested information under the Texas Public Information Act ("TPIA") pertaining to Texas Central High-Speed Railway, LLC ("TCR") and contained in the files of the Texas Department of Transportation ("TxDOT"). Mr. Reilly clarified his request for the final time on April 24, 2015. TxDOT requested a formal decision from the Open Records Division of the Office of the Attorney General ("OAG") on May 5, 2015, then submitted a brief to the OAG and notified TCR on May 15, 2015. The OAG assigned number PIR #570728 to TxDOT's request.

Mr. Reilly requested inspection of anything connected to TCR or a high-speed rail route from Harris County to Dallas County from January 1, 2009 to present, excluding news clips. While some responsive information contained in TxDOT's Exhibit E, submitted to the OAG, is public information that can be disclosed, other information must not be released. Specifically, [REDACTED] must not be disclosed because this is trade secret and/or confidential commercial or financial information of TCR.

II. TCR's Response is Timely

As a threshold matter, TCR's brief is timely. TCR seeks to prevent disclosure of documents that contain confidential information excepted from disclosure by law. The TPIA requires TCR to file a brief in support of its position not later than the tenth business day after the date of receipt of notice of a TPIA request. TCR received notice of Mr. Reilly's request on May 18, 2015. Given the May 25, 2015 Memorial Day holiday, the tenth business day after the date of receipt of notice is June 2, 2015. Thus, this brief is timely.

III. Background and Summary

TCR is facilitating the construction of a high-speed passenger rail line between Dallas and Houston by securing environmental and technological regulatory approvals that will be necessary in future stages of the project. Because the construction and operation of a high-speed rail system will require various federal regulatory approvals, an Environmental Impact Statement ("EIS") for the project is being conducted by the Federal Railroad Administration ("FRA") and TxDOT pursuant to the National Environmental Policy Act ("NEPA"). The FRA and TxDOT are jointly acting as lead agencies in the preparation of an EIS. For this reason, TxDOT has requested from TCR and TCR has submitted information relevant to its proposal.

[REDACTED]

[REDACTED] excepted from disclosure under Section 552.110(a) of the TPIA because this information constitutes a trade secret. This information is also excepted from disclosure as confidential commercial or financial information under Section 552.110(b) of the TPIA.

IV. Sections [REDACTED] Do Not Contain Trade Secret or Confidential Commercial or Financial Information

As an initial matter, TCR is no longer claiming that the following sections [REDACTED] are proprietary and confidential, and these sections may be released to Mr. Reilly:

- Cover Page
- Section 1 - Project Overview
- Section 2 - Review of Previous Studies
- Section 3 - Travel Market Assessment
- Section 10 - Peer Review
- Appendix A - Station Area Market Analysis
- Appendix B - SAM-V2 Mode Choice Model
- Appendix C - Potential Road Closures and Conflicts

V. TCR's Trade Secret and Confidential Commercial or Financial Information Is Excepted from Public Disclosure

A. Confidential Trade Secret Information

Section 552.110(a) of the TPIA provides that “[a] trade secret obtained from a person and privileged or confidential by statute or judicial decision” is excepted from the disclosure requirements of the TPIA.² Protection from disclosure under Section 552.110(a) of the TPIA requires TCR to make a *prima facie* case that the information at issue is trade secret under the Restatement of Torts.

1. The “Trade Secret” Criteria

The Texas Supreme Court has adopted the definition of “trade secret” from the Restatement of Torts, section 757, which holds a trade secret to be:

¹ [REDACTED]

² Tex. Gov't Code § 552.110(a).

[A]ny formula, pattern, device, or compilation of information used in one's business, and which gives him an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating, or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business...in that it is not simply information as to a single or ephemeral event in the conduct of the business...A trade secret is a process or device for continuous use in the operation of the business...[It may] relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates, or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping, or other office management.³

To evaluate an assertion of trade secret protection, the courts and OAG use the following criteria:

- (1) the extent to which the information is known outside of TCR;
- (2) the extent to which it is known by employees and others involved in the business;
- (3) the extent of measures taken by TCR to guard the secrecy of the information;
- (4) the value of the information to TCR and its competitors;
- (5) the amount of effort or money expended in developing the information; and
- (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.⁴

TCR is not required to satisfy all six factors; the Texas Supreme Court has recognized that trade secrets "do not fit neatly into each factor each time."⁵ In addition, other circumstances could also be relevant to the trade secret analysis. Thus, these factors are to be weighed in the context of the surrounding circumstances.⁶ If a *prima facie* showing is made that the information at issue constitutes a trade secret, then TxDOT must withhold the information from the requestor.

2. Application of the "Trade Secret" Criteria

The sections [REDACTED] identified in Section IV do not constitute trade secret information; however, the remainder [REDACTED] contains information that satisfies the criteria for trade secret under the Restatement.

[REDACTED]

a) [REDACTED]

[REDACTED]

³ Restatement of Torts § 757 cmt b. (1939); see *Hyde Corp. v. Huffines*, 314 S.W.2d 763, 776 (Tex. 1958), *cert. denied*, 358 U.S. 898 (1958).

⁴ Restatement of Torts § 757 cmt b. (1939).

⁵ *In re Bass*, 113 S.W.3d 735, 740 (Tex. 2003).

⁶ *Id.*

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In addition

[REDACTED]

This information is precisely the type of trade

secret information

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] As detailed above, TCR has made a *prima facie* showing
[REDACTED] constitute trade secret information [REDACTED]
[REDACTED] that must be protected under the TPIA.

B. Confidential Commercial or Financial Information

Section 552.110(b) of the TPIA states, “Commercial or financial information for which it is demonstrated based on specific factual evidence that disclosure would cause substantial competitive harm to the person from whom the information was obtained is excepted from the requirements of Section 552.021 [(the disclosure requirements)].” Section 552.110(b) requires a

specific factual or evidentiary showing, not conclusory or generalized allegations, that substantial competitive injury would likely result from release of the information at issue.⁷

1. Application of the Confidential Commercial or Financial Information Exception

The trade secret information identified above is also excepted from disclosure under TPIA Section 552.110(b) because it constitutes confidential commercial or financial information that, if disclosed, would cause substantial competitive harm to TCR. [REDACTED]

[REDACTED] This information must therefore be protected from disclosure under Section 552.110(b) of the TPIA.

[REDACTED]

⁷ See Tex. Att’y Gen. ORD No. 661 at 5-6 (1999).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

VI. Conclusion

For the reasons outlined above, TCR has made a *prima facie* case that [REDACTED] are trade secrets excepted from disclosure under the TPIA. In addition, [REDACTED] are also excepted from disclosure because this information is confidential commercial or financial information that, if released, would cause TCR substantial competitive harm.

⁸ See, e.g., Tex. Att’y Gen. ORD No. 10987 (2005).

Exhibit B

Tex. Atty. Gen. Op. OR2015-14983 (Tex.A.G.), 2015 WL 4634022

Office of the Attorney General

State of Texas

Informal Letter Ruling No. OR2015-14983

July 23, 2015

*1 Ms. Sarah Parker
Associate General Counsel
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483

Dear Ms. Parker:

You ask whether certain information is subject to required public disclosure under the Public Information Act (the “Act”), chapter 552 of the Government Code. Your request was assigned ID# 570728.

The Texas Department of Transportation (the “department”) received a request for information pertaining to a high-speed rail route from Harris County to Dallas County, excluding news clips, over a specified time period.¹ You claim portions of the submitted information are excepted from disclosure under [sections 552.101, 552.107, and 552.111 of the Government Code](#). Additionally, you state release of some of the submitted information may implicate the proprietary interests of Texas Central High-Speed Railway, L.L.C. (“TCR”).² Accordingly, you state, and provide documentation demonstrating, you notified TCR of the request and of the company's right to submit arguments to this office as to why the requested information should not be released. *See* [Gov't Code § 552.305\(d\)](#); *see also*

Open Records Decision No. 542 (1990) (determining that statutory predecessor to [section 552.305](#) permits governmental body to rely on interested third party to raise and explain applicability of exception to disclosure under the Act in certain circumstances). We have received comments from TCR. We have considered the submitted arguments and reviewed the submitted representative sample of information.³ We have also received and considered comments from the requestor. *See* [Gov't Code § 552.304](#) (providing an interested party may submit documents stating why information should or should not be released).

[Section 552.107\(1\) of the Government Code](#) protects information coming within the attorney-client privilege. When asserting the attorney-client privilege, a governmental body has the burden of providing the necessary facts to demonstrate the elements of the privilege in order to withhold the information at issue. Open Records Decision No. 676 at 6-7 (2002). First, a governmental body must demonstrate that the information constitutes or documents a communication. *Id.* at 7. Second, the communication must have been made “to facilitate the rendition of professional legal services” to the client governmental body. [TEX. R. EVID. 503\(b\)\(1\)](#). The privilege does not apply when an attorney or representative is involved in some capacity other than that of providing or facilitating professional legal services to the client governmental body. *In re Tex. Farmers Ins. Exch.*, 990 S.W.2d 337, 340 (Tex. App.—Texarkana 1999, orig. proceeding) (attorney-client privilege does not apply if attorney acting in a capacity other than that of attorney). Governmental attorneys often act in capacities other than that of professional legal counsel, such as administrators, investigators, or managers. Thus, the mere fact that a communication involves an attorney for the government does not demonstrate this element. Third, the privilege applies only to communications between or among clients, client representatives, lawyers, and lawyer representatives. [TEX. R. EVID. 503\(b\)\(1\)\(A\), \(B\), \(C\), \(D\), \(E\)](#). Thus, a governmental body must inform this office of the identities and capacities of the individuals to whom each communication at issue has been made. Lastly, the attorney-client privilege applies only to a *confidential* communication, *id.* 503(b)(1), meaning it was “not intended to be disclosed to third persons other than those: (A) to whom disclosure is made to further the rendition of

professional legal services to the client; or (B) reasonably necessary to transmit the communication.” *Id.* 503(a)(5). Whether a communication meets this definition depends on the *intent* of the parties involved at the time the information was communicated. *Osborne v. Johnson*, 954 S.W.2d 180, 184 (Tex. App.—Waco 1997, orig. proceeding). Moreover, because the client may elect to waive the privilege at any time, a governmental body must explain that the confidentiality of a communication has been maintained. [Section 552.107\(1\)](#) generally excepts an entire communication that is demonstrated to be protected by the attorney-client privilege unless otherwise waived by the governmental body. *See Huie v. DeShazo*, 922 S.W.2d 920, 923 (Tex. 1996) (privilege extends to entire communication, including facts contained therein).

*2 You claim Exhibit B consists of communications between the department attorneys, and department employees and employees of the Federal Railroad Administration (the “administration”). You inform us the department is working together with the administration as joint lead agencies in preparing an environmental impact statement for the proposed high-speed rail route as required by the National Environmental Policy Act. *See* 40 C.F.R. 1505.15(b). You state the submitted communications were sent for the purpose of seeking and providing confidential legal advice. You further state these communications have not been disclosed to any third parties. Based on your representations and our review, we find the department may generally withhold Exhibit B under [section 552.107\(1\) of the Government Code](#).⁴ However, some of the otherwise-privileged e-mail strings include e-mails received from or sent to non-privileged third parties. We find these e-mails are separately responsive. Therefore, if these non-privileged e-mails, which we have marked, are maintained by the department separate and apart from the otherwise-privileged e-mail strings in which they appear, then the department may not withhold them under [section 552.107\(1\) of the Government Code](#).

[Section 552.111 of the Government Code](#) excepts from disclosure “[a]n interagency or intraagency memorandum or letter that would not be available by law to a party in litigation with the agency[.]” [Gov’t Code § 552.111](#). This exception encompasses the deliberative process privilege. *See* Open Records Decision No. 615 at 2 (1993). The purpose of [section 552.111](#) is to protect advice, opinion, and recommendation in the decisional process and to encourage open and frank discussion in the deliberative process. *See Austin v. City of San Antonio*, 630 S.W.2d 391, 394 (Tex. App.—San Antonio 1982, writ ref’d n.r.e.); Open Records Decision No. 538 at 1-2 (1990).

In Open Records Decision No. 615, we determined [section 552.111](#) excepts from disclosure only those internal communications that consist of advice, recommendations, opinions, and other material reflecting the policymaking processes of the governmental body, *See* ORD 615 at 5. A governmental body’s policymaking functions do not encompass routine internal administrative or personnel matters, and disclosure of information about such matters will not inhibit free discussion of policy issues among agency personnel. *Id.*; *see also City of Garland v. Dallas Morning News*, 22 S.W.3d 351, 364 (Tex. 2000) ([section 552.111](#) not applicable to personnel-related communications that did not involve policymaking). A governmental body’s policymaking functions include administrative and personnel matters of broad scope that affect the governmental body’s policy mission. *See* Open Records Decision No. 631 at 3 (1995). Further, [section 552.111](#) does not protect facts and written observations of facts and events severable from advice, opinions, and recommendations. *Arlington Indep. Sch. Dist. v. Tex. Attorney Gen.*, 37 S.W.3d 152, 157 (Tex. App.—Austin 2001, no pet.); *see* ORD 615 at 5. But if factual information is so inextricably intertwined with material involving advice, opinion, or recommendation as to make severance of the factual data impractical, [section 552.111](#) protects the factual information. *See* Open Records Decision No. 313 at 3 (1982).

*3 This office has also concluded [section 552.111](#) exempts from disclosure a preliminary draft of a document intended for public release in its final form because the draft necessarily represents the drafter’s advice, opinion, and recommendation with regard to the form and content of the final document. *See* Open Records Decision No. 559 at 2 (1990) (applying statutory predecessor). [Section 552.111](#) protects factual information in the draft that also will be included in the final version of the document. *See id.* at 2-3. Thus, [section 552.111](#) encompasses the entire contents of a preliminary draft of a policymaking document, including comments, underlining, deletions, and proofreading marks, that will be released to the public in its final form. *See id.* at 2.

You state Exhibit C consists of advice, opinion, and recommendations pertaining to department policies. Further, you inform us some of the communications at issue involve the administration and consultants, with which the department shares a privity of interests with regard to the matters at issue. Additionally, you state some of this information consists of draft documents which you state were intended to be released to the public in their final forms. Upon review, we find the department may withhold the submitted draft documents and e-mail attachments in Exhibit C, with the exception of those we have marked for release, under [section 552.111 of the Government Code](#). Further, we find the information we have marked in the submitted e-mails consists of advice, opinions, and recommendations pertaining to policymaking matters. Accordingly, the department may withhold the information we have marked in the submitted e-mails in Exhibit C under [section 552.111](#). However, we find the remaining information at issue consists of general administrative or factual information. Thus, we find you have failed to demonstrate how the remaining information at issue is excepted under [section 552.111](#) on the basis of the deliberative process privilege, and the department may not withhold any of the remaining information in Exhibit C under [section 552.111 of the Government Code](#).

[Section 552.101 of the Government Code](#) excepts from disclosure “information considered to be confidential by law, either constitutional, statutory, or by judicial decision.” [Gov't Code § 552.101](#). [Section 552.101](#) encompasses the doctrine of common-law privacy, which protects information that is (1) highly intimate or embarrassing, the publication of which would be highly objectionable to a reasonable person, and (2) not of legitimate concern to the public. *Indus. Found. v. Tex. Indus. Accident Bd.*, 540 S.W.2d 668, 685 (Tex. 1976). To demonstrate the applicability of common-law privacy, both prongs of this test must be satisfied. *Id.* at 681-82. Types of information considered intimate and embarrassing by the Texas Supreme Court are delineated in *Industrial Foundation*. *Id.* at 683. Additionally, this office has concluded some kinds of medical information are generally highly intimate or embarrassing. *See* Open Records Decision No. 455 (1987). Upon review, we find the information we have marked in Exhibit D meets the standard articulated by the Texas Supreme Court in *Industrial Foundation*. Accordingly, the department must withhold the information we have marked in Exhibit D under [section 552.101 of the Government Code](#) in conjunction with common-law privacy. However, we find none of the remaining information is highly intimate or embarrassing information of no legitimate public interest. Thus, the department may not withhold any of the remaining information under [section 552.101 of the Government Code](#) in conjunction with common-law privacy.

*4 TCR claims portions of its responsive information are excepted under [section 552.110 of the Government Code](#), which protects (1) trade secrets, and (2) commercial or financial information, the disclosure of which would cause substantial competitive harm to the person from whom the information was obtained. *See Gov't Code § 552.110*. [Section 552.110\(a\)](#) protects trade secrets obtained from a person and privileged or confidential by statute or judicial decision. *Id.* § 552.110(a). The Texas Supreme Court has adopted the definition of trade secret from section 757 of the Restatement of Torts. *See Hyde Corp. v. Huffines*, 314 S.W.2d 763 (Tex. 1957); *see also* Open Records Decision No. 552 (1990). Section 757 provides that a trade secret is:

any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business ... in that it is not simply information as to single or ephemeral events in the conduct of the business A trade secret is a process or device for continuous use in the operation of the business.... [It may] relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

[RESTATEMENT OF TORTS § 757](#) cmt. b (1939): *see also Huffines*, 314 S.W.2d at 776. In determining whether particular information constitutes a trade secret, this office considers the Restatement's definition of trade secret as well as the Restatement's list of six trade secret factors.⁵ [RESTATEMENT OF TORTS § 757](#) cmt. b. This office must accept a claim that information subject to the Act is excepted as a trade secret if a *prima facie* case for the exception is made and no argument is submitted that rebuts the claim as a matter of law, *See* ORD 552 at 5. However, we cannot conclude [section 552.110\(a\)](#) is applicable unless it has been shown the information meets the definition of a trade secret and the necessary factors have been demonstrated to establish a trade secret claim. *See* Open Records Decision No. 402(1983).

[Section 552.110\(b\)](#) protects “[c]ommercial or financial information for which it is demonstrated based on specific factual evidence that disclosure would cause substantial competitive harm to the person from whom the information was obtained[.]” [Gov’t Code § 552.110\(b\)](#). This exception to disclosure requires a specific factual or evidentiary showing, not conclusory or generalized allegations, that substantial competitive injury would likely result from release of the information at issue. *Id.*; *see also* Open Records Decision 661 at 5-6 (1999) (to prevent disclosure of commercial or financial information, party must show by specific factual evidence, not conclusory or generalized allegations, that release of requested information would cause that party substantial competitive harm).

*5 TCR explains portions of its information pertaining to ridership projections and associated cost estimates consist of financial and commercial information, the release of which would cause substantial competitive harm under [section 552.110\(b\) of the Government Code](#). Upon review, we find TCR has demonstrated the information we have marked would result in substantial harm to its competitive position. *See* ORD 661 (for information to be withheld under commercial or financial information prong of [section 552.110](#), business must show by specific factual evidence that substantial competitive injury would result from release of particular information at issue). Accordingly, the department must withhold the information we have marked under [section 552.110\(b\)](#).⁶

[Section 552.137 of the Government Code](#) excepts from disclosure “an e-mail address of a member of the public that is provided for the purpose of communicating electronically with a governmental body” unless the member of the public consents to its release or the e-mail address is of a type specifically excluded by subsection (c).⁷ *See* [Gov’t Code § 552.137\(a\)-\(c\)](#). [Section 552.137](#) does not apply to an institutional e-mail address, the general e-mail address of a business, an e-mail address of a person who has a contractual relationship with a governmental body, an e-mail address of a vendor who seeks to contract with a governmental body, an e-mail address maintained by a governmental entity for one of its officials or employees, or an e-mail address provided to a governmental body on a letterhead. *See id.* [§ 552.137\(c\)](#). Upon review, we find the department must withhold the e-mail addresses of members of the public in the remaining information under [section 552.137 of the Government Code](#), unless their owners affirmatively consent to their public disclosure or [section 552.137\(e\)](#) applies.

We note some of the remaining information appears to be subject to copyright law. A custodian of public records must comply with the copyright law and is not required to furnish copies of records that are copyrighted. Open Records Decision No. 180 at 3 (1977). A governmental body must allow inspection of copyrighted materials unless an exception applies to the information. *Id.*; *see* Open Records Decision No. 109(1975). If a member of the public wishes to make copies of copyrighted materials, the person must do so unassisted by the governmental body. In making copies, the member of the public assumes the duty of compliance with the copyright law and the risk of a copyright infringement suit.

In summary, the department may generally withhold Exhibit B under [section 552.107\(1\) of the Government Code](#). However, if the non-privileged e-mails, which we have marked, exist separate and apart from the otherwise privileged e-mail string in which they appear, then the department may not withhold the non-privileged e-mails under [section 552.107\(1\) of the Government Code](#) and must release the non-privileged e-mails. The department may withhold the submitted draft documents and e-mail attachments, with the exception of the e-mail attachments we have marked for release, as well as the information we have marked in the submitted e-mails in Exhibit C under [section 552.111 of the Government Code](#). The department must withhold the information we have marked in Exhibit D under [section 552.101 of the Government Code](#) in conjunction with common-law privacy. The department must withhold the information we have marked under [section 552.110\(b\) of the Government Code](#). The department must withhold the e-mail addresses of members of the public in the remaining information under [section 552.137 of the Government Code](#), unless their owners affirmatively consent to their public disclosure or [section 552.137\(c\)](#) applies. The department must release the remaining information; however, any information protected by copyright may only be released in accordance with copyright law.

*6 This letter ruling is limited to the particular information at issue in this request and limited to the facts as presented to us; therefore, this ruling must not be relied upon as a previous determination regarding any other information or any other circumstances.

This ruling triggers important deadlines regarding the rights and responsibilities of the governmental body and of the requestor. For more information concerning those rights and responsibilities, please visit our website at http://www.texasattorneygeneral.gov/open/orl_ruling_info.shtml, or call the Office of the Attorney General's Open Government Hotline, toll free, at (877) 673-6839. Questions concerning the allowable charges for providing public information under the Act may be directed to the Office of the Attorney General, toll free, at (888) 672-6787.

Sincerely,

Abigail T. Adams
Assistant Attorney General
Open Records Division

Footnotes

- 1 You state the department sought and received clarification of the information requested. *See Gov't Code § 552.222* (providing if request for information is unclear, governmental body may ask requestor to clarify request); *see also City of Dallas v. Abbott*, 304 S. W.3d 380, 387 (Tex. 2010) (holding that when a governmental entity, acting in good faith, requests clarification or narrowing of an unclear or over-broad request for public information, the ten-day period to request an attorney general ruling is measured from the date the request is clarified or narrowed).
- 2 We note the department did not comply with [section 552.301\(e\) of the Government Code](#) in requesting this decision for Exhibit G. *See Gov't Code § 552.301(e)*. Nevertheless, because the interests of third parties can provide a compelling reason to overcome the presumption of openness, we will consider whether or not Exhibit G is excepted from disclosure under the Act. *See id* §§ 552.007, .302, .352.
- 3 We assume that the “representative sample” of records submitted to this office is truly representative of the requested records as a whole. *See Open Records Decision Nos. 499 (1988), 497 (1988)*. This open records letter does not reach, and therefore does not authorize the withholding of, any other requested records to the extent that those records contain substantially different types of information than that submitted to this office.
- 4 As our ruling is dispositive, we need not address your remaining argument against disclosure of this information.
- 5 The Restatement of Torts lists the following six factors as indicia of whether information constitutes a trade secret:
 - (1) the extent to which the information is known outside of [the company];
 - (2) the extent to which it is known by employees and other involved in [the company's] business;
 - (3) the extent of measures taken by [the company] to guard the secrecy of the information;
 - (4) the value of the information to [the company] and [its] competitors;
 - (5) the amount of effort or money expended by [the company] in developing the information;
 - (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.[RESTATEMENT OF TORTS § 757](#) cmt. b: *see also Open Records Decision Nos. 319 at 2 (1982), 306 at 2(1982), 255 at 2 (1980)*.
- 6 As our ruling is dispositive, we do not address TCR's remaining argument against disclosure of this information.
- 7 The Office of the Attorney General will raise a mandatory exception on behalf of a governmental body, but ordinarily will not raise other exceptions. *See Open Records Decision Nos. 481 (1987), 480 (1987), 470(1987)*.

Tex. Atty. Gen. Op. OR2015-14983 (Tex.A.G.), 2015 WL 4634022

Exhibit 6

DO NOT FAIL to return this writ to the 126th Judicial District Court, Travis County, Texas with either the attached officer's return showing the manner of execution or the witness's signed memorandum showing that the witness accepted the subpoena.

ISSUED on April 14, 2016.

Respectfully submitted,

/s/ Patrick McShan

Blake L. Beckham
blake@beckham-group.com
Texas State Bar No. 02016500
M. Patrick McShan
patrick@beckham-group.com
Texas State Bar No. 24047415
THE BECKHAM GROUP, P.C.
3400 Carlisle, Suite 550
Dallas, Texas 75204
214-965-9300 (tel.)
214-965-9301 (fax)

ATTORNEYS FOR PLAINTIFF

This subpoena was issued at the request of Plaintiff Texas Against High Speed Rail, Inc., whose attorneys of record are Blake Beckham and Patrick McShan, The Beckham Group, 3400 Carlisle, Suite 550, Dallas, Texas 75204, 214-965-9300.

matters on which the individual will testify. Each individual designated must testify as to matters that are known or reasonably available to the organization.

WITNESS:	Texas Central High-Speed Railway, LLC
TIME AND DATE:	May 5, 2016 at 9:30 a.m. (or any other mutually agreeable time and date)
PLACE:	Jackson Walker, LLP 100 Congress Avenue, Suite 1100 Austin, Texas 78701 (or any other mutually agreeable location)

MATTERS ON WHICH EXAMINATION IS REQUESTED

Pursuant to Tex. R. Civ. P. 199.2(b)(1), TCR is requested to designate the person(s) with the most knowledge to testify on its behalf concerning the matters described with reasonable particularity as set out below:

DEFINITIONS

1. "TCR" or "You" or "Your" means Texas Central High-Speed Railway, LLC and any agents, partners, employees, affiliates, representatives or other persons or entities acting on your behalf.
2. "TxDOT" means the Texas Department of Transportation and any agents, partners, employees, representatives or other persons or entities acting on its behalf.
3. "Dallas Houston HSR" means the proposed high-speed rail project between Dallas, Texas and Houston, Texas.
4. "Communications" mean all discussions, conversations, interviews, negotiations, telephone conversations, letters, e-mails, deleted e-mails, facsimiles, records of internet chat rooms, records of internet messages, or other forms of written or verbal interchange, however transmitted, including reports, notes, memoranda, lists, agenda, and other documents and any other records of communication.

AREAS OF INQUIRY

1. Any written or oral agreements or contracts between TCR and TxDOT.
2. Any alleged trade secrets of TCR that were provided to TxDOT.

3. Any alleged confidential commercial or financial information that was provided to TxDOT.
4. The identity of all persons or entities who TCR has disclosed its alleged trade secrets to.
5. The identity of all persons or entities who TCR has disclosed its alleged confidential commercial and financial information to.
6. Any alleged trade secrets of TCR that were provided to the Japan Bank for International Cooperation.
7. Any alleged confidential commercial or financial information of TCR that was provided to the Japan Bank for International Cooperation.
8. Any written or oral confidentiality or non-disclosure agreements or contracts between TCR and the Japan Bank for International Cooperation regarding TCR's alleged trade secrets.
9. Any written or oral confidentiality or non-disclosure agreements or contracts between TCR and the Japan Bank for International Cooperation regarding TCR's alleged confidential commercial or financial information.
10. Any alleged trade secrets of TCR that were provided to the Louis Berger Group, Inc.
11. Any alleged confidential commercial or financial information of TCR that was provided to the Louis Berger Group, Inc.
12. Any written or oral confidentiality or non-disclosure agreements or contracts between TCR and the Louis Berger Group, Inc. regarding TCR's alleged trade secrets.
13. Any written or oral confidentiality or non-disclosure agreements or contracts between TCR and the Louis Berger Group, Inc. regarding TCR's alleged confidential commercial or financial information.
14. Any "ridership projections" related to the Dallas Houston HSR that were provided to TxDOT, as referenced by TCR in its June 2, 2015 letter to the Texas Attorney General.
15. Any "cost estimates" related to the Dallas Houston HSR that were provided to TxDOT, as referenced by TCR in its June 2, 2015 letter to the Texas Attorney General.
16. The identity of all persons or entities who TCR has disclosed its ridership projections or cost estimates to.
17. The source of the ridership projection estimates contained in TxDOT's December 2013 Statewide Ridership Analysis Report.

18. The source of the passenger rail fare estimates contained in TxDOT's December 2013 Statewide Ridership Analysis Report.
19. The source of the projected upfront capital costs contained in TxDOT's December 2013 Statewide Ridership Analysis Report.
20. The source of the projected annual operating and maintenance costs contained in TxDOT's December 2013 Statewide Ridership Analysis Report.
21. TCR's communications with TxDOT.
22. All documents or information, including electronic documents and electronic information, TCR has provided to TxDOT.
23. The identity of all competitors of TCR.
24. All specific factual evidence supporting TCR's claim that disclosure of its ridership projections and cost estimates would cause TCR substantial competitive harm, as alleged by TCR in its June 2, 2015 letter to the Texas Attorney General.
25. All specific factual evidencing supporting TCR's claim that disclosure of its ridership projections and cost estimates would put TCR at a competitive disadvantage relative to the airline industry, as alleged by TCR in its June 2, 2015 letter to the Texas Attorney General.
26. All specific factual evidencing supporting TCR's claim that disclosure of its ridership projections and cost estimates would put TCR at a competitive disadvantage in its future ability to compete with airlines for potential customers, as alleged by TCR in its June 2, 2015 letter to the Texas Attorney General.
27. All specific factual evidencing supporting TCR's claim that disclosure of its ridership projections and cost estimates would allow the airlines to undercut TCR's pricing before TCR even begins service, as alleged by TCR in its June 2, 2015 letter to the Texas Attorney General.
28. All specific factual evidencing supporting TCR's claim that disclosure of its ridership projections and cost estimates would jeopardize TCR's ability to obtain funding, as alleged by TCR in its June 2, 2015 letter to the Texas Attorney General.
29. The projected date TCR plans on servicing passengers on the Dallas Houston HSR.
30. Any business or construction plan supporting TCR's projected date of initial passenger service.
31. The identity of TCR's affiliates involved in the Dallas Houston HSR.

32. The identity of all TCR employees, representatives, agents, affiliates or any other persons acting on TCR's behalf who have communicated with TxDOT in any way concerning the Dallas Houston HSR.

Respectfully submitted,

/s/ Patrick McShan

Blake L. Beckham
blake@beckham-group.com
Texas State Bar No. 02016500
M. Patrick McShan
patrick@beckham-group.com
Texas State Bar No. 24047415
THE BECKHAM GROUP, P.C.
3400 Carlisle, Suite 550
Dallas, Texas 75204
214-965-9300 (tel.)
214-965-9301 (fax)

ATTORNEYS FOR PLAINTIFF

CERTIFICATE OF SERVICE

I certify that a true and correct copy of this document has been delivered to the following parties as indicated below on April 14, 2016.

Thornton Wood
Assistant Attorney General
Transportation Division
P.O. Box 12548
Austin, Texas 78711-2548

via thornton.wood@texasattorneygeneral.gov

Matthew Entsminger
Chief, Open Records Litigation
Administrative Law Division
P.O. Box 12548
Austin, Texas 78711-2548

via matthew.entsminger@texasattorneygeneral.gov

/s/ Patrick McShan

Exhibit 7



THE BECKHAM GROUP

TRIAL LAW

April 18, 2016

Derek McDonald
Baker Botts, LLP
98 San Jacinto Blvd., Suite 1500
Austin, Texas 78701

via email derek.mcdonald@bakerbotts.com

Re: Request for Texas Central High-Speed Railway's unredacted letter brief dated June 2, 2015 and feasibility study dated February 28, 2013

Dear Derek,

As I explained to you on our phone call today, I represent Texans Against High Speed Rail. On June 2, 2015, you wrote a letter brief on behalf of Texas Central High-Speed Railway (TCR) to the Texas Attorney General. In the letter, you asked the Attorney General to rule that TxDOT may withhold certain information TCR provided to TxDOT, which TCR claims is trade secret and confidential commercial or financial information.

Subsequently, you forwarded a heavily redacted copy of the letter brief to my client's General Counsel, Frank Reilly. I've attached a copy for easy reference. Due to the redactions, it is impossible to analyze TCR's legal arguments in support of its position that TxDOT be required to withhold TCR's information from the public. These legal arguments are central to the open records dispute between my client and TxDOT, and I need them in order to effectively represent my client.

I do not understand the basis for (or the extent of) the redactions. Based on what I can glean from the letter brief, TCR's ridership projections and cost estimates are the information being withheld from public disclosure. But these projections and estimates consist of numbers, and I highly doubt the letter brief contains any of the actual numbers TCR seeks to protect. The legal arguments themselves are neither trade secrets nor confidential. Moreover, why do entire paragraphs, and in some instances full pages, of the letter brief need to be redacted? The rules provide that if there is specific information that may arguably merit protection, then only those few words (or numbers) should be redacted, not entire paragraphs or pages.

3400 Carlisle
Suite 550
Dallas, Texas 75204
Phone: 214 965 9300
Fax: 214 965 9301

I also do not understand why TCR is fighting so hard to hide its ridership projections and cost estimates from Texas citizens. These secret projections and estimates are contained in a February 28, 2013 “High Speed Rail Feasibility Study” commissioned by the Japan Bank of International Cooperation on behalf of TCR. The study purports to assess the “feasibility of implementing high-speed rail service” from Dallas to Houston and summarize “evaluation of the factors” affecting the project’s development. Relatedly, TCR keeps telling the public that this high-speed rail project is not only feasible, but that it will be a huge economic success due to high ridership and low ticket costs. If this is all true, then I assume the objective data in TCR’s Feasibility Study supports these claims. So why is TCR hiding the Feasibility Study? And why is TCR going so far as to hide its legal arguments sent to the Attorney General asking for permission to hide the Feasibility Study? Finally, why does TCR think it is proper to conceal this information from the thousands of Texans whose property TCR and its Japanese partners intend to take through the power of eminent domain?

Time and time again, TCR has stressed to the public they are a transparent organization. As plainly stated on TCR’s website, “We are determined that this project be an example of how big things can be done in a transparent way, the right way.” In fact, this is not the “right” way of doing things. Rather, TCR’s behavior is the exact opposite of transparent, and raises suspicions that its own feasibility study tells a different story than TCR is letting on to the public.

I am requesting **unredacted** copies of the February 28, 2013 High Speed Rail Feasibility Study and the June 6, 2015 letter brief. TCR provided these documents to TxDOT and to the Attorney General. As a result, these documents are now public information. Texas citizens and private property owners have a right to view this public information, and TCR has no legitimate excuse for refusing to disclose it.

I intend to forward this request to the thousands of members of my client’s opposition group so they too can see that TCR (with the help of TxDOT and the Attorney General) is doing everything it can to hide this critical information from the Texas citizens and private property owners potentially affected by this ill-advised project.

Please respond in writing to my request.

Sincerely,

/s/ Patrick McShan

Attorney for Texans Against High Speed Rail

Exhibit 8

OPINION PAGE

LEGAL DISCLAIMERS

The Madisonville Meteor is published weekly by Madisonville Newspapers, Inc., 205 N. Madison St., Madisonville, Texas 77864-1509. Periodicals postage paid at Madisonville, Texas, 77864. Send address changes to The Madisonville Meteor, P.O. Box 999, Madisonville, Texas 77864.

The entire contents of each issue of The Madisonville Meteor, including editorial and advertising copy, are protected under the Federal Copyright Act. Reproduction of any portion of any issue will not be permitted without the publisher's express permission.

The opinions expressed in The Madisonville Meteor do not necessarily reflect the opinions of the staff, management or publisher of The Madisonville Meteor.

HOW TO BE HEARD

STATE OF TEXAS

- GOVERNOR**
Greg Abbott 800-843-5789
- LT. GOVERNOR**
Dan Patrick 512-463-0001
- ATTORNEY GENERAL**
Ken Paxton 512-463-2100
- U.S. SENATORS**
John Cornyn 713-572-3337
Ted Cruz 713-653-3456
- U.S. REPRESENTATIVE**
Kevin Brady 936-439-9532
- STATE SENATOR**
Charles Schwertner 512-463-0105
- STATE REPRESENTATIVE**
Trent Ashby 936-634-2762

MADISON COUNTY

- COUNTY JUDGE**
C.E. "Butch" McDaniel 936-348-2670
- SHERIFF**
Travis Neeley 936-348-2755
- DISTRICT ATTORNEY**
Brian Risinger 936-348-7049
- EMERGENCY MGMT. COORDINATOR**
Shelly Butts 936-348-3810
- COMMISSIONERS**
Ricky Driskell 936-348-8629
Phillip Grisham 936-348-1439
Carl Lynn Cannon 936-348-1619
Sam Cole 936-348-4033

CITY OF MADISONVILLE

- MAYOR**
Bill Parten 936-348-3139
- CITY MANAGER**
Daniel Singletary 936-348-2748
- POLICE CHIEF**
Herbert Gilbert 936-348-3317
- FIRE CHIEF**
Thom Jones 936-348-9297
- CITY COUNCIL**
Pearline Johnson
Doug Sparkman
Russell Bailey
Lois Brown
Jerry Harper 936-348-2748
- MADISON COUNTY MUSEUM**
Lynda Breeding 936-348-5230

CITY OF BEDIAS

- MAYOR**
Mackie Bobo White 936-395-1119
- FIRE CHIEF**
Trent Upchurch 936-395-2222

CITY OF MIDWAY

- MAYOR**
Tony Leago 936-348-6800
- FIRE CHIEF**
Edwin Faw 936-348-0898

NORTH ZULCH

- FIRE CHIEF**
David Douglas 936-348-2755

SCHOOL DISTRICT

- MADISONVILLE CISD SUPERINTENDENT**
Keith Smith 936-348-2797
- NORTH ZULCH ISD SUPERINTENDENT**
Morris Lyon 936-399-4151

A shining example of America

You can see it in the eyes of the kids as they walk their charges around the show arena.

You can see it in the faces of the parents, beaming proudly as the project their child had pored over for the last year is paraded in front of friends and family.

You can see it in the faces of the volunteers, who watch with knowing eyes and proud hearts as the next generation becomes initiated in the tradition.

You especially see it in the eyes of Fair Board President Mike Corley as he introduces his son during Saturday's freezer sale.

Pride. Pride of parents. Pride of accomplishment. Pride of community, of county, of country.

The county fair, to



Publisher's Commentary

Tony Farkas

those in the know, helps instill its participants with so many of the best qualities — things like responsibility, money management, showmanship, agriculture practices, and most especially, hard work.

The Madison County Fair Association does this

all only with the help of its supporters and its volunteers. No government money or interference here.

It's a testimony to the American way of life.

Corley said the association is not affiliated with any government, that it's a 501(c)3 nonprofit organization, and has been since 1981.

Through all that time, it has grown, even though there may have been bad times for the area farmers and ranchers.

Corley said there has been no problems with attendance, and that donations have steadily grown.

One of the main reasons for its success is that the fair association keeps the focus where it belongs, with the kids.

"Our association keeps kid-focused, keeps

agriculture learning a priority," Corley said. "And the people that put on this event every year have the right focus and the right heart."

Generation after generation.

Even the sponsors want to remain a part of this tradition, asking to be sponsors instead of having to be asked.

The kids even sense that over the years, Corley said, he's noticed that there is less and less competition between the schools in the county — North Zulch, Midway, Madisonville.

"It's really becoming a 'county' fair," he said.

Amen to that.

My hat's off to you; here's to another 35 years of instilling Madison County youth with the right stuff.

Chambers continue with budgeting

AUSTIN — The House Appropriations Committee on March 24 unanimously approved the General Appropriations Act (House Bill 1) — the first hurdle toward passing a state budget for fiscal years 2016 and 2017.

The committee's chair, state Rep. John Otto, R-Dayton, and the 27-member committee's work earned the praise of House Speaker Joe Straus, who said HB 1 is "a responsible, disciplined plan that sets the right priorities for a growing state. It addresses education and transportation, it increases transparency and it will allow the House to provide meaningful tax relief."

HB 1 awaits consideration by the full House and a long list of proposed



Capital Highlights

Ed Sterling

amendments to it will be debated on the House floor in the coming days.

SB 2, the Senate version of the state budget, is still under construction in the Senate Finance Committee.

Comptroller Glenn Hegar's biennial revenue estimate for fiscal years 2016 and 2017 suggests \$113 billion in state funds will be available for general purpose spending. Lawmakers' promises of fiscal conservatism suggest a finished state budget well under the available amount.

Senate passes tax-cut bills

Senate Bill 1 and Senate Joint Resolution 1 were passed by the Senate last week and have moved to the House for consideration. The bills, by Senate Finance Chair Jane Nelson, R-Flower Mound, seek to tie the homestead exemption to home prices and allow homeowners to write off 25 percent of the average home price in

Texas in any given year. This is projected to reduce property taxes in the state by \$2.1 billion over the next two years. Because this change in the law will require an amendment to the state constitution, voters will get a chance to decide on this issue in September, according to Senate documents.

Two other Senate bills seek to reduce the franchise tax. Nelson's SB 7 reduces the overall rate by 15 percent and cuts the 'EZ Rate' used by businesses that make less than \$20 million, by 40 percent. SB 8 by Sen. Charles Schwertner, R-Georgetown, would exempt businesses that make less than \$4 million in annual revenue from the franchise levy.

Letters to the Editor

To the Editor:
The recent article "County comes out against rail plan" contains significant factual errors that were presented at the Madison County Commissioner's meeting.

In fact, the only reported statement that is accurate is that Texas Central is "planning to build a private high-speed rail to connect Houston and Dallas, and plans to route the train through several counties, including Madison."

Among factual errors, the article carried a statement that this project would consume 156,000 acres in the county. That's wildly incorrect and implies that this single rail service would cover half of the entirety of Madison County! The fact is that the complete 240-mile project will need only 3,000 acres in total, start to finish. Most of that acreage will come from existing rights of way, not from county landowners.

To correct other inaccurate statements, it's important to know the following facts:

- This project is and will remain a private enterprise that relies on private funding. We do not need and do not want government grants or subsidies for construction or operations. We prefer the flexibility of private enterprise to get things done right.
- Several years of intensive market research confirm ridership demand for this project.
- In addition, there is no dispute that

Texas is in dire need of new transportation infrastructure. This project is private enterprise investing in Texas to provide broad mutual benefits for the state, communities and individuals.

"Madison County — and all its residents — will see a significant benefit because this high-speed rail project will be among the county's largest taxpayers. That's based on the value of tracks and facilities inside the county. At existing tax rates, counties will see a substantial increase in their total tax revenue. This will be a major benefit to the county and school districts where we operate, and it will benefit every resident who depends upon county and public school services. In short, this high-speed rail project will be a tax payer, not a tax taker."

- In addition, the project will provide substantial support to local first responders, actually enhancing the county's emergency-service capabilities and resources.
- Rather than cutting the county in half, this project will foster community access across the tracks through extensive use of culverts and overpasses that will be explicitly designed to accommodate farm and ranching equipment, street traffic, livestock, wildlife and other needs. These frequent access points will be discussed with landowners and civic planners in advance of construction.

- An extensive review of the environmental impact is under way. From its inception several years ago, this project's leadership has gone to great lengths to understand and mitigate or eliminate the impact on the environment, communities and landowners. The final results of the federal and state Environmental Impact Statement (which the high-speed rail project is paying for, not the public) should be finalized in about one year.

- Until the Environmental Impact Statement is completed, the exact final route is unknown. Today, it's impossible and incorrect to say this project would split a house from a barn, as the article stated. When a final route is selected, the project will negotiate specific details with individual affected landowners to address concerns.

Texas Central sympathizes with people's concerns, and we respect their opinions. We are listening to all feedback, and we are working hard to reduce the project's impact while delivering privately funded infrastructure that benefits every community along the route. We also think it's important to know the actual facts, so we appreciate this opportunity to add clarity to this discussion.

Sophia Reza
Media Relations,
Texas Central Railway

THE MADISONVILLE METEOR

Est. 1894 © 2010 USPS 325-380
www.madisonvillemeteor.com

SUBSCRIPTIONS

\$40 per year in Madison County; \$43 per year in Brazos, Leon, Grimes and Walker counties; \$47 per year elsewhere in Texas; \$60 per year out of state.

AFFILIATIONS

The Madisonville Meteor is a member of the National Newspaper Association, the Texas Press Association, the South Texas Press Association and the Madison County Chamber of Commerce.

OFFICE

P.O. Box 999
205 N. Madison Street
Madisonville, Texas 77864
936-348-3505 (phone)
936-348-3338 (fax)

HOURS

Monday through Friday
8 a.m. until 5 p.m.
Closed on Saturdays,
Sundays and holidays

STAFF & MANAGEMENT

PUBLISHER
Tony Farkas
publisher@madisonvillemeteor.com

ADVERTISING
Holly Hayes
classifieds@madisonvillemeteor.com

SPORTS/EDUCATION EDITOR
Jason Chlapack
sports@madisonvillemeteor.com

OFFICE MANAGER
Melanie Ray
bookkeeper@madisonvillemeteor.com

Letters to the Editor

The Madisonville Meteor encourages readers to submit letters to the editor. Priority will be given to those letters pertaining to Madison County issues. All letters are published at the discretion of the editor. To be published, letters must adhere to the following criteria:

- Letters must be signed by the writer and include a telephone number where the writer may be reached for verification of authenticity; this information will not be published. Unsigned letters will not be considered for publication. The Madisonville Meteor reserves the right to edit any letter for brevity and content.
- Letters that are considered by management to be libelous or in poor taste will not be published — this includes letters that attack private individuals and businesses. Letters praising a business will be reviewed and published on a case-by-case basis.
- Letters endorsing or denouncing political candidates are discouraged and will not be published after early voting has begun.
- Letters from political candidates will not be published during election season.

DEADLINES

B Section — sports and school news, retail ads due noon Friday.
Word ads due 10:30 a.m. Monday.

A Section — news 5 p.m. Friday (unless it happens over weekend). Announcements (birthdays, weddings, etc.) 4 p.m. Friday. Retail ads noon Monday. We can accept late-breaking obituaries until noon Tuesday.

Exhibit 9



THE BECKHAM GROUP

TRIAL LAW

April 21, 2016

Raymond Atkins
Sidley Austin LLP
1501 K Street, N.W.
Washington, D.C. 20005

via email ratkins@sidley.com

Re: Request for October 13, 2015 Insight Research Report titled *Texas Central's High Speed Rail Corridor and Related Private Development Houston to Dallas/Fort Worth, Texas.*

Dear Raymond,

I represent Texans Against High Speed Rail, an organization which opposes Texas Central's proposed high-speed rail project ("HSR"). On April 19, 2016, you submitted a Petition for Exemption on behalf of Texas Central to the Surface Transportation Board. In the Petition, you reference a report created by Insight Research Corporation titled *Texas Central's High Speed Rail Corridor and Related Private Development Houston to Dallas/Fort Worth, Texas* (the "Report"). I assume Texas Central commissioned and paid Insight Research Corporation to create this Report. If I am wrong about that, then please tell me who did.

On Page 11 of your Petition (footnote 33), you claim the Report supports Texas Central's contentions that the HSR "could spur \$36 billion in economic benefits, and generate nearly \$2.5 billion in tax revenues to the state counties, local municipalities, school districts and other taxing entities, between 2015 and 2040." Texas Central has echoed these bold claims to the public, both on its website and through the press, in a summary PowerPoint presentation titled "Texas Central Partners Economic Impact Report Summary" dated October 2015. In fact, Texas Central makes numerous additional claims in the PowerPoint regarding the alleged economic benefits of the HSR, relying solely on the Report as support for its claims. However, Texas Central has refused to release the actual Report itself, which presumably contains the objective data used to calculate the supposed economic benefits.

Your Petition filed with the Surface Transportation Board is public information. Because you rely on the Report as support for your claims in the Petition, it should also be made available to the public. Moreover, I assume Texas Central would want to share the Report with the public, if indeed it describes all the economic benefits the HSR will generate in Texas.

3400 Carlisle
Suite 550
Dallas, Texas 75204
Phone: 214 965 9300
Fax: 214 965 9301

I am requesting an unredacted copy of the Report along with the identity of who commissioned and paid for it. Texas citizens and potentially affected private property owners have a right to view this public information, especially given that Texas Central and its Japanese partners are using it in their efforts to take private property from Texans through the use of eminent domain. Furthermore, Texas Central has no legitimate basis for refusing to disclose it. Several media outlets, including the Houston Press, have made similar requests for the actual Report but they too were provided only the summary PowerPoint. Why is your client hiding the Report from the public, and on what basis is it doing so?

I intend to forward this request to the thousands of members of my client's opposition group so they will know that I am making this request on their behalf, and why I am doing so.

Please respond in writing as soon as possible.

Sincerely,

/s/ Patrick McShan

Attorney for Texans Against High Speed Rail

Exhibit 10



SIDLEY AUSTIN LLP
1501 K STREET, N.W.
WASHINGTON, D.C. 20005
(202) 736 8000
(202) 736 8711 FAX

ratkins@sidley.com
(202) 736 8889

BEIJING
BRUSSELS
CHICAGO
DALLAS
FRANKFURT
GENEVA
HONG KONG
HOUSTON
LONDON
LOS ANGELES
NEW YORK
PALO ALTO
SAN FRANCISCO
SHANGHAI
SINGAPORE
SYDNEY
TOKYO
WASHINGTON, D.C.

FOUNDED 1866

April 29, 2016

VIA Email and First Class Mail

Patrick McShan
The Beckham Group-Trial Law
3400 Carlisle, Suite 500
Dallas, Texas 75204

Re: *Texas Central Railroad and Infrastructure, Inc. & Texas Central Railroad, LLC
-Authority to Construct and Operate-Petition for Exemption From 49 U.S.C.
§ 10901 and Subtitle IV-Passenger Rail Line Between Dallas, TX and
Houston, TX, Finance Docket No. 36025*

Dear Mr. McShan:

This letter is in reference to your letter dated April 21, 2016, requesting that Texas Central provide you an unredacted copy of a report prepared by Insight Research Corporation titled *Texas Central's High Speed Rail Corridor and Related Private Development* (the "Insight Report").

I cannot provide you a copy of that report at this time, as it contains certain proprietary, commercially sensitive information, the public disclosure of which would be highly prejudicial to Texas Central. Moreover, your request for production of the Insight Report is premature. The Surface Transportation Board ("STB") has not yet commenced a proceeding in connection with Texas Central's Petition for Exemption. Texas Central will entertain your request once the STB exercises its jurisdiction to initiate a proceeding and issues the agency's customary Protective Order governing the dissemination of confidential data and information among the parties.

In the meantime, a copy of the full Executive Summary is attached for your reference and it is also available for download on the Texas Central website at <http://www.texascentral.com/wp-content/uploads/2016/04/Economic-Impact-Study-Executive-Summary.pdf>.

Best regards,

/s/ Raymond A. Atkins

Raymond A. Atkins

Exhibit 11

**MEMORANDUM OF
UNDERSTANDING**

**AMONG FEDERAL RAILROAD ADMINISTRATION,
TEXAS DEPARTMENT OF TRANSPORTATION,
TEXAS CENTRAL HIGH-SPEED RAILWAY, LLC, AND
URS CORPORATION, A NEVADA CORPORATION**

**RE: Environmental Analysis and Preparation of Appropriate Environmental Documents
Relating to New Core Express Service (High-Speed Rail) - Dallas to Houston.**

I. Introduction and Purpose

- A. Texas Central High-Speed Railway, LLC or its affiliates (“Applicant”) may submit applications to the Federal Railroad Administration (“FRA”) for loans or for other approvals or regulatory actions associated with the New Core Express Service (High-Speed Rail) - Dallas to Houston (“Project”). The Applicant may also apply to other federal agencies for approvals associated with the Project to support its Project.
- B. In considering these requests (“Application”), the FRA will consider the potential environmental impacts resulting from the Project pursuant to the National Environmental Policy Act of 1969 (“NEPA”). The FRA will prepare a project-level environmental impact statement. The FRA has adopted aspects of the Surface Transportation Board’s environmental procedures for this review, and pursuant to 40 CFR 1506.5(c), 49 CFR 1105.4(j), and 1105.10(d), FRA has selected, and Applicant has agreed to engage at Applicant's expense, URS Corporation. (“Contractor”) as the Independent Third Party Contractor for this environmental review. Contractor shall assist the FRA, as the lead Federal agency, in conducting

the environmental review and preparing the environmental documentation¹ related to the Applicant's proposal. Contractor's scope of work, approach, and activities shall be under the sole supervision, direction, and control of the FRA.

- C. Consistent with 40 CFR 1506.2 and 1506.5, the Texas Department of Transportation ("TxDOT") shall serve as a joint lead agency.
- D. This Memorandum of Understanding ("MOU") summarizes the relationship among Contractor, Applicant, FRA, and TxDOT as set forth in applicable procedures, regulations and policy, regarding the conditions and procedures each party must follow in preparing all environmental documentation. This MOU does not supersede or amend, and is made expressly subject to, the requirements of NEPA, and, to the extent applicable, related environmental laws, and FRA's Procedures for Considering Environmental Impacts, 64 FR 28546.
- E. The Applicant, Contractor, FRA, and TxDOT agree to work within the framework of this MOU to develop an efficient method to complete the environmental review for the proposed Application. FRA shall maintain overall responsibility for the documentation, analysis, methodology, consultation, and mitigation related to the environmental review process. FRA shall direct, evaluate, oversee, and approve the environmental review process.

¹ The terms "environmental documentation" and "environmental document(s)" embrace draft, supplemental, and final EAs, EISs, and any other reports, studies, surveys, or related documents.

- F. This MOU replaces the earlier Memorandum of Understanding concerning the Project signed on January 28, 2014. It substitutes a new Contractor, but otherwise contains the same terms as the earlier agreement.

II. Related Studies

In a separate matter TxDOT has proposed the New Core Express Service – Fort Worth to Dallas, and the FRA and TxDOT are also preparing an environmental impact statement concerning that proposed facility and service. The parties agree that the Project and New Core Express Service – Fort Worth to Dallas have independent utility and a different purpose and need, and as such will be assessed in separate NEPA documents.

III. Agreement between Applicant and Contractor

- A. Any contract between Applicant and Contractor, and any subcontracts, shall be consistent with the provisions of this MOU.
- B. The terms of this MOU shall override any contradictory or conflicting terms regarding the scope and performance of any work to be conducted under any contract entered into between Applicant and Contractor; provided, however, that the foregoing shall not limit the rights of the Applicant and the Contractor to contract on terms that require that the work be performed cost-effectively.
- C. The contract between Contractor and Applicant (“Contract”) shall specifically provide, and Contractor shall represent, that (1) the Contractor and any subcontractors do not and shall not have any financial or economic interest in the Applicant or the Application, except for payment for services rendered in

connection with the preparation of all required environmental documentation, and except for services rendered pursuant to other agreements not prohibited by this MOU, provided the agreements are disclosed to FRA, and (2) there is no agreement between the Applicant or any other party and the Contractor regarding future employment that is contingent upon the Contractor's performance under the Contract. A complete copy of the final executed Contract shall be provided to the FRA. Contractor shall concurrently execute a disclosure statement as mandated by 40 CFR 1506.5(c) of the Council on Environmental Quality ("CEQ") regulations and submit it to the FRA and the Applicant before beginning any work under the Contract. It is understood that Contractor and any subcontractors have not done any environmental analysis related to the Project for the Applicant or for any other party and, therefore, can be retained as independent third party contractor(s).

D. Restrictions on other work.

- (1) No employee of Contractor or employee of any subcontractor, who is a part of Contractor's core team committed to the environmental review process for the Application shall engage in (a) other work for the Applicant, or (b) any work, relating to the Application, for any other party to this proceeding, during the course of this proceeding.
- (2) No other employee of Contractor or other employee of any subcontractor shall, without prior written notice to FRA and FRA's approval of such work, engage in (a) other work for the Applicant, or (b) any work, relating

to the Application, for any other party to this proceeding, during the course of this proceeding.

- (3) For purposes of this MOU, an “other party” are FRA, TxDOT, cooperating agencies, and other entities that submit comment during the environmental review process.

E. The Applicant shall bear the costs incurred by the Contractor, and by any subcontractor approved by FRA in accordance with Section IV.A, in preparing the required environmental documentation to comply with NEPA and related environmental laws under the direction of FRA. APPLICANT AGREES TO HOLD HARMLESS AND INDEMNIFY THE UNITED STATES OF AMERICA AND THE FRA, AND THE STATE OF TEXAS AND TXDOT, WITH RESPECT TO ANY AND ALL CLAIMS, DEMANDS, CAUSES OF ACTION, AND THE LIKE THAT MAY ARISE IN PERFORMING THE WORK UNDER THE CONTRACT.

F. The Contract shall specifically limit any remedies available to the Contractor or subcontractors upon termination of the Contract to affirmatively relieve the United States of America, the FRA, and any officer, agent, or employee, and to affirmatively relieve the State of Texas and TxDOT, and any officer, agent, or employee, from any liability from terminating the Contract.

IV. Contractor Responsibilities

A. The Contractor may engage subcontractors to perform work related to environmental review of the Application, subject to the provisions of Sections III.C

and III.D. All work performed by the Contractor or any subcontractors shall be under the sole direction, control, supervision, and final approval of the FRA. The Contractor and subcontractors, if any, will act as the agent(s) of the FRA, not the Applicant, in performing its/their duties.

B. Contractor shall provide:

- (1) Appropriate expertise in the areas of environmental concern (including, but not limited to air quality, biological resources, geotechnical resources, hydrology, land use, safety, noise, social and economic, and cultural/historic resources).
- (2) A good working knowledge of environmental laws, applicable laws and regulations (including environmental regulations) administered or promulgated by the FRA, FRA environmental procedures, CEQ regulations and guidelines, other applicable federal regulations, state laws and regulations, and applicable local ordinances and regulations.
- (3) The capability to perform environmental impact analysis and prepare appropriate environmental documentation.
- (4) Thorough, readable, technically sound, and informative environmental documents, as well as related charts, maps, diagrams, etc.
- (5) Representatives to attend and/or facilitate meetings with Federal, state, regional, and local agencies, other interested parties and Applicant for the purpose of exchanging and obtaining information, explaining the

Application and related environmental concerns and impacts, and receiving comments in preparing the required environmental documentation.

- (6) Expertise in data management.
- (7) Assistance to the FRA in ensuring that the data collection, analyses, and methodologies for the environmental documents are complete, accurate, and relevant to the FRA's needs for the environmental review of the Application under NEPA.

C. Contractor shall maintain and provide to the FRA upon request:

- (1) Adequate record-keeping and reporting systems to assure preservation of all data gathered, including surveys, studies, etc.
- (2) Logs summarizing all telephone calls, meetings, document reviews, and other substantive communications with the FRA, TxDOT, the Applicant, local governments, governmental agencies, citizens' groups, and any other interested parties.
- (3) Lists of all agencies, other railroads, citizens' groups, organizations, and individuals (including their respective addresses and telephone numbers) contacted in preparing the environmental documentation.

D. The Contractor shall perform the work in a timely, responsive, satisfactory, and cost-effective manner, pursuant to a work schedule developed with the FRA in coordination with TxDOT and the Applicant, and approved by the FRA.

- E. The Contractor shall assist the FRA in coordinating the exchange of all relevant environmental information and technical data/studies related to the Application in preparing all required environmental documentation for use by FRA staff, TxDOT staff and representatives, Applicant's staff and representatives, Contractor, and any subcontractors.
- F. The Contractor shall cooperate fully with the FRA and TxDOT in organizing, participating in, and conducting coordination, including ensuring that its representatives attend meetings, as needed, with Federal, state, regional, and local agencies, and other interested parties, to exchange information, explain the Application and related environmental concerns and impacts, obtain technical input, and to receive comments.
- G. The Contractor will submit directly to the FRA and to TxDOT any and all work the Contractor performs in preparing all required environmental documentation, studies, surveys, etc. The Contractor, and any subcontractors, shall not disclose the results of their work nor release any of the underlying work papers, drafts, or other materials prepared under the Contract to anyone, including the Applicant, without the FRA's express authorization. In no case shall the Applicant be provided the opportunity to modify or edit the Contractor's work prior to submission to the FRA, without the FRA's express written authorization.
- H. The Contractor shall follow the directions and instructions of the FRA, and incorporate them into the environmental document(s) in a timely and responsive manner. The Contractor shall submit preliminary and final drafts of any documents

to the FRA for final review and approval, and shall simultaneously submit such documents to TxDOT for review.

- I. The Contractor shall provide the FRA and TxDOT access to and the right to review all procedures and underlying data used in the Contractor's development and preparation of any and all environmental documents. This includes, but is not limited to, field reports/surveys, technical studies and analyses, subcontractor reports, and interviews with concerned private and public parties, whether or not such information may be reflected in draft, supplemental, or final environmental documents submitted to the FRA.
- J. The Contractor, and any approved subcontractors, shall cooperate fully with the FRA and TxDOT in organizing, participating in, and conducting any scoping meetings, public workshops, informational meetings, and other meetings, as the FRA determines are necessary, to foster public understanding of and/or participation in the environmental review process, and to assess potential environmental impacts and develop mitigation measures related to the Application.
- K. The Contractor will assist the FRA and TxDOT in reviewing comments received during the environmental review process, will draft a summary of and responses to comments, and will coordinate analysis of these comments with the FRA and TxDOT.
- L. The Contractor shall assist the FRA in preparing the required environmental documentation, environmental recommendations, selection of alternatives, and development of mitigation measures.

- M. The Contractor must include in its analyses the common issues among the Fort Worth to Dallas facility and service and the Dallas to Houston facility and service, including the location and configuration of a terminal in Dallas, and the compatibility and connectivity of the two facilities and services, with respect to mode of propulsion, equipment, etc. The Contractor shall coordinate with TxDOT as necessary regarding common issues and facilities.
- N. The Contractor's Project Director, Project Manager, and other technical experts, as appropriate, shall be available to attend all meetings, briefings, consultations, and site visits as the FRA deems necessary. The Project Director and the Project Manager shall devote as much time to environmental review of the Application as is necessary to assure the Contractor's performance of its responsibilities under this MOU. This work commitment will extend for the entire time necessary to complete the environmental review for the Application.
- O. Except as specifically authorized by the FRA, the Contractor and any of its subcontractors shall refer all media/press inquiries directly to the FRA.
- P. As needed, the Contractor will provide technical expertise and administrative support to the FRA during preparation of the FRA's decision and in addressing any environmental issues arising in the FRA's consideration of the Application. In the event of any appeal from an FRA decision regarding the Application or other legal challenge, the parties hereto shall, at that time, determine the need for, and terms of the Contractor's services in connection with judicial review of the decisions.

V. Applicant Responsibilities

- A. The Applicant shall retain the Contractor to assist in preparing all required environmental documentation and services, as that assistance and its costs are defined by the Contract to be negotiated and executed by Applicant and Contractor, and in the Work Plan described in Section VIII.
- B. The Applicant, including its staff and representatives, shall provide to the FRA, TxDOT, and the Contractor any requested supportive expertise, resources, data, and technical capabilities necessary to undertake the environmental analysis, subject to the right of the Applicant to advise the FRA of any request received from the FRA, TxDOT, or the Contractor that the Applicant believes either is not germane to matters appropriately reviewed in the environmental review process, is contrary to applicable statutes and regulations, would impose an extraordinary burden on the Applicant, or is subject to the right of the Applicant to maintain confidentiality as to proprietary, privileged, or other information that is not otherwise subject to disclosure. In the event that the Applicant so advises the FRA, the FRA shall determine whether the request is appropriate and shall so advise the Applicant, TxDOT, and the Contractor of its determination. The FRA shall, to the extent possible and consistent with applicable law (including the Freedom of Information Act), maintain the confidentiality of any information if so requested by the Applicant. TxDOT shall, to the extent possible and consistent with applicable law (including the Texas Public Information Act), maintain the confidentiality of any information if so requested by the Applicant.
- C. The Applicant shall cooperate fully with the FRA and TxDOT in organizing and participating in any public workshops, hearings, and meetings, as the FRA and

TxDOT determine are necessary (1) to foster public understanding and/or participation in the environmental review process, and (2) to assess potential environmental impacts and mitigation measures related to the Application.

- D. With respect to all reports, analyses, and documents, including drafts, supplements, and final copies of the environmental documents, the Applicant shall be responsible for the Contractor's administrative and clerical costs, as well as the costs of graphics, maps, layout, mailing, and printing, as those costs are defined by the Contract. The Applicant shall be solely responsible for the cost of preparing and printing the appropriate number of copies of all required environmental documentation.
- E. The Applicant shall provide complete, accurate, relevant, and timely responses to all reasonable requests for information pertaining to the Application.
- F. The Applicant agrees to participate in the environmental review process for the Fort Worth to Dallas facility and service when there are common issues with the Project. The common issues will include the location and configuration of a terminal in Dallas, and the compatibility and connectivity of the two facilities and services, with respect to mode of propulsion, equipment, etc. Participation will include but not be limited to:
 - (1) The Applicant, including its staff and representatives, shall provide to FRA and TxDOT any requested reports, supportive expertise, resources, data, and technical capabilities necessary to undertake the environmental analysis of the Fort Worth to Dallas facility and service subject to the right of the

Applicant to advise the FRA of any request received from the FRA or TxDOT that the Applicant believes does not relate to any common issues, is not germane to matters appropriately reviewed in the environmental review process, is contrary to applicable statutes and regulations, would impose an extraordinary burden on the Applicant, or is subject to the right of the Applicant to maintain confidentiality as to proprietary, privileged, or other information that is not otherwise subject to disclosure. In the event that the Applicant so advises the FRA, the FRA shall determine whether the request is appropriate and shall so advise the Applicant and TxDOT of its determination. The FRA shall, to the extent possible and consistent with applicable law (including the Freedom of Information Act), maintain the confidentiality of any information if so requested by the Applicant. TxDOT shall, to the extent possible and consistent with applicable law (including the Texas Public Information Act), maintain the confidentiality of any information if so requested by the Applicant.

- (2) The Applicant will ensure that its representatives attend meetings, as needed, with Federal, state, regional, and local agencies, and other interested parties, concerning the Fort Worth to Dallas facility and service. The Applicant will explain the common issues for the Fort Worth to Dallas facility and service and the Project, exchange information, obtain technical input, and forward any comments received to TxDOT.

VI. TxDOT Responsibilities

- A. TxDOT may use its staff or other representatives to carry out TxDOT's responsibilities under this MOU. TxDOT may expend funds provided by the FRA in Grant/Cooperative Agreement FR-HSR-0067, and any subsequent amendments, for the purpose of carrying out TxDOT's responsibilities under this MOU.
- B. TxDOT, including its staff and representatives, shall provide to the FRA and the Contractor any requested reports, supportive expertise, resources, data, and technical capabilities necessary to undertake the environmental analysis.
- C. As the Contractor completes each portion of any draft or final document, TxDOT shall review that portion and give comments to the FRA.
- D. TxDOT will conduct coordination, including ensuring that its representatives attend meetings, as needed, with Federal, state, regional, and local agencies, and other interested parties, to exchange information, explain the Application and related environmental concerns and impacts, obtain technical input, and to receive comments.
- E. TxDOT shall cooperate fully with the FRA in organizing and participating in any public workshops, hearings, and meetings, as the FRA and TxDOT determine are necessary (1) to foster public understanding and/or participation in the environmental review process, and (2) to assess potential environmental impacts and mitigation measures related to the Application.

VII. FRA Responsibilities

- A. The FRA is responsible for ensuring compliance with the requirements of NEPA and other applicable environmental statutes and regulations by preparing appropriate environmental documentation.
- B. FRA shall:
- (1) Direct, review, and approve all phases of preparing all required environmental documentation, including the work of Contractor, using FRA's best efforts to ensure that the work is reasonably necessary to conduct the environmental review process regarding the Application and the work is within the scope of NEPA requirements. For example, the FRA shall ensure that the Contractor considers existing data and environmental analyses available from the Applicant, FRA, TxDOT, and other sources, and that the Contractor does not duplicate work already done, unless the FRA determines that the existing data is not adequate for use in preparing the environmental documentation.
 - (2) Solicit input from interested parties during the scoping process.
 - (3) Review and approve all reports prepared by TxDOT.
 - (4) Designate appropriate staff to review and approve all work as it is developed and completed.
 - (5) Ensure that its representatives attend meetings, as needed, with Federal, state, regional, and local agencies, and other interested parties, as well as any public hearings or meetings, to exchange information, explain the

Application and related environmental concerns and impacts, obtain technical input, and receive comments in preparing all required environmental documentation.

- (6) Coordinate, with the Contractor's assistance, the exchange of information among any planning, design, or construction engineers or technical staff employed by TxDOT, the Applicant, and the Contractor.
- C. The FRA will periodically review the work of the Contractor to ensure that the FRA's responsibilities under NEPA and related environmental laws and regulations are being satisfied. As each portion of any draft or final document is completed, FRA staff shall review and approve that portion and those tasks completed, and/or direct further work with regard to that portion or task.
- D. FRA will monitor the Contractor to ensure that the Contractor is making adequate progress toward meeting specific time frames established in the Work Plan described in Section VIII. If the FRA determines these commitments are not being met, it will notify the Applicant of its findings. It will be the responsibility of the FRA to recommend any necessary corrective action to be taken under this MOU.
- E. In all instances involving questions concerning the content or relevance of any material (including all data, analyses, charts, and conclusions) prepared by the Contractor, the FRA shall make the final determination on including, deleting, or revising any such material in the environmental documents.

- F. To coordinate the preparation of all required environmental documentation, and to verify Application-related data, the FRA may hold joint meetings with TxDOT, the Applicant, and the Contractor. As necessary, the FRA may exclude the Applicant from participation. The FRA may also consult directly with appropriate Federal, state, and local officials, and other interested parties.
- G. The FRA, with the assistance of TxDOT and the Contractor, will be responsible for organizing and conducting any public workshops or meetings that may be necessary in preparing environmental documents during the environmental review process.
- H. The FRA, with the assistance of TxDOT and the Contractor, will receive all relevant comments submitted during the environmental review process and comment period. At the close of any public review and comment period, the FRA, in consultation with TxDOT and the Contractor, shall identify the issues and comments that will require FRA response. The FRA may direct certain comments to TxDOT, to the Applicant, and to the Contractor, as appropriate, to be responded to and included in the final environmental document. The FRA may modify these responses as appropriate.
- I. The FRA shall retain responsibility for deciding the environmentally preferable alternative, and any mitigation measures to be included in the final environmental document.

VIII. Work Plan

A. The Contractor, in consultation with the FRA, TxDOT, and the Applicant, shall submit a draft Work Plan to the FRA for preparing the required environmental documentation within thirty (30) days after all parties have signed this MOU. The draft Work Plan shall contain at least the following elements:

- (1) A description of all work to be performed (including preparing and sending consultation letters; participating in public and agency meetings; outlining and drafting environmental documents; reviewing, analyzing, and summarizing public comments; conducting analyses, etc.).
- (2) The projected schedule for completing the various tasks described.
- (3) Identification of the Contractor's staff members who will be responsible for preparing, analyzing, and reviewing the work.
- (4) An outline of the environmental analysis.

B. Following receipt of the draft Work Plan, FRA, TxDOT, the Contractor, and the Applicant, shall finalize the Work Plan in a timely manner.

C. Subsequent to consultation with TxDOT, the Contractor, and the Applicant, the FRA may amend the Work Plan from time to time as the environmental review of the Application may necessitate. The parties hereto shall consult at least monthly to confirm that the work included in the Work Plan is being performed in the most efficient and cost-effective manner and to consider possible measures to improve the efficiency and cost effectiveness of performance of the work.

IX. Nonperformance and Termination

- A. The Applicant or the Contractor shall notify the FRA of any concerns either party might have with respect to the other party's performance under the Contract or this MOU. All parties will attempt to resolve, in good faith, any disputes or disagreements.

- B. If the FRA determines that either the Contractor or the Applicant is not adequately performing its responsibilities and duties in accordance with this MOU, the FRA will discuss its concerns with the Contractor and the Applicant. If the FRA's concerns cannot be satisfactorily resolved, the FRA will notify the Applicant that the FRA is removing the Contractor for cause, or direct the Applicant to comply with the MOU. Upon removal of the Contractor, the FRA shall cooperate with the Applicant to replace the Contractor with another qualified contractor as soon as practicable.

- C. Both the Applicant and the Contractor shall immediately notify the FRA and TxDOT of any attempt by either party to modify or terminate the Contract. Termination of the Contract shall be subject to the FRA's prior approval, after consultation with TxDOT, the Applicant, and the Contractor. Upon approving termination of the contract, the FRA shall cooperate with the Applicant to replace the Contractor with another qualified contractor as soon as practicable. Notwithstanding the foregoing, the Applicant may terminate the Contract without the FRA's approval in the event that it withdraws its intent to pursue the Project.

D. If the Applicant withdraws its intent to pursue the Project, the Contractor shall provide to FRA, Applicant and TxDOT all work product prepared under this MOU and/or the Contract, at no cost to FRA or TxDOT.

X. Modification

This MOU may be modified only by written amendment executed by the FRA, the Applicant, the Contractor, and TxDOT.

TEXAS CENTRAL HIGH-SPEED

RAILWAY, LLC

By:

Title:

Date:

FEDERAL RAILROAD ADMINISTRATION

By:

Title:

Date:

URS CORPORATION

By:

Title:

Date:

TEXAS DEPARTMENT OF TRANSPORTATION

By:

Title:

Date:

Exhibit 12

Market and Carrier Fare Information
Top 1,000 Contiguous State City-Pair Markets
Third Quarter 2014

City-Pair	Market Data			Largest Carrier			Lowest Fare Carrier 1/			
	Nonstop Distance	Psgs Per Day	Average One Way Fare	Carrier	Percent Market Share	Average One Way Fare 2/	Carrier	Percent Market Share	Average One Way Fare 2/	
<u>Distance Block - 101-150 miles</u>										
Austin, TX	Houston, TX	148	235	\$179	WN	58%	\$173	WN	58%	\$173
Portland, OR	Seattle, WA	129	661	\$132	AS	94%	\$133	DL	4%	\$118
<u>Distance Block - 151-200 miles</u>										
Chicago, IL	Indianapolis, IN	177	239	\$197	UA	55%	\$208	AA	43%	\$183
Martha's Vineyard, MA	New York City, NY (Metropolitan Area)	192	219	\$194	B6	62%	\$189	B6	62%	\$189
Houston, TX	San Antonio, TX	192	310	\$176	WN	58%	\$170	WN	58%	\$170
Miami, FL (Metropolitan Area)	Orlando, FL	192	303	\$176	AA	78%	\$186	NK	13%	\$61
Dallas/Fort Worth, TX	Oklahoma City, OK	181	221	\$173	AA	55%	\$172	AA	55%	\$172
Reno, NV	San Francisco, CA (Metropolitan Area)	192	180	\$171	AS	58%	\$96	AS	58%	\$96
Austin, TX	Dallas/Fort Worth, TX	190	1,052	\$170	WN	69%	\$175	AA	30%	\$157
<u>Distance Block - 201-250 miles</u>										
Atlanta, GA (Metropolitan Area)	Charlotte, NC	226	283	\$275	DL	55%	\$301	US	43%	\$240
New York City, NY (Metropolitan Area)	Washington, DC (Metropolitan Area)	250	2,594	\$220	US	28%	\$257	AA	11%	\$156
Boston, MA (Metropolitan Area)	New York City, NY (Metropolitan Area)	209	3,711	\$204	DL	30%	\$245	B6	25%	\$154
Chicago, IL	Detroit, MI	235	1,249	\$201	DL	48%	\$197	WN	21%	\$175
Pittsburgh, PA	Washington, DC (Metropolitan Area)	210	338	\$200	WN	44%	\$156	WN	44%	\$156
Dallas/Fort Worth, TX	Houston, TX	247	2,877	\$183	WN	66%	\$183	AA	21%	\$176
Nantucket, MA	New York City, NY (Metropolitan Area)	218	365	\$180	B6	68%	\$178	B6	68%	\$178
Kansas City, MO	St. Louis, MO	237	242	\$163	WN	100%	\$163	WN	100%	\$163
Dallas/Fort Worth, TX	San Antonio, TX	248	1,416	\$161	WN	68%	\$164	AA	31%	\$153
New York City, NY (Metropolitan Area)	Syracuse, NY	223	332	\$155	B6	50%	\$148	B6	50%	\$148
Miami, FL (Metropolitan Area)	Tampa, FL (Metropolitan Area)	204	733	\$155	WN	57%	\$151	WN	57%	\$151
Dallas/Fort Worth, TX	Tulsa, OK	237	509	\$143	WN	51%	\$145	AA	47%	\$140
Las Vegas, NV	Los Angeles, CA (Metropolitan Area)	236	5,928	\$135	WN	58%	\$144	B6	13%	\$105
Seattle, WA	Spokane, WA	224	925	\$133	AS	100%	\$133	AS	100%	\$133
Medford, OR	Portland, OR	222	199	\$129	AS	100%	\$129	AS	100%	\$129
<u>Distance Block - 251-300 miles</u>										
Chicago, IL	Cincinnati, OH	265	311	\$340	AA	36%	\$333	UA	32%	\$333
Philadelphia, PA	Pittsburgh, PA	268	395	\$274	US	96%	\$276	DL	2%	\$188
Buffalo, NY	Philadelphia, PA	279	174	\$245	US	92%	\$246	DL	5%	\$187
New York City, NY (Metropolitan Area)	Portland, ME	284	640	\$208	B6	53%	\$192	B6	53%	\$192
Milwaukee, WI	Minneapolis/St. Paul, MN	297	457	\$193	DL	68%	\$214	WN	31%	\$143
Atlanta, GA (Metropolitan Area)	Jacksonville, FL	270	564	\$192	DL	64%	\$211	FL	16%	\$151
Raleigh/Durham, NC	Washington, DC (Metropolitan Area)	255	1,000	\$190	WN	41%	\$170	WN	41%	\$170

*Carrier Code Identifier and Footnotes at End of Report

Market and Carrier Fare Information
Top 1,000 Contiguous State City-Pair Markets
Fourth Quarter 2014

City-Pair	Market Data			Largest Carrier			Lowest Fare Carrier 1/			
	Nonstop Distance	Psgs Per Day	Average One Way Fare	Carrier	Percent Market Share	Average One Way Fare 2/	Carrier	Percent Market Share	Average One Way Fare 2/	
<u>Distance Block - 101-150 miles</u>										
Austin, TX	Houston, TX	148	258	\$181	WN	58%	\$168	WN	58%	\$168
Portland, OR	Seattle, WA	129	680	\$130	AS	94%	\$130	DL	6%	\$127
<u>Distance Block - 151-200 miles</u>										
Chicago, IL	Indianapolis, IN	177	200	\$212	UA	55%	\$216	AA	42%	\$207
Miami, FL (Metropolitan Area)	Orlando, FL	192	308	\$185	AA	80%	\$207	NK	15%	\$69
Houston, TX	San Antonio, TX	192	291	\$176	WN	53%	\$165	WN	53%	\$165
Austin, TX	Dallas/Fort Worth, TX	190	1,094	\$174	WN	70%	\$170	WN	70%	\$170
Dallas/Fort Worth, TX	Oklahoma City, OK	181	232	\$171	AA	51%	\$185	WN	48%	\$155
Reno, NV	San Francisco, CA (Metropolitan Area)	192	164	\$161	AS	66%	\$108	AS	66%	\$108
Pasco/Kennewick/Richland, WA	Seattle, WA	172	169	\$133	AS	99%	\$133	AS	99%	\$133
<u>Distance Block - 201-250 miles</u>										
Atlanta, GA (Metropolitan Area)	Charlotte, NC	226	274	\$286	DL	58%	\$312	US	40%	\$249
New York City, NY (Metropolitan Area)	Washington, DC (Metropolitan Area)	249	2,796	\$213	US	27%	\$257	AA	12%	\$151
Boston, MA (Metropolitan Area)	New York City, NY (Metropolitan Area)	209	3,834	\$206	DL	32%	\$249	B6	24%	\$151
Pittsburgh, PA	Washington, DC (Metropolitan Area)	210	393	\$183	US	45%	\$191	WN	38%	\$156
Chicago, IL	Detroit, MI	235	1,285	\$181	DL	47%	\$173	WN	20%	\$168
Dallas/Fort Worth, TX	Houston, TX	239	2,993	\$175	WN	66%	\$174	WN	66%	\$174
Dallas/Fort Worth, TX	San Antonio, TX	248	1,418	\$163	WN	70%	\$158	WN	70%	\$158
Miami, FL (Metropolitan Area)	Tampa, FL (Metropolitan Area)	204	742	\$161	WN	54%	\$158	WN	54%	\$158
Kansas City, MO	St. Louis, MO	237	238	\$159	WN	100%	\$159	WN	100%	\$159
New York City, NY (Metropolitan Area)	Syracuse, NY	223	378	\$149	DL	49%	\$153	B6	43%	\$138
Dallas/Fort Worth, TX	Tulsa, OK	237	476	\$148	WN	51%	\$135	WN	51%	\$135
Las Vegas, NV	Los Angeles, CA (Metropolitan Area)	236	5,452	\$134	WN	64%	\$140	B6	11%	\$106
Seattle, WA	Spokane, WA	224	1,147	\$127	AS	94%	\$128	DL	6%	\$108
Medford, OR	Portland, OR	222	193	\$122	AS	100%	\$122	AS	100%	\$122
<u>Distance Block - 251-300 miles</u>										
Chicago, IL	Cincinnati, OH	265	289	\$306	AA	34%	\$323	UA	31%	\$278
Philadelphia, PA	Pittsburgh, PA	268	417	\$267	US	96%	\$269	DL	1%	\$197
Syracuse, NY	Washington, DC (Metropolitan Area)	298	232	\$192	US	79%	\$187	US	79%	\$187
Raleigh/Durham, NC	Washington, DC (Metropolitan Area)	255	1,037	\$188	WN	40%	\$161	WN	40%	\$161
Greensboro/High Point, NC	Washington, DC (Metropolitan Area)	278	168	\$187	US	81%	\$181	US	81%	\$181
Boise, ID	Salt Lake City, UT	290	173	\$187	DL	64%	\$218	AS	35%	\$129
Atlanta, GA (Metropolitan Area)	Jacksonville, FL	270	666	\$178	DL	66%	\$192	WN	30%	\$150
New York City, NY (Metropolitan Area)	Portland, ME	284	433	\$174	B6	46%	\$158	B6	46%	\$158

*Carrier Code Identifier and Footnotes at End of Report

Market and Carrier Fare Information
Top 1,000 Contiguous State City-Pair Markets
First Quarter 2015

Table 1

City-Pair	Market Data			Largest Carrier			Lowest Fare Carrier 1/			
	Nonstop Distance	Psgs Per Day	Average One Way Fare	Carrier	Percent Market Share	Average One Way Fare 2/	Carrier	Percent Market Share	Average One Way Fare 2/	
<u>Distance Block - 101-150 miles</u>										
Austin, TX	Houston, TX	148	250	\$188	WN	60%	\$174	WN	60%	\$174
Portland, OR	Seattle, WA	129	672	\$136	AS	95%	\$136	AS	95%	\$136
<u>Distance Block - 151-200 miles</u>										
Chicago, IL	Indianapolis, IN	177	181	\$247	UA	55%	\$239	UA	55%	\$239
Miami, FL (Metropolitan Area)	Orlando, FL	192	325	\$192	AA	79%	\$216	NK	15%	\$69
Dallas/Fort Worth, TX	Oklahoma City, OK	181	210	\$190	AA	51%	\$211	WN	47%	\$169
Austin, TX	Dallas/Fort Worth, TX	190	999	\$186	WN	70%	\$176	WN	70%	\$176
Reno, NV	San Francisco, CA (Metropolitan Area)	192	162	\$184	AS	54%	\$111	AS	54%	\$111
Houston, TX	San Antonio, TX	192	312	\$182	WN	57%	\$169	WN	57%	\$169
<u>Distance Block - 201-250 miles</u>										
Atlanta, GA (Metropolitan Area)	Nashville, TN	214	157	\$361	DL	99%	\$362	WN	1%	\$258
Atlanta, GA (Metropolitan Area)	Charlotte, NC	226	300	\$296	DL	56%	\$320	US	41%	\$266
Boston, MA (Metropolitan Area)	New York City, NY (Metropolitan Area)	209	3,072	\$220	DL	32%	\$262	B6	23%	\$163
New York City, NY (Metropolitan Area)	Washington, DC (Metropolitan Area)	249	2,198	\$213	US	29%	\$262	AA	12%	\$147
Pittsburgh, PA	Washington, DC (Metropolitan Area)	210	361	\$193	US	47%	\$201	WN	35%	\$162
Chicago, IL	Detroit, MI	235	1,221	\$183	DL	47%	\$174	WN	18%	\$171
Dallas/Fort Worth, TX	Houston, TX	239	2,919	\$183	WN	67%	\$179	WN	67%	\$179
Dallas/Fort Worth, TX	San Antonio, TX	248	1,342	\$175	WN	68%	\$167	WN	68%	\$167
Miami, FL (Metropolitan Area)	Tampa, FL (Metropolitan Area)	204	779	\$165	WN	50%	\$168	WN	50%	\$168
Kansas City, MO	St. Louis, MO	237	234	\$164	WN	100%	\$164	WN	100%	\$164
New York City, NY (Metropolitan Area)	Syracuse, NY	223	267	\$163	DL	50%	\$160	B6	36%	\$156
Dallas/Fort Worth, TX	Tulsa, OK	237	422	\$161	AA	49%	\$183	WN	48%	\$141
Las Vegas, NV	Los Angeles, CA (Metropolitan Area)	236	5,743	\$137	WN	65%	\$141	NK	2%	\$86
Seattle, WA	Spokane, WA	224	1,005	\$131	AS	94%	\$132	DL	6%	\$123
Medford, OR	Portland, OR	222	178	\$119	AS	100%	\$119	AS	100%	\$119
<u>Distance Block - 251-300 miles</u>										
Chicago, IL	Cincinnati, OH	265	329	\$306	UA	40%	\$297	UA	40%	\$297
Philadelphia, PA	Pittsburgh, PA	268	394	\$279	US	93%	\$282	DL	2%	\$212
Syracuse, NY	Washington, DC (Metropolitan Area)	298	172	\$201	US	78%	\$199	DL	3%	\$184
Boise, ID	Salt Lake City, UT	290	166	\$200	DL	65%	\$240	AS	35%	\$125
New York City, NY (Metropolitan Area)	Portland, ME	284	271	\$196	B6	41%	\$168	B6	41%	\$168
Atlanta, GA (Metropolitan Area)	Jacksonville, FL	270	496	\$193	DL	72%	\$205	WN	24%	\$159
Milwaukee, WI	Minneapolis/St. Paul, MN	297	389	\$191	DL	79%	\$202	WN	19%	\$145
Raleigh/Durham, NC	Washington, DC (Metropolitan Area)	255	947	\$187	WN	39%	\$167	WN	39%	\$167

*Carrier Code Identifier and Footnotes at End of Report

Market and Carrier Fare Information
Top 1,000 Contiguous State City-Pair Markets
Second Quarter 2015

City-Pair	Market Data			Largest Carrier			Lowest Fare Carrier 1/			
	Nonstop Distance	Psgs Per Day	Average One Way Fare	Carrier	Percent Market Share	Average One Way Fare 2/	Carrier	Percent Market Share	Average One Way Fare 2/	
<u>Distance Block - 101-150 miles</u>										
Austin, TX	Houston, TX	148	239	\$197	WN	61%	\$183	WN	61%	\$183
Portland, OR	Seattle, WA	129	727	\$137	AS	94%	\$138	DL	6%	\$128
<u>Distance Block - 151-200 miles</u>										
Chicago, IL	Indianapolis, IN	177	186	\$262	AA	52%	\$272	UA	43%	\$255
Houston, TX	San Antonio, TX	192	290	\$190	WN	59%	\$176	WN	59%	\$176
Dallas/Fort Worth, TX	Oklahoma City, OK	181	235	\$190	AA	55%	\$202	WN	42%	\$176
Miami, FL (Metropolitan Area)	Orlando, FL	192	324	\$177	AA	79%	\$195	NK	14%	\$75
Austin, TX	Dallas/Fort Worth, TX	190	1,216	\$157	WN	61%	\$159	WN	61%	\$159
<u>Distance Block - 201-250 miles</u>										
Atlanta, GA (Metropolitan Area)	Charlotte, NC	226	304	\$303	DL	60%	\$321	US	37%	\$277
New York City, NY (Metropolitan Area)	Washington, DC (Metropolitan Area)	249	3,146	\$232	US	30%	\$259	AA	11%	\$184
Boston, MA (Metropolitan Area)	New York City, NY (Metropolitan Area)	209	4,023	\$219	DL	34%	\$256	B6	24%	\$170
Chicago, IL	Detroit, MI	235	1,303	\$193	DL	49%	\$189	WN	19%	\$178
Pittsburgh, PA	Washington, DC (Metropolitan Area)	210	381	\$192	US	44%	\$200	WN	35%	\$165
Dallas/Fort Worth, TX	Houston, TX	247	2,815	\$190	WN	67%	\$185	WN	67%	\$185
Dallas/Fort Worth, TX	San Antonio, TX	248	1,392	\$179	WN	64%	\$179	WN	64%	\$179
Dallas/Fort Worth, TX	Tulsa, OK	237	466	\$175	AA	54%	\$192	WN	43%	\$155
Kansas City, MO	St. Louis, MO	237	249	\$166	WN	100%	\$166	WN	100%	\$166
New York City, NY (Metropolitan Area)	Syracuse, NY	223	334	\$166	DL	50%	\$164	B6	42%	\$160
Miami, FL (Metropolitan Area)	Tampa, FL (Metropolitan Area)	204	720	\$162	WN	52%	\$164	WN	52%	\$164
Las Vegas, NV	Los Angeles, CA (Metropolitan Area)	236	5,824	\$142	WN	63%	\$149	B6	10%	\$107
Seattle, WA	Spokane, WA	224	959	\$139	AS	93%	\$140	DL	6%	\$132
Medford, OR	Portland, OR	222	201	\$132	AS	100%	\$132	AS	100%	\$132
<u>Distance Block - 251-300 miles</u>										
Chicago, IL	Cincinnati, OH	265	402	\$311	UA	40%	\$300	UA	40%	\$300
Philadelphia, PA	Pittsburgh, PA	268	397	\$287	US	89%	\$291	DL	2%	\$233
Milwaukee, WI	Minneapolis/St. Paul, MN	297	445	\$198	DL	73%	\$214	WN	25%	\$150
Syracuse, NY	Washington, DC (Metropolitan Area)	298	221	\$196	US	76%	\$196	AA	10%	\$172
Boise, ID	Salt Lake City, UT	290	179	\$194	DL	70%	\$220	AS	29%	\$133
Raleigh/Durham, NC	Washington, DC (Metropolitan Area)	255	1,097	\$191	WN	40%	\$173	WN	40%	\$173
Atlanta, GA (Metropolitan Area)	Jacksonville, FL	270	557	\$190	DL	77%	\$198	WN	21%	\$161
Chicago, IL	Columbus, OH	296	1,130	\$187	WN	47%	\$168	WN	47%	\$168
New York City, NY (Metropolitan Area)	Portland, ME	284	490	\$187	B6	49%	\$167	B6	49%	\$167
Chicago, IL	St. Louis, MO	258	1,244	\$185	WN	49%	\$177	WN	49%	\$177
Boston, MA (Metropolitan Area)	Philadelphia, PA	289	2,512	\$183	US	69%	\$198	B6	25%	\$142

*Carrier Code Identifier and Footnotes at End of Report

Market and Carrier Fare Information
Top 1,000 Contiguous State City-Pair Markets
Third Quarter 2015

City-Pair	Market Data			Largest Carrier			Lowest Fare Carrier 1/			
	Nonstop Distance	Psgs Per Day	Average One Way Fare	Carrier	Percent Market Share	Average One Way Fare 2/	Carrier	Percent Market Share	Average One Way Fare 2/	
<u>Distance Block - 101-150 miles</u>										
Austin, TX	Houston, TX	148	219	\$204	WN	60%	\$189	WN	60%	\$189
Portland, OR	Seattle, WA	129	763	\$135	AS	94%	\$136	DL	6%	\$126
<u>Distance Block - 151-200 miles</u>										
Chicago, IL	Indianapolis, IN	177	187	\$276	AA	52%	\$274	AA	52%	\$274
Martha's Vineyard, MA	New York City, NY (Metropolitan Area)	192	182	\$222	B6	67%	\$222	DL	30%	\$214
Houston, TX	San Antonio, TX	192	280	\$193	WN	59%	\$180	WN	59%	\$180
Dallas/Fort Worth, TX	Oklahoma City, OK	181	212	\$186	AA	61%	\$189	WN	38%	\$179
Reno, NV	San Francisco, CA (Metropolitan Area)	192	186	\$182	AS	65%	\$123	AS	65%	\$123
Miami, FL (Metropolitan Area)	Orlando, FL	192	301	\$177	AA	94%	\$183	NK	6%	\$77
Austin, TX	Dallas/Fort Worth, TX	190	1,203	\$130	WN	60%	\$132	VX	11%	\$97
<u>Distance Block - 201-250 miles</u>										
Atlanta, GA (Metropolitan Area)	Nashville, TN	214	171	\$356	DL	100%	\$357	DL	100%	\$357
Atlanta, GA (Metropolitan Area)	Charlotte, NC	226	295	\$295	DL	61%	\$305	AA	38%	\$280
New York City, NY (Metropolitan Area)	Washington, DC (Metropolitan Area)	249	2,637	\$218	AA	38%	\$223	AA	38%	\$223
Boston, MA (Metropolitan Area)	New York City, NY (Metropolitan Area)	209	3,683	\$208	DL	31%	\$247	B6	26%	\$159
Nantucket, MA	New York City, NY (Metropolitan Area)	218	396	\$201	B6	83%	\$202	DL	13%	\$172
Dallas/Fort Worth, TX	Houston, TX	247	2,685	\$195	WN	67%	\$192	WN	67%	\$192
Pittsburgh, PA	Washington, DC (Metropolitan Area)	210	353	\$195	AA	44%	\$200	WN	36%	\$173
Chicago, IL	Detroit, MI	235	1,286	\$192	DL	48%	\$187	WN	19%	\$181
Dallas/Fort Worth, TX	San Antonio, TX	248	1,252	\$180	WN	66%	\$182	AA	33%	\$177
New York City, NY (Metropolitan Area)	Syracuse, NY	223	321	\$167	B6	47%	\$156	B6	47%	\$156
Kansas City, MO	St. Louis, MO	237	243	\$167	WN	100%	\$167	WN	100%	\$167
Dallas/Fort Worth, TX	Tulsa, OK	237	440	\$161	AA	52%	\$165	WN	47%	\$157
Bend/Redmond, OR	Seattle, WA	228	185	\$156	AS	99%	\$156	AS	99%	\$156
Miami, FL (Metropolitan Area)	Tampa, FL (Metropolitan Area)	204	687	\$144	WN	53%	\$141	WN	53%	\$141
Seattle, WA	Spokane, WA	224	924	\$140	AS	93%	\$140	AS	93%	\$140
Las Vegas, NV	Los Angeles, CA (Metropolitan Area)	236	5,694	\$138	WN	59%	\$148	B6	11%	\$105
Medford, OR	Portland, OR	222	218	\$132	AS	100%	\$132	AS	100%	\$132
<u>Distance Block - 251-300 miles</u>										
Chicago, IL	Cincinnati, OH	265	365	\$320	UA	38%	\$303	UA	38%	\$303
Philadelphia, PA	Pittsburgh, PA	268	368	\$284	AA	97%	\$286	UA	1%	\$196
Boise, ID	Salt Lake City, UT	290	183	\$211	DL	74%	\$239	AS	25%	\$128
New York City, NY (Metropolitan Area)	Portland, ME	284	679	\$210	B6	54%	\$196	B6	54%	\$196
Syracuse, NY	Washington, DC (Metropolitan Area)	298	185	\$205	AA	81%	\$208	UA	13%	\$192

*Carrier Code Identifier and Footnotes at End of Report

Exhibit 13

Dallas-Ft. Worth

Houston

vehicles traveling both ways

90,000 per day

540,000 per week

28,080,000 per year



Exhibit 14

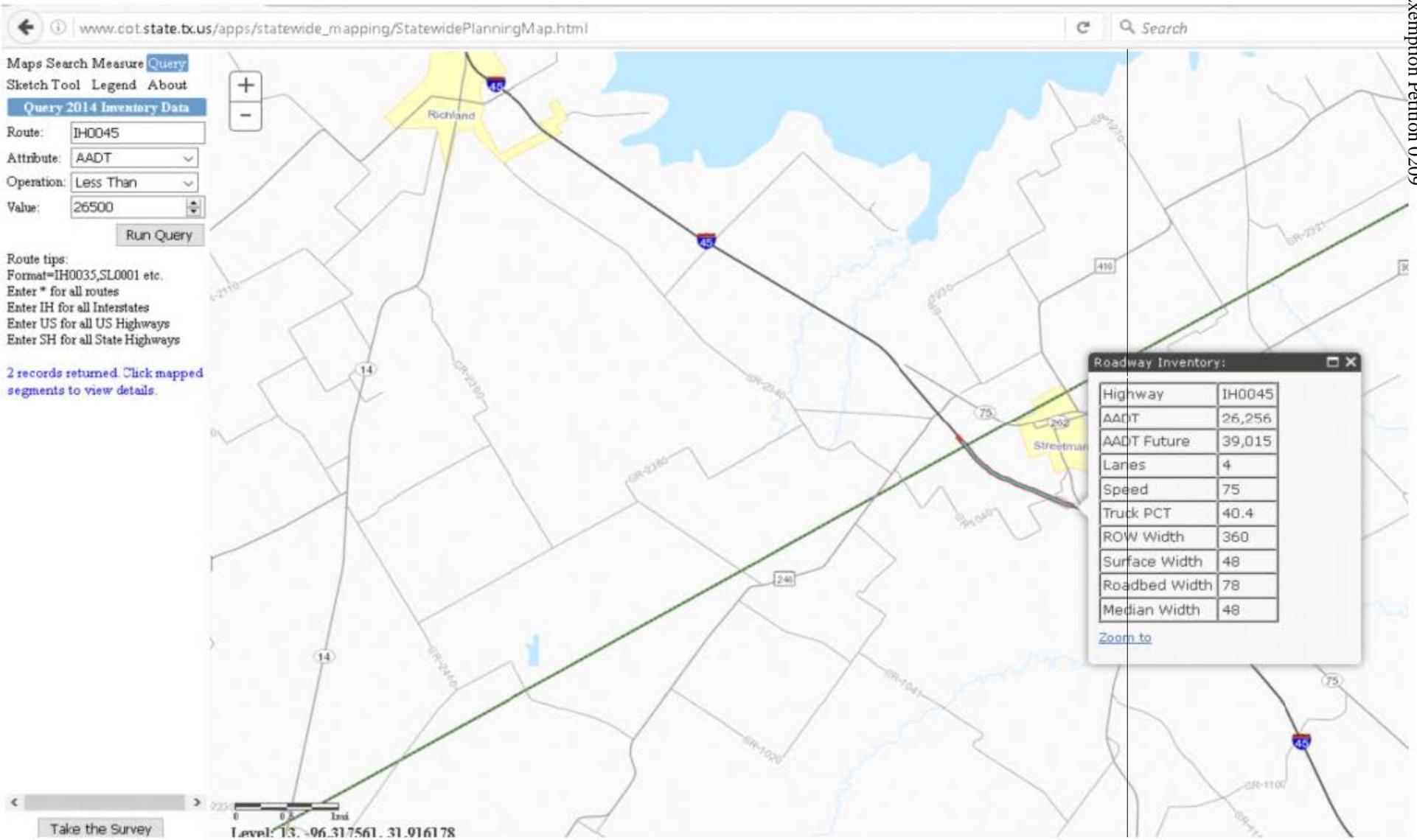


Exhibit 15

- The Texas TGV Study's subsequent finding of modal bias reversal once the service features of HSR (leg room, on board luggage etc) were incorporated into the model structure.
- The 2010 Lone Star Market Study ridership model coefficients showing modal bias preference towards HSR – presumably as a result of greater public awareness of the HSR concept during the intervening years.

Both the Texas TGV Study and the subsequent updates in the Lone Star Market Study identified potential modeling issues related to the presence of auto captives within the travel market. The Lone Star Market Study estimated the proportion of destination and en-route captives at approximately 55 and 22 percent respectively. En-route captives, defined as travelers who require a vehicle to make any number of intermediate stops during their intercity journey, were excluded from the potential HSR market. Destination captives, defined as travelers who require a private auto-vehicle at their intercity destination, were still considered potential HSR travelers as long as the appropriate additional taxi fares or car rental costs were included in their mode choice decision.

Whereas the Texas Turnpike Authority Study estimated induced ridership based on the reported results from other case studies, both the Texas TGV and subsequent Lone Star Market studies, relied on a generalized cost of travel approach that has been used in other HSR assessments such as the California HSR Study.

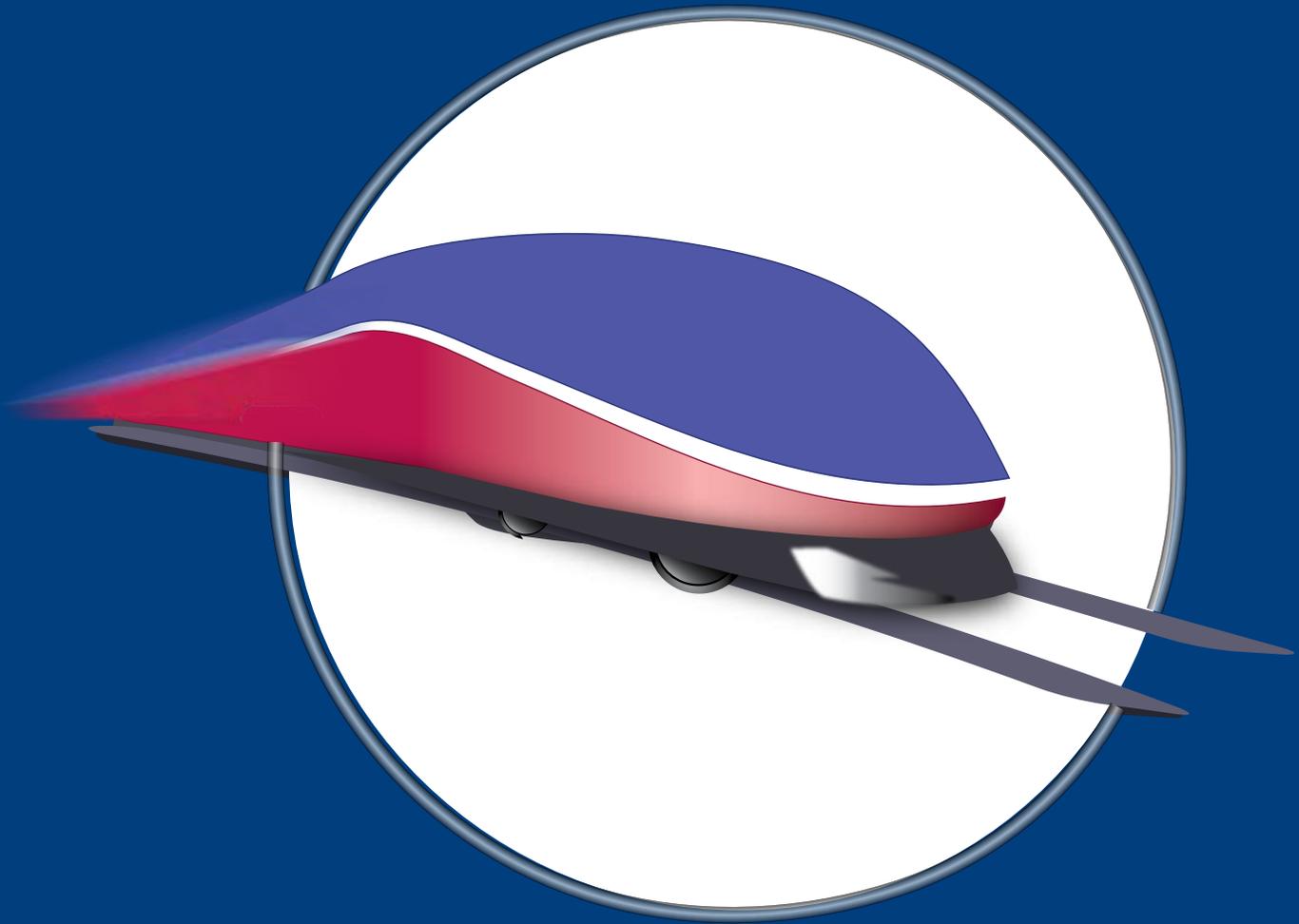
Ridership Forecasts and Results. The Texas Turnpike Authority Study does not state the market capture potential of HSR, however, the Texas TGV Study found an overall market capture of approximately 35% (15% auto capture and 65% air capture). The Lone Star Market Study implies an overall market capture of 15% based on a 5% capture from autos and 84% capture from the significantly reduced air travel market.

Both the Texas Turnpike Authority and Texas TGV/Lone Star Market Studies suggested a revenue maximizing fare approximately equal to 80% of the estimated air fare for travel between Dallas and Houston.

In addition to highlighting potential issues for consideration, the above summary demonstrates the degree to which the previous literature helped provide an analytical/contextual background for understanding and evaluating the results of this feasibility study.

Exhibit 16

Vision For *HIGH-SPEED RAIL* In America



U.S. Department of Transportation
Federal Railroad Administration



USDOT
TIGER
DOT.GOV

April 2009
HIGH-SPEED RAIL STRATEGIC PLAN
The American Recovery and Reinvestment Act



**U.S. Department
of Transportation**

Office of the Secretary
of Transportation

1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Members of Congress:

It is with great enthusiasm that I submit this strategic plan for high-speed rail. In the last century, a national vision led to the creation of the world's most advanced highway and aviation networks – helping spur unprecedented economic growth and urban development. Now, President Obama is ready to make a renewed commitment to the Nation's travelers – not just to upgrade and maintain our aging highway and aviation systems, but to build a world-class network of high-speed passenger rail corridors.

We face a complex set of challenges in the 21st century – building a robust, green economy, gaining energy independence, reversing global climate change, and fostering more livable, connected communities. These new challenges require creative new transportation solutions. A combination of express and regional high-speed corridors, evolving from upgraded, reliable intercity passenger rail service, has proven effective in addressing many of these challenges around the world and in selected U.S. corridors. The President is committed to bringing this successful approach to key travel corridors across America.

We begin that process here, and will further develop and refine it in the coming months through our budget and policy proposals. Throughout the process of advancing this new transportation vision, the President has asked me to reach out to you, our State partners, other key stakeholders and the public. We will, therefore, be seeking feedback and suggestions that help lead us to a successful implementation of this high-speed rail initiative.

I look forward to working with Congress as we embark on this exciting new journey to transform America's transportation system.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ray LaHood', written over a faint, larger version of the same signature.

Secretary Ray LaHood

Contents

Executive Summaryi

Introduction1

Background and Context4

 Historical Perspective4

 Current Challenges7

 Legislative Foundation9

Proposed Strategy12

 Funding Approach12

 Project Selection14

 Implementation Schedule16

Next Steps17

Executive Summary

In the 20th century, the United States built highway and aviation networks that transformed the country – fueling unprecedented economic expansion, fostering new communities and connecting cities, towns and regions. Strong public-sector leadership along with private industry partnerships were the lynchpins to that success. States forged the path by identifying the needs and investing in key portions of the system, private industry brought innovation and resources, and the Federal Government provided an integrating vision, the policy roadmap and a funding framework that enabled the realization of a national system.

We now face a new set of transportation challenges – creating a foundation for economic growth in a more complex global economy, promoting energy independence and efficiency, addressing global climate change and environmental quality, and fostering livable communities connected by safe, efficient, modes of travel. The existing transportation system requires significant investment simply to rebuild and maintain critical infrastructure and modernize aging technologies. Meeting our 21st century challenges will require new transportation solutions as well.

A New Transportation Vision. President Obama proposes to help address the Nation’s transportation challenges by investing in an efficient, high-speed passenger rail network of 100- to 600-mile intercity corridors that connect communities across America. This vision builds on the successful highway and aviation development models with a 21st century solution that focuses on a clean, energy-efficient option (even today’s modest intercity passenger rail system consumes one-third less energy per passenger-mile than automobiles, for example¹).

Strategic Transportation Goals

- Ensure safe and efficient transportation choices
- Build a foundation for economic competitiveness
- Promote energy efficiency and environmental quality
- Support interconnected livable communities

Developing a comprehensive high-speed intercity passenger rail network will require a long-term commitment at both the Federal and State levels. The President proposes to jump-start the process with the \$8 billion down payment provided in the American Recovery and Reinvestment Act (ARRA) and a high-speed rail grant program of \$1 billion per year (proposed in his fiscal year (FY) 2010 budget). These first steps emphasize strategic investments that will yield tangible benefits to intercity rail infrastructure, equipment, performance, and intermodal connections over the next several years, while also creating a “pipeline” of projects to enable future corridor development.

A major reshaping of the Nation’s transportation system is not without significant challenges. After decades of relatively modest investment in passenger rail, the United States has a dwindling pool of expertise in the field and a lack of manufacturing capacity. Federal and State Governments face a difficult fiscal environment in which to balance critical investment priorities, and many will have to ramp up their program management

¹ Based on United States Department of Energy, 2007 Transportation Energy Data Book – for Amtrak and auto transportation; HSR can be even more energy-efficient.

infrastructure. The country's success in creating a sustainable transportation future, however, demands that we work to overcome these challenges through strong new partnerships among State and local governments, railroads, manufacturers and other stakeholders, along with the renewed Federal commitment proposed here.

Proposed Funding Approach. In order to meet the goals of the Recovery Act while initiating a transformational new program, we propose to advance three funding “tracks”:

- *Projects.* Provide grants to complete individual projects that are “ready to go” with preliminary engineering and environmental work completed.²
- *Corridor programs.* Enter into cooperative agreements to develop entire phases or geographic sections of corridor programs that have completed corridor plans and environmental documentation, and have a prioritized list of projects to meet the corridor objectives; this approach would involve additional Federal oversight and support.
- *Planning.* Enter into cooperative agreements for planning activities using non-ARRA appropriations funds, in order to create the corridor program and project pipeline needed to fully develop a high-speed rail network.

As President Obama outlined in his March 20, 2009, memorandum, *Ensuring Responsible Spending of Recovery Act Funds*, program evaluation will be based on “transparent, merit-based selection criteria.” Criteria will include:

- *Public Benefits.* The extent to which the project or corridor program provides specific, measurable, achievable benefits in a timely and cost-effective manner, including: (1) contributing to economic recovery efforts, (2) advancing strategic transportation goals (outlined above), and (3) furthering other passenger rail goals articulated in recently-passed authorizing legislation.
- *Risk Mitigation.* The extent to which the project or corridor program addresses critical success factors, including: (1) fiscal and institutional capacity to carry out projects, (2) realistic financial plans for covering capital and operating costs, (3) formal commitments from key stakeholders (e.g., railroads and neighboring States), and (4) adequate project management oversight experience and procedures.

Next Steps. This Strategic Plan is just the first of several steps intended to further refine and elaborate on this high-speed rail corridor vision – including the program guidance (due June 17), the President's detailed fiscal year 2010 budget request, the National Rail Plan called for by Congress, and discussions over upcoming surface transportation legislation. The U.S. Department of Transportation (DOT) intends to seek structured input from stakeholders and the public throughout the process of developing and implementing the strategy.

² Environmental review and preliminary engineering expenses needed to prepare projects for construction will also be eligible.

Introduction

After 60 years and more than \$1.8 trillion of investment,³ the United States has developed the world's most advanced highway and aviation systems. Yet these systems face mounting congestion and rising environmental costs. Moreover, the Nation's current transportation system consumes 70% of our oil demand – much of it from overseas sources – and contributes 28% of greenhouse gas emissions.

The highway and aviation networks will always remain indispensable elements of the country's transportation system, and significant investment is needed in those modes to rebuild essential infrastructure and modernize aging technologies. But it is also clear that the existing infrastructure is insufficient to handle the Nation's future passenger and freight mobility demands. A new approach is needed – one that responds to today's economic, energy, and environmental challenges.

Strategic Transportation Goals

Transportation investment strategy must address several strategic goals in the coming years:

- Ensure safe and efficient transportation choices. Promote the safest possible movement of goods and people, and optimize the use of existing and new transportation infrastructure.
- Build a foundation for economic competitiveness. Lay the groundwork for near-term and ongoing economic growth by facilitating efficient movement of people and goods, while renewing critical domestic manufacturing and supply industries.
- Promote energy efficiency and environmental quality. Reinforce efforts to foster energy independence and renewable energy, and reduce pollutants and greenhouse gas emissions.
- Support interconnected, livable communities. Improve quality of life in local communities by promoting affordable, convenient and sustainable housing, energy and transportation options.

As Figure 1 illustrates, each transportation mode plays a critical role in intercity passenger transportation, but the comparative advantage of each varies by market factor.

Figure 1
Potential Modal Comparative Advantage by Market⁴

Intercity Distance Mile			
Population Density	0-100	100-600	600-3,000
Light	1) Auto	1) Auto 2) Conventional Rail	1) Auto 2) Air
Moderate	1) Auto 2) Commuter Rail	1) High Speed Rail 2) Auto	1) Auto 2) Air
High	1) Commuter Rail 2) Auto	1) High Speed Rail 2) Air	1) Air

³ In constant 2009 dollars.

⁴ Not intended to be definitive “rankings” but simply to illustrate where modes tend to better meet strategic goals; modes not listed in markets can play important “niche” roles – e.g., bus and long-distance rail.

High-Speed Rail

High-speed intercity passenger rail can play a critical role in certain travel markets, but the United States has historically failed to invest in this mode. The President proposes a long-term strategy intended to build an efficient, high-speed passenger rail network of 100- to 600-mile intercity corridors, as one element of a modernized transportation system.

In the near term, this proposal lays the foundation for that network by investing in intercity rail infrastructure, equipment and intermodal connections, beginning with an \$8 billion down payment provided under ARRA, and continuing with a high-speed rail grant program of \$1 billion per year (as called for in the President's FY 2010 budget proposal).

The near-term investment strategy seeks to:

- Advance new express high-speed corridor services (operating speeds above 150 mph on primarily dedicated track) in select corridors of 200–600 miles.
- Develop emerging and regional high-speed corridor services (operating speeds up to 90–110 mph and 110–150 mph respectively, on shared and dedicated track) in corridors of 100–500 miles.
- Upgrade reliability and service on conventional intercity rail services (operating speeds up to 79–90 mph).

Definitions:

High-Speed Rail (HSR) and Intercity Passenger Rail (IPR)*

HSR – Express. Frequent, express service between major population centers 200–600 miles apart, with few intermediate stops. Top speeds of at least 150 mph on completely grade-separated, dedicated rights-of-way (with the possible exception of some shared track in terminal areas). Intended to relieve air and highway capacity constraints.

HSR – Regional. Relatively frequent service between major and moderate population centers 100–500 miles apart, with some intermediate stops. Top speeds of 110–150 mph, grade-separated, with some dedicated and some shared track (using positive train control technology). Intended to relieve highway and, to some extent, air capacity constraints.

Emerging HSR. Developing corridors of 100–500 miles, with strong potential for future HSR Regional and/or Express service. Top speeds of up to 90–110 mph on primarily shared track (eventually using positive train control technology), with advanced grade crossing protection or separation. Intended to develop the passenger rail market, and provide some relief to other modes.

Conventional Rail. Traditional intercity passenger rail services of more than 100 miles with as little as one to as many as 7–12 daily frequencies; may or may not have strong potential for future high-speed rail service. Top speeds of up to 79 mph to as high as 90 mph generally on shared track. Intended to provide travel options and to develop the passenger rail market for further development in the future.

* Corridor lengths are approximate; slightly shorter or longer intercity services may still help meet strategic goals in a cost-effective manner.

This near-term strategy emphasizes making investments that yield tangible results within the next several years, while also creating a “pipeline” that enables ongoing future corridor development.

Benefits of Passenger Rail

Rail is well positioned to address many of the Nation’s strategic transportation goals:

Safe and efficient transportation options. Rail is a cost-effective means for serving transportation needs in congested intercity corridors. In many cases, modest investment on existing rights-of-way can result in high-speed rail (HSR) and intercity passenger rail (IPR) service with highly competitive trip times, while also providing ancillary benefits to energy-efficient freight rail service. IPR and HSR also have a strong track record of safety in the United States and overseas. In Japan, for instance, the Tokaido Shinkansen trains have operated without a derailment or collision since the inception of operations in 1964.

Foundation for economic competitiveness. America’s transportation system is the lifeblood of the economy. Providing a robust rail network can help serve the needs of national and regional commerce in a cost-effective, resource-efficient manner, by offering travelers convenient access to economic centers. Moreover, investment in HSR/IPR will not only generate high-skilled construction and operating jobs, but it can also provide a steady market for revitalized domestic industries producing such essential components as rail, control systems, locomotives, and passenger cars.

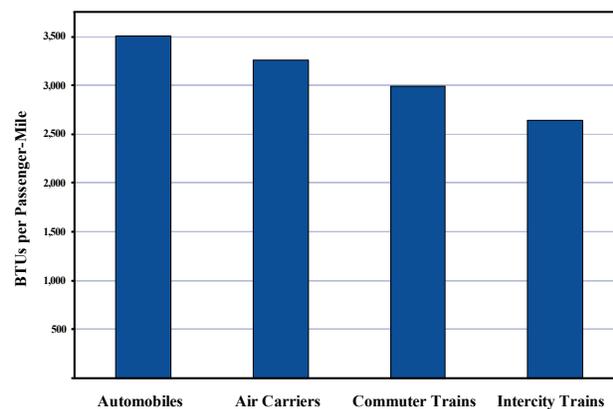
Energy efficiency and environmental quality.

Rail is already among the cleanest and most energy-efficient of the passenger transportation modes (see Figure 2). A future HSR/IPR network using new clean diesel or electric power can further enhance rail’s advantages. According to one recent study, implementation of pending plans for the federally designated

HSR corridors could result in an annual reduction of 6 billion pounds of CO₂ (2.7 MMTCO₂).⁶

Interconnected livable communities. Rail transport has generally been associated with “smart growth” because it can foster higher-density development than has typically been associated with highways and airports. Rail is uniquely capable of providing both high-speed intercity transportation and its own efficient local access and egress system. For example, in the Boston region, Amtrak’s Acela serves two downtown stations connected to public transit – South Station and Back Bay – as well as a suburban station at Route 128. Yet just a few miles down the line to the west, Acela achieves speeds up to 130 miles per hour, and then 150 miles per hour.

Figure 2
Energy Efficiency of
Passenger Transportation Modes⁵



⁵ U.S. Department of Energy, “Transportation Energy Data Book,” Edition 26, May 2007.

⁶ Joint 2006 study by the Center for Clean Air Policy and Center for Neighborhood Technology, <http://www.cnt.org/repository/HighSpeedRailEmissions.pdf>

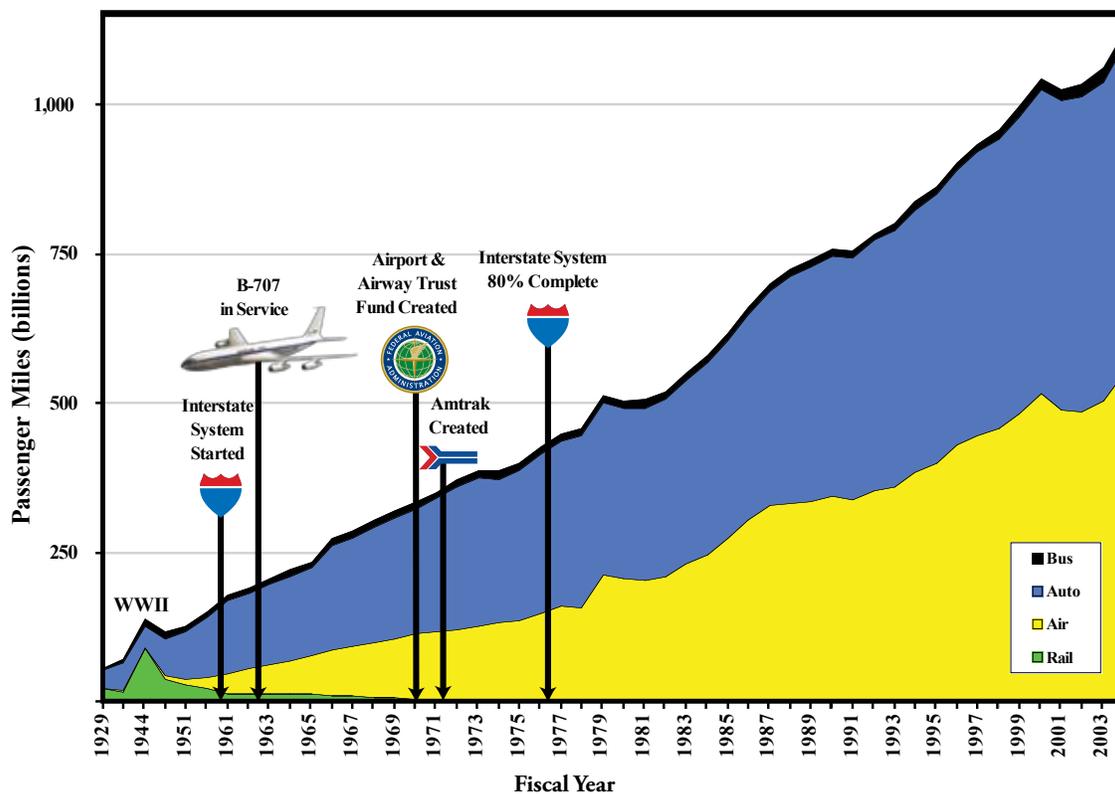
Background and Context

In order to understand the proposed approach for launching high-speed rail in America, it is important to briefly review the history of intercity passenger rail, the challenges in implementing the new vision, and the legislative underpinnings for it.

Historical Perspective

While it was once the preeminent mode of travel, intercity passenger train travel in America has played a relatively minor role in the second half of the 20th Century. As Figure 3 displays, with the expansion of the highway and aviation systems, total intercity travel in the United States has grown dramatically. Intercity passenger rail traffic, however, after peaking during World War II, collapsed in the late 1950s and 1960s, reaching a low point of 4.3 billion passenger-miles in 1972, after the private railroads got out of the business.

Figure 3
U.S. Intercity Travel Trends by Modal Share, 1929-2004⁷

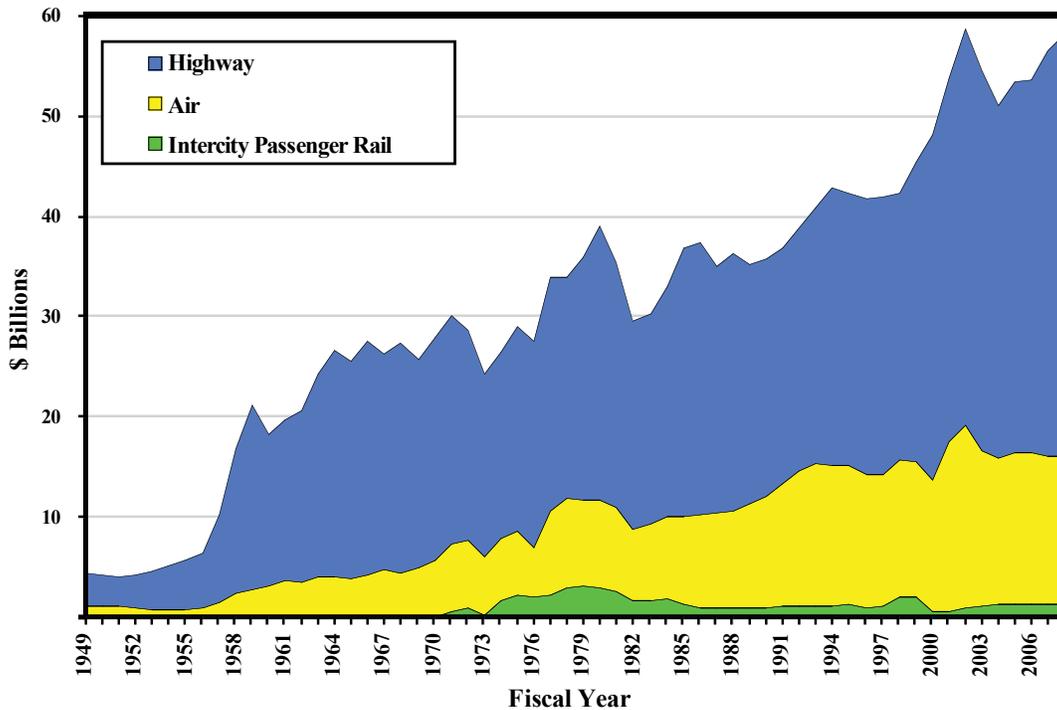


Much of this growth in intercity travel has been fueled by an aggressive public investment strategy. For six decades, Federal transportation policies have focused most intercity transportation investments in the highway

⁷ Estimates based on data from U.S. DOT and Association of American Railroads and the American Travel Survey (1995).

and aviation systems. As Figure 4 displays, passenger rail has represented less than 3 percent of the rapidly growing Federal investment in intercity transportation, and until this year, that share has been shrinking.

Figure 4
Federal Investment in Intercity Transportation, 1949-2008
(2009 Constant Dollars. Time Axis Not to Scale.)



Funding and Ownership

In 1970, Congress created the National Railroad Passenger Corporation (Amtrak) to preserve remaining passenger service over a national system of routes. Amtrak was formed as a private, for-profit Federally-sponsored corporation. The company was granted rights of access to tracks owned by the private railroads at incremental cost, along with operating priority over freight trains, in exchange for relieving the railroads of their direct passenger service obligations and associated financial losses.

Moreover, Amtrak relies almost exclusively on annual Federal appropriations to cover both its capital needs and operating deficits, making long-term planning decisions difficult. Amtrak's capital investments have largely failed to keep up with the needs of its existing fleet and infrastructure, and aside from the Northeast Corridor (NEC) Improvement Project, few upgrades to the system have been made. States like California, Illinois, North Carolina, Washington and others have independently sponsored rail services and capital investments, but significant modernization of rail systems and service has remained out of reach of many States. While other modes have historically benefited from dedicated Federal funding for infrastructure investment, rail has had no such Federal capital matching source. Figure 5 illustrates how State capital dollars can be leveraged by Federal matching dollars for each mode.⁸

⁸ Federal matching funding (i.e., leverage) varies by specific project; these numbers are examples.

Designated High-Speed Rail Corridors

Over the past two decades, the Federal Government has taken small steps to lay the groundwork for an expansion of HSR and IPR, but has provided little funding for these efforts. In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) established a program to fund safety improvements at highway-rail grade crossings on corridors to be “designated” as high-speed intercity passenger rail corridors; the maximum funding for the program in most years was about \$5 million.

Of the 11 authorized high-speed corridor designations, several successive Secretaries of Transportation have designated 10 (displayed, along with other intercity passenger routes, in Figure 6).⁹

Figure 5
Example: Historical Federal Funding Leverage by Mode

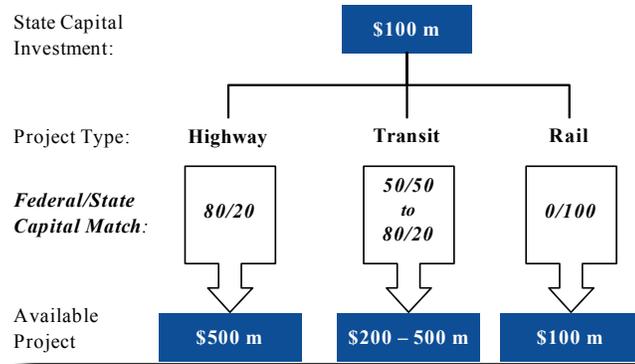
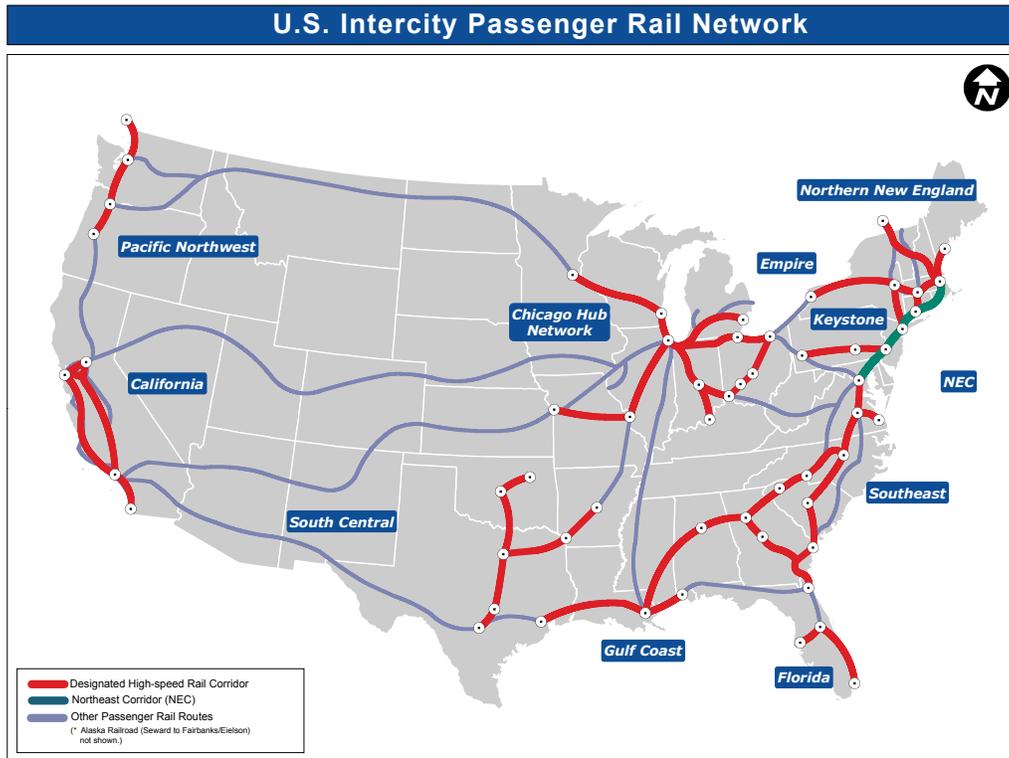


Figure 6
Designated High-Speed Rail Corridors and the North East Corridor



⁹ See www.fra.dot.gov/us/content/618 for more information. Note that corridor designations were made based on State applications for corridors expected to achieve 90 mph – to address highway-rail grade crossings; since the NEC already operated above 90 mph and had few grade crossings, no State applied.

International Examples

After leading the world in rail development during the 19th and early 20th centuries, the United States has more recently lagged behind other countries in developing modern intercity passenger rail. Over the last several decades, many countries in Europe and Asia have developed HSR systems. Figure 7 highlights several examples of HSR system characteristics around the world.

Figure 7

International Examples of HSR¹⁰

	Japan	France	Germany	UK	China	US
Date of initiation	1964	1981	1988	2003	2007	1969/2000
System length (route-miles)	1,360	1,180	798	70	588	457
Top operating speed (mph)	188	199	186	186	186	125/150
HSR ridership (millions)	300	100	67	8	No Data	11

HSR in Europe often developed gradually, moving by stages from “emerging” to “regional” to “express,” as conventional rail services reached capacity. For example, in the 1950s and 1960s, the French National Railways introduced high-speed services at up to 125 mph, including the Mistral and the Capitole, over existing trackage in the Paris–Lyon and Paris–Toulouse markets. After those services had proven their value, the French wholly or partially replaced them with TGV¹¹ services in the 1980s. In the United States, an analogous approach marked the NEC, in which the Metroliners of the late 1960s and 1970s proved the concept that passengers would ride trains that competed with air on door-to-door travel times – thus leading to the Northeast Corridor Improvement Project.

Current Challenges

Against this backdrop of limited historical investment and unique institutional arrangements, there are a number of challenges inherent in advancing a new passenger rail vision.

Lack of Expertise and Resources. The relatively small investment in passenger rail in recent decades and growing retirements of personnel throughout the rail sector have resulted in a shrinking pool of experts in the field, including engineers skilled in signal, track, and rolling stock design, along with experienced rail planners and managers. A renewed investment program will eventually bring more expertise back into the industry, but that process is likely to lag behind the need to plan, implement and manage a major new program. Moreover, the Federal and State agencies responsible for administering this effort will need to aggressively build capacity to manage their new portfolios; and the freight railroads and Amtrak will need to identify resources to support the new effort without diverting from their core operating and maintenance responsibilities.

¹⁰ International data from: GAO report, High-Speed Passenger Rail (GAO-09-317); UIC High-Speed Department, “High-Speed Lines in the World” www.uic.asso.fr/uic/spip.php?article573; and Jane’s World Railways 2007-2008. International ridership data is from 2007, except for Germany and U.K., which are from 2005. Amtrak data from FY 2008; represents both NEC Regional (predecessor service began in 1969) and Acela services.

¹¹ “Train à grande vitesse” or “high-speed train.”

State Fiscal Constraints. The current economic downturn has left many States in a precarious fiscal condition. Many lack resources to make capital investments or take on potential rail operations expenses. In spite of these fiscal constraints, some States have continued to invest in passenger rail, even without Federal support, and many have funded operating costs for running intercity passenger rail services. While an expansion of passenger rail and development of HSR fits well into the transportation vision of many States, decisionmakers will have been confronted with difficult budget decisions to advance these programs in coming years, even with an expanded Federal commitment.

Partnerships with Private Railroads. Although Federal law provides Amtrak a right of access to private railroad facilities, that access has been constrained by the capacity of rail lines and by freight traffic. With the prospect of significant public funding flowing through States to support capital investments – often in existing, privately owned rail lines – for expanded and improved passenger services, partnerships will be needed between States and the private railroads that own the infrastructure. Whether for comprehensive corridor improvement programs or discrete projects, State-railroad agreements will be needed to ensure that public investments will fulfill, and continue to be available for, their intended purposes.

Multi-State Partnerships. Most intercity passenger rail corridors, including designated high-speed rail corridors, cross State boundaries. Viable HSR corridor strategies will, therefore, require a multi-State partnership in many cases. To successfully plan, fund, build and operate these corridors, the States involved will need to act in a coordinated fashion, through an interstate compact, a multi-State agreement, or other instrument. Any such multi-State understanding will require the backing of several political and administrative entities within each State.

Need for High-Speed Rail Safety Standards. While most high-speed systems overseas have a good safety record, usually on dedicated track, U.S. railroad safety standards are designed to keep passengers and crew safe in a mixed operating environment with conventional freight equipment, which is much heavier than comparable foreign equipment. The advent of Positive Train Control (PTC), crash energy management, and other advances provides the United States with an opportunity to revise its safety approach in a manner that accelerates the development of high-speed rail while preserving and improving upon a strong safety regime. This will be a challenge for the Federal Railroad Administration (FRA) as it seeks to administer its critical safety responsibility and facilitate high-speed rail development. The systems approach required to ensure safety of new HSR corridors will necessitate consideration of additional changes in several regulations, including equipment, system safety, and collision and derailment prevention.

Legislative Foundation

Until last year, the legislative debate surrounding intercity passenger rail has focused primarily on institutional and structural policy priorities regarding Amtrak, and limited efforts to improve services centered primarily on the Northeast Corridor. Beginning in FY 2008, however, Congress established a new framework for intercity passenger rail development with the passage of four key pieces of legislation:

- The FY 2008 Appropriation Act, which established a new IPR State Grant Program.¹²
- The Rail Safety Improvement Act of 2008 (RSIA).¹³
- The Passenger Rail Investment and Improvement Act of 2008 (PRIIA).¹⁴
- The American Recovery and Reinvestment Act of 2009 (ARRA).¹⁵

IPR Capital Assistance to States. The major shift in Congressional direction for intercity passenger rail development began with the establishment of a new pilot program for joint Federal-State IPR capital investment, known as Capital Assistance to States – Intercity Passenger Rail Service (“State Grant Program”). Under this program, \$30 million in Federal funding was made available to States on a competitive basis, subject to a 50-percent non-Federal match. The law established basic eligibility and evaluation criteria, and allowed up to 10 percent of the funding to be used for rail corridor planning grants. Although Federal-State IPR capital investment programs had been contemplated before (e.g., under the original proposals for the Swift Rail Development Act of 1994), the FY 2008 program marked the first time any such proposal had been enacted into law.

Rail Safety Improvement Act of 2008 (RSIA).¹⁶ RSIA reauthorizes and augments FRA’s safety programs. Notably, from an intercity passenger rail development perspective, RSIA requires implementation of PTC systems on every main line over which intercity rail passenger or commuter rail passenger service is regularly provided.¹⁷ Each Class I railroad carrier and each regularly scheduled intercity or commuter railroad must install PTC systems by December 31, 2015, for governing operations on: (1) its main line over which intercity rail passenger or commuter rail passenger service is regularly provided; (2) its main line over which hazardous materials that are poisonous- or toxic-by-inhalation are transported; and (3) such other tracks as the Secretary designates by regulation or order. Addressing the practical requirements of this provision remains a financial challenge for passenger and freight rail operators.

Passenger Rail Investment and Improvement Act of 2008 (PRIIA). Enacted as part of the same bill as RSIA, PRIIA represents the most sweeping Congressional action on intercity passenger rail since those that created Amtrak and the Northeast Corridor Improvement Project during the 1970s. In addition to reauthorizing

¹² Included in Division K of Public Law 110-161.

¹³ Division A of Public Law 110-432.

¹⁴ Division B of Public Law 110-432.

¹⁵ Public Law 111-5.

¹⁶ Public Law No. 110-432, Division A, enacted Oct. 16, 2008.

¹⁷ “Positive Train control” means a system designed to prevent collisions between trains, overspeed derailments (derailments caused when a train exceeds speed limits), incursions into established work zone limits (i.e., for roadway workers maintaining track), and the movement of a train through an improperly positioned switch.

Amtrak, PRIIA builds upon the experience of the FY 2008 State Grant Program by establishing three new competitive grant programs for funding high-speed and intercity passenger rail capital improvements:

- *Intercity Passenger Rail Service Corridor Capital Assistance* (Section 301).¹⁸ Under this section, the broadest of the three new grant programs established under PRIIA, States (including the District of Columbia), groups of States, interstate compacts, and public IPR agencies established by one or more States may apply for grants to fund up to 80 percent of the cost of capital improvements to benefit all types of IPR service. In order to be eligible for funding under this program, proposed projects must be included in a State Rail Plan.
- *High-Speed Rail Corridor Development* (Section 501).¹⁹ Although similar in structure, criteria, matching requirements, and conditions as Section 301, eligibility for this program is restricted to projects intended to develop high-speed rail corridors. Such projects must be located on a Federally designated HSR corridor, and be intended to benefit IPR services reasonably expected to reach speeds of at least 110 miles per hour. Participant eligibility for this program is also broadened from Section 301 to include Amtrak.
- *Congestion Grants* (Section 302).²⁰ This program authorizes grants to States or to Amtrak (in cooperation with States) for financing up to 80 percent of the capital costs of facilities, infrastructure, and equipment for high-priority rail corridor projects necessary to reduce congestion or facilitate ridership growth in IPR transportation. The program incorporates the same grant conditions as those applicable under Sections 301 and 501.

In addition to establishing these new grant programs, PRIIA includes a number of other relevant provisions, including:²¹

- *Rail Planning*.²² PRIIA attempts to put rail on an equal footing with planning for other transportation modes by requiring State Rail Plans as a prerequisite to receiving grant funding. These plans are to be comprehensive documents intended to lay out the State's vision, objectives, service goals, capital investment plans, and project funding priorities for all passenger and freight rail services. PRIIA also requires DOT to develop a National Rail Plan that is consistent with approved State Rail Plans and outlines the national rail policies and priorities to promote an integrated, cohesive, efficient, and optimized rail system for the movement of goods and people.
- *Public-Private HSR Concepts* (Section 502). PRIIA encourages public-private partnerships through a call for proposals for the financing, design, construction, operation and maintenance of high-speed rail services operating within one of the designated HSR corridors or the NEC. FRA published a Request for Expressions of Interest in the Federal Register on December 16, 2008, initiating the process.

¹⁸ 49 U.S.C. Chapter 244.

¹⁹ 49 U.S.C. § 26101 *et seq.*

²⁰ 49 U.S.C § 24105.

²¹ See <http://www.fra.dot.gov/downloads/PRIIA%20Overview%20031009.pdf> for more information.

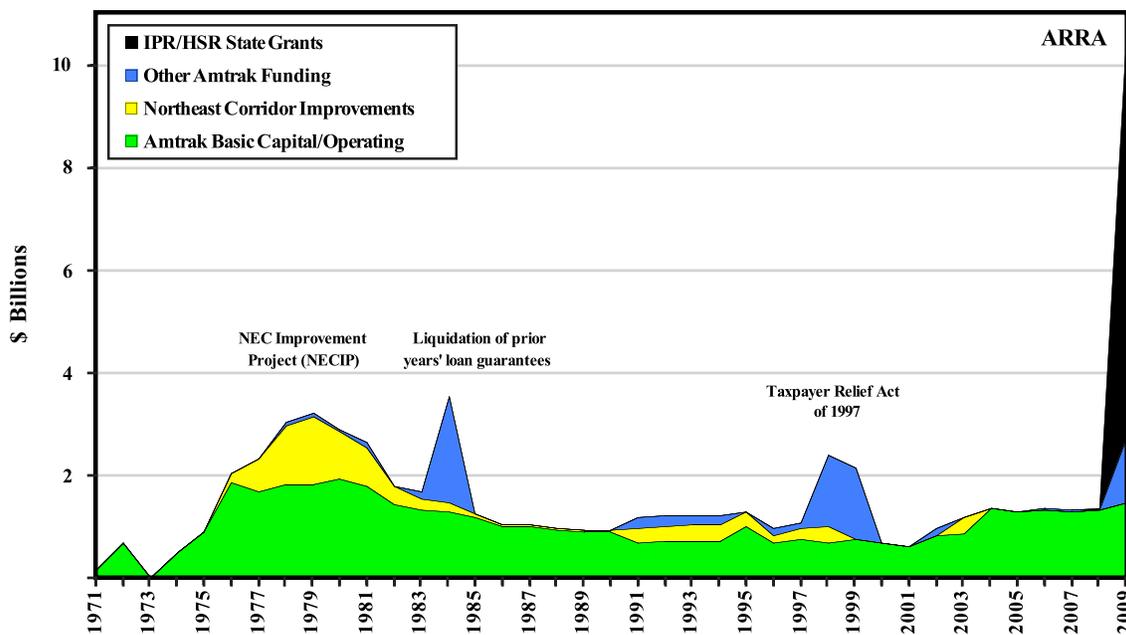
²² Sections 303 and 307 – 49 U.S.C. Chapter 227 and § 103(j)(2)-(3).

PRIIA states that eligible projects are to be advanced to commissions for review; and that meritorious projects are to be recommended to the DOT Secretary and subsequently to Congress for action.²³

American Recovery and Reinvestment Act of 2009. The \$8 billion HSR/IPR funding contained in ARRA represents the first appropriations for Sections 301, 302 and 501 of PRIIA, and a major “jump start” for the widespread development of improved intercity passenger rail service. In keeping with the urgent nature and underlying purposes of ARRA, the Act waives the non-Federal matching funding requirements for all three programs, suspends the requirement that proposed projects be included in a State Rail Plan (along with the eligibility of State Rail Planning costs for ARRA funding), and allows for the issuance of interim guidance to govern the procedures and conditions for the programs. ARRA further directs the Secretary of Transportation to give priority to projects that support the development of HSR service, and requires that the Secretary submit to Congress this Strategic Plan describing how the funding will be used to further that objective. Unlike funding for other programs provided through ARRA, the law allows the intercity passenger rail development funding to remain available for obligation until September 30, 2012.

Annual Appropriations. Since Amtrak’s inception, funding for intercity passenger rail has been provided through the annual appropriations process, often without even the benefit of an authorization that sets longer-term planning parameters. Moreover, funding has focused on basic operating and capital maintenance requirements, with capital improvement funds primarily dedicated to the NEC. Any development of other corridors around the country has historically relied on State funding. Starting with the FY 2008 and FY 2009 appropriations, and now with ARRA, the Federal Government is committing for the first time to become a substantial partner in high-speed intercity passenger rail investment. Figure 8 shows Federal funding over the last four decades for Amtrak and recently for States.

Figure 8
Federal Funding for Intercity Passenger Rail, 1971-2009



²³ See 73 FR 76443.

Proposed Strategy

While the \$8 billion provided in ARRA is a substantial Federal commitment to high-speed rail development, it represents only a down payment on a longer-term passenger rail development strategy. Coupled with reliable funding of Amtrak assets and services, an ongoing annual investment program is needed to build a 21st century transportation network that includes a central role for high-speed passenger rail in corridors of 100–600 miles. President Obama has proposed to begin that ongoing investment in his FY 2010 budget proposal, which calls for high-speed rail funding of \$1 billion per year for 5 years.

ARRA directs funds toward projects that will aid in near-term economic recovery, while laying a foundation for longer-term economic stability and competitiveness. The approach we propose for the HSR/IPR program seeks to do just that. Unlike other established programs funded by ARRA, the \$8 billion in HSR/IPR funding represents the first commitment of Federal funds towards discretionary grant programs authorized just last year in PRIIA (summarized above). As a new program, the strategy for its implementation must address a unique set of challenges. A sustainable program that builds out a modern high-speed rail network to meet the President's strategic transportation goals will require substantial planning efforts on the part of States and the Federal Government. PRIIA lays the groundwork for these efforts through its requirements for State Rail Plans and a National Rail Plan. In the meantime, the strategy for deploying ARRA funding will have to rely on existing plans to establish project funding priorities.²⁴

States have had little time to prepare for a Federal capital matching program for intercity passenger rail of this magnitude. Nonetheless, some States have been putting together corridor plans and even investing some of their own resources in development of those corridors. Other States have identified incremental projects that yield benefits to existing intercity passenger rail services (e.g., relieving infrastructure bottlenecks, adding frequencies, or upgrading equipment). Yet others are at just the early stages of planning but, with some assistance, can be in a position to develop services in the coming years.

Funding Approach

DOT's implementation of the \$8 billion HSR/IPR program must recognize these realities while meeting the goals of ARRA, and at the same time, the strategy must help advance the longer-term goal of developing a national HSR/IPR network of corridors. In order to meet these diverse constraints, our strategy establishes three approaches, or "tracks," for funding under ARRA and annual appropriations:

1. *Projects.* Grants to complete individual projects eligible under Sections 301 (IPR projects) and Sections 302 (congestion projects) described above, for the benefit of existing services²⁵. Eligible projects include infrastructure, facilities and equipment. In order to qualify, these projects must: (a) be "ready to go" (i.e., environmental work required by law (National Environmental Policy Act, or NEPA) and preliminary engineering (PE) are complete),²⁶ and (b) demonstrate "independent utility."²⁷ For projects that meet the

²⁴ As described in the Legislative Foundation section above, State rail planning is not eligible for funding under ARRA.

²⁵ Project eligibility for Section 301 funding provided under ARRA is limited by the statute to include only construction and rehabilitation projects as defined in 49 U.S.C. § 24401(2)(A) and (B), thus excluding both state rail planning projects (under 49 U.S.C. § 24401(2)(C)) and liability costs (under 49 U.S.C. § 24401(2)(D)).

²⁶ Environmental documentation to comply with the National Environmental Policy Act and related laws require completion of preliminary engineering design sufficient to evaluate environmental effects.

²⁷ "Independent utility" means the project is usable and provides benefits even if no additional transportation improvements in the area are made.

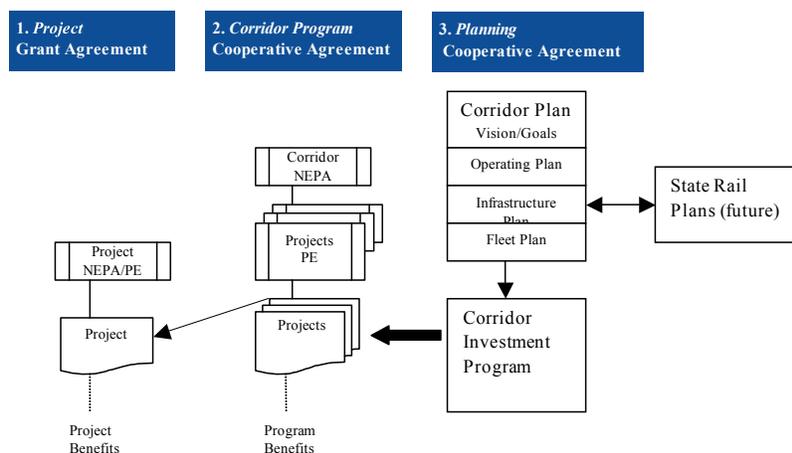
independent utility test but have not yet completed NEPA and PE, funding is available to conduct NEPA and PE work to make projects ready to go and, therefore, eligible under a subsequent grant solicitation. For rolling stock proposals, DOT will encourage acquisition of new, standardized, interoperable equipment that incorporates modern safety features.²⁸ Under this track, funds would be obligated for successful applications under standard grant agreement terms and conditions, including ARRA oversight and reporting procedures.

2. *Corridor programs.* Cooperative agreements to develop entire segments or phases of corridor programs eligible under Section 501 (HSR) and Section 301 (IPR), benefiting existing or new services. In order to qualify, these corridor programs must: (a) be based on a corridor plan that establishes service objectives and includes a prioritized list of projects to achieve those objectives;²⁹ and (b) have completed sufficient corridor/section/phase programmatic or project environmental (NEPA) documentation and sufficient planning to provide reasonable project cost and benefit estimates. For corridor programs that do not qualify under (a) and (b) above, funding is available to complete this work and make corridor programs eligible for subsequent solicitations. Under this track, funds for selected applications of a corridor program phase and/or geographic section would be set aside at the outset, and provided at pre-specified milestone approval points. This approach would involve a higher level of Federal oversight and support than under even the heightened scrutiny inherent in standard ARRA grant agreements.

3. *Planning.* Cooperative agreements for planning activities (including development of corridor plans and State Rail Plans) eligible for funding under Section 301 of PRIIA, using non-ARRA funds. This third track provides States an opportunity to prepare themselves for any funding remaining in subsequent rounds of ARRA, and/or future year appropriations. It is intended to help create the pipeline for future corridor development needed to build out a national HSR/IPR network.

Figure 9 illustrates this three-track funding approach.

Figure 9
Funding Tracks



²⁸ DOT plans to work with stakeholders to develop a process for facilitating this rolling stock approach.

²⁹ Corridor plans are an integrated set of studies that address: travel demand forecasts, existing rail line conditions, conceptual engineering, forecasts of future rail operations and simulation modeling, rail service plans, capital and operating financial plans, and a funding plan.

Project Selection

As President Obama outlined in his March 20, 2009, memorandum, *Ensuring Responsible Spending of Recovery Act Funds*, implementing agencies are to “develop transparent, merit-based selection criteria that will guide their available discretion in committing, obligating, or expending funds under the Recovery Act.” DOT is committed to carrying out this requirement through clear selection criteria and evaluation procedures.

The detailed application guidance to be issued by June 17, 2009, will provide specific instructions for applicants. In this strategic plan, we provide an overview of the criteria that will be used to evaluate applications along the three tracks outlined above. The forthcoming guidance will describe in more detail the application prerequisites for each program track along with the specific criteria that will be used to evaluate applications.

Prerequisites

Applications for project or program funding (i.e., tracks (1) and (2), respectively) will need to address several elements critical to the success of high-speed rail and intercity passenger rail programs and projects. The scope and specificity of each depends on stage of development (e.g., final design/engineering, construction) and the application track (i.e., corridor program vs. project), but all applications will need to address these prerequisites in some fashion. Prerequisites include:

- *Planning and Project Development.* Although the State rail planning requirements of PRIIA are waived, applicants must demonstrate that their project or corridor program: (a) is consistent with any overall plan for developing the corridor, segment of the corridor or terminal area; (b) has “independent utility” – that is, can achieve benefits regardless of whether other complimentary projects are implemented; and (c) addresses all safety and other regulatory requirements. Projects will need to have PE and environmental work completed before construction can be approved.³⁰
- *Stakeholder Agreements.* Applicants will need to have in place, or describe clearly how they will reach, written agreements to clarify roles and responsibilities and to ensure project success with: (a) other States involved in the corridor; (b) the infrastructure owners/host railroads; (c) the operator of the proposed service; and (d) any other stakeholders critical to project success. For corridor program applications, DOT strongly recommends reaching “master agreements” to cover the delivery of projects (in phases if relevant) over the course of the corridor development process.
- *Financial Plan.* Applicants will need to provide operating financial forecasts, based upon a rigorous approach to estimating ridership/revenue and operating and maintenance costs, and identify how they will cover operating losses, if any. The operating expenses funding proposal should identify any existing legislative commitments and/or a previous record of covering operating costs of intercity passenger rail services, recognizing that the role of the Federal Government under ARRA and PRIIA is to provide capital funding. The plan should also detail project capital costs, how they were estimated, and whether any non-Federal sources of funding will be included.

³⁰ PE and NEPA are eligible expenses under ARRA HSR/IPR grants; planning is not eligible under ARRA, but is eligible under FY 2009 appropriations IPR grants.

- *Project/Risk Management Plan.* As called for in PRIIA,³¹ and reinforced in the accountability requirements of ARRA, applicants will need to demonstrate that they have the capability to effectively manage corridor programs and projects. These plans will need to include items such as staff resources, budget, schedules, control/change order procedures, quality control processes, oversight provisions, and reporting mechanisms. The plans will also need to address the specific accountability, certifications, risk management and reporting procedures specified in ARRA. Demonstrated experience in successfully managing programs and projects of similar complexity and scrutiny will be helpful in making such a showing.

Selection Criteria

As the President's March 20 memo specified, project selection criteria are intended to advance projects that deliver programmatic results, achieve economic stimulus, achieve long-term public benefits, and satisfy transparency and accountability objectives. In order to ensure these objectives are met, HSR/IPR grant applications will be evaluated based on the following criteria, which will be detailed further in the upcoming guidance:

Achieving Public Benefits. The extent to which the project or corridor program provides specific, measurable, achievable benefits in a timely and cost-effective manner in relation to public sector and Federal investment costs. Applications will be evaluated on how well their project or corridor program:

- Contributes to economic recovery efforts by creating and/or saving jobs.
- Advances the President's strategic transportation goals to ensure safe and efficient transportation choices, build a foundation for economic competitiveness, promote energy efficiency and environmental quality, and support interconnected livable communities.
- Furthers other high-speed and intercity passenger rail goals outlined above and in PRIIA.

Mitigating Risks. Applications will be evaluated on the extent to which their project or corridor program addresses critical success factors (i.e., mitigates risk factors), including the approaches and procedures used to meet the prerequisites (listed above):

- Fiscal and institutional capacity to carry out and manage the project.
- Financial projections and plans to cover cost.
- Commitments from key stakeholders, including, notably, other States involved in the corridor, and the host railroads that own any existing required rail infrastructure.
- Experience and procedures for managing project financial, management, and construction risks.

Other Criteria. Other key considerations include:

- Timeliness of achieving benefits.
- Sufficiency of the reporting and management approach.
- Completeness and quality of the application.

³¹ Through the requirements specified in 49 U.S.C. § 24403.

Implementation Schedule

The proposed schedule for implementing this program seeks to balance the constraints facing potential applicants with the imperatives of ARRA and of developing a sustainable program for high-speed rail development. It contemplates two rounds, each with several solicitations, and subsequent rounds if funds are not completely obligated in the initial rounds.³² Figure 10 summarizes the application solicitation schedule, along with the policy development activities and outreach (described below in “Next Steps”).

Round 1. This round covers all three tracks outlined above, using both ARRA and FY 2009 appropriations funds.

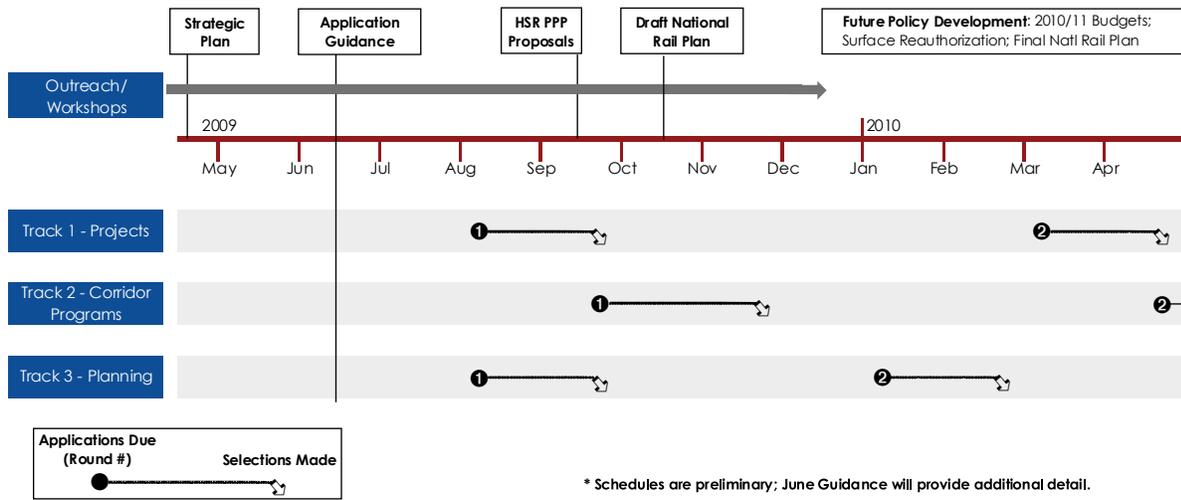
- *Solicitation 1.1 –Projects.* This solicitation is aimed at projects (track 1 above) that can either: (i) start immediately – i.e., planning, engineering, environmental and other preliminary work has all been completed; or (ii) require PE/NEPA work in order to develop firm cost estimates and construction plans, and thus be ready-to-go in future rounds. Eligible projects include capital projects funded under ARRA that are eligible under Sections 301 and 302 of PRIIA, or capital project funded under the FY 2009 Omnibus Appropriations Act (State Grant Program).
- *Solicitation 1.2 – Corridor Development Programs.* This solicitation is aimed at corridor programs (track 2 above) that have completed the preliminary planning, environmental, and other pre-construction work required to proceed.³³ Eligible programs include phases and/or sections of comprehensive corridor development plans funded under ARRA that are eligible under Sections 501 and 301 of PRIIA.
- *Solicitation 1.3 –Planning.* This solicitation is aimed at State corridor planning efforts (track 3 above). Eligible projects include planning activities eligible under the FY 2009 Omnibus Appropriations Act (State Grant Program).

³² Schedules are preliminary and subject to revision in application guidance document to be released in June.

³³ Applicants may include, under the umbrella of the corridor development program applications, projects that they may also have applied for in solicitation 1.1.

Round 2. This round provides an opportunity for resubmission of revised applications that were unsuccessful in Round 1, along with new proposals – likely including the same target projects and eligibility criteria. If FY 2010 appropriations for HSR/IPR projects are available, they would be coordinated with the ARRA solicitations (as in Round 1). Subsequent solicitations may be added to other future funding opportunities if ARRA funds remain available.

Figure 10
HSR/IPR Implementation Timeline



Next Steps

This Strategic Plan is just the first of several products intended to further refine and elaborate on the vision for a new national network of high-speed intercity passenger rail corridors. The DOT intends to seek structured input from stakeholders and the public starting after the release of this plan and throughout the process of developing and implementing the strategies to achieve this vision.

In the coming months, DOT will be completing several Congressionally mandated tasks, and will be initiating several others intended to advance this strategy (see Figure 11).

American Recovery and Reinvestment Act of 2009. DOT will be taking the following actions to comply with ARRA and advance the strategy outlined in this document:

- Issue Interim Guidance. DOT will issue guidance detailing eligibility requirements, application prerequisites, evaluation criteria and other procedures by June 17 as required in ARRA.
- Issue Solicitations. DOT will issue solicitations for applications under ARRA and FY 2009 appropriations per the timeline outlined above.

- Provide Progress Reports. As directed in ARRA and in Administration policy, DOT will be providing frequent, regular reports on progress in implementing the Act.

FY 2010 Budget. The President will be issuing his detailed budget request for FY 2010 in the next month. This budget will detail the request for a 5-year, \$5 billion program of high-speed rail grants as outlined in the President's budget blueprint issued in February.

Surface Transportation Reauthorization. Further discussions on the development of this new program may be included in upcoming discussions on reauthorization of surface transportation programs. As the President indicated in his budget proposal, the Administration intends to work with the Congress to reform surface transportation programs, both to put the system on a sustainable financing path and to make investments in a more sustainable future, enhancing transit options and making our economy more productive and our communities more livable.

National Rail Plan. Under PRIIA Section 307, DOT is to develop a National Rail Plan that is consistent with approved State Rail Plans and national rail needs to promote an integrated, cohesive, efficient, and optimized national rail system for the movement of goods and

people. The National Rail Plan will expand upon the vision outlined in this document, including identifying specific corridor goals and measures of success. The plan will likely provide an opportunity to revise the high-speed rail designations, including a new category of approved corridors, i.e., those corridors for which a detailed corridor plan and institutional framework are in place to permit development of a successful corridor that meets the national rail goals.

Figure 11

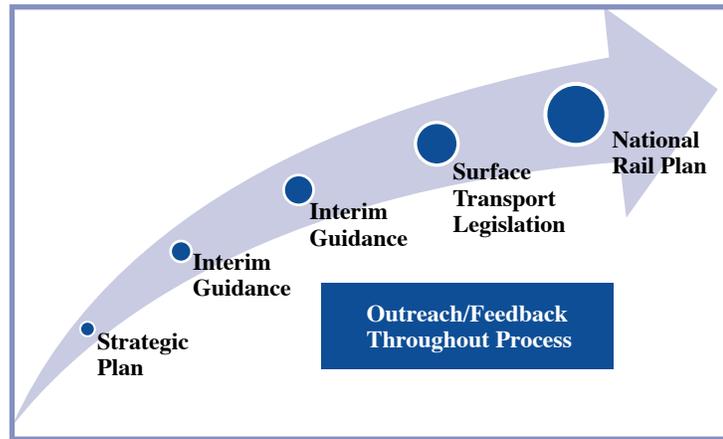


Exhibit 17

Cause No. 33725

GRIMES COUNTY, TEXAS	§	IN THE DISTRICT COURT OF
Plaintiff	§	
	§	
VS.	§	GRIMES COUNTY, TEXAS
	§	
TEXAS CENTRAL PARTNERS, LLC	§	
and	§	
PACHECO KOCH CONSULTING	§	
ENGINEERS, INC.	§	506TH
Defendants	§	_____ JUDICIAL DISTRICT

PLAINTIFF'S ORIGINAL PETITION

TO THE HONORABLE JUDGE OF SAID COURT:

COMES NOW, **GRIMES COUNTY, TEXAS**, Plaintiff in the above-styled and numbered cause, by and through Counsel, and files this Original Petition in support thereof and would show:

1. *Discovery Level and Statement of Amount Sought*

Plaintiff pleads that discovery should be conducted in accordance with a discovery control plan under TEXAS RULE OF CIVIL PROCEDURE 190.3. Plaintiff seeks monetary relief of one hundred thousand dollars (\$100,000) or less and non-monetary relief.

2. *Parties*

Plaintiff is a political subdivision of the State of Texas.

Defendant **TEXAS CENTRAL PARTNERS LLC ("TCP"** herein) is a foreign limited liability company whose principal address is 1212 New York Ave NW, Ste 700, Washington, DC 20005. **TCP's** registered agent or representative, whose name is Corporation Service Company dba CSC, may be served with citation as the service agent of the corporation in this cause at 211 E. 7th Street, Suite 620, Austin, TX 78707-3218.

Defendant **PACHECO KOCH CONSULTING ENGINEERS, INC. ("PK"** herein) is a domestic for-profit corporation whose principal address is 7557 Rambler Road, Suite 1400, Dallas, TX 75231-2388. **PK's** registered agent or representative, Mark Pacheco, may be served with citation as the service agent at that address.

3. *Venue*

Venue is proper in Grimes County in which all or a substantial part of the events or omission giving rise to the claim occurred pursuant to TEX. CIV. PRAC. & REM. CODE

§15.002(a)(1). Further, venue is proper in Grimes County as actions for recovery of real property or an estate or interest in real property, for partition of real property, to remove encumbrances from the title to real property, for recovery of damages to real property, or to quiet title to real property shall be brought in the county in which all or a part of the property is located pursuant to TEX. CIV. PRAC. & REM. CODE §15.011.

4. Facts

On or about April 1, 2016, employees or agents of Defendant **PK** were discovered to have driven metal pins into the roadway surface of one or more county-maintained roadways.¹ Said employees or agents had also painted markings in one or more county-maintained roadways.² Said conduct caused damage to the county roadways in question.

Further, the conduct described above was authorized by Defendant **TCP** as part of their ongoing effort to survey real property for the proposed purpose of acquiring real property by use of claimed eminent domain authority upon which property Defendant **TCP** intends to construct a high-speed railway line running between Dallas and Houston ("the Project" herein).

Though Defendant **TCP** has indicated that its proposed high-speed rail line will run through Grimes County, Defendant **TCP** has not, as of yet, indicated to Plaintiff with finality which county-maintained roadways within Grimes County will be impacted by the Project. Further, Defendant **TCP** has not, as of yet, indicated with finality how the proposed crossings of county-maintained roads within Grimes County will be engineered. Accordingly, Plaintiff is unaware of the level of interference with or destruction of the purpose of Plaintiff's easement in such county-maintained roads.

5. Respondeat Superior

Plaintiff was injured as a result of a tort. The tort was committed while Defendant **PK** was acting within the scope of employment of **TCP**--that is, the act was (a) within the **PK**'s general authority; (2) in furtherance of the **TCP**'s business, and (3) for the accomplishment of the object for which **PK** was hired.

6. Nuisance

Defendants' conduct described above constitutes a public nuisance. Plaintiff has common-law standing to bring suit. The conduct affected the public, was unreasonable in that it interfered with the public health, safety or peace.

¹See Exhibit A attached hereto and incorporated by reference.

²See Exhibit A attached hereto and incorporated by reference.

Defendants' conduct constitutes an interference with the public's use of the road(s) in that it compromised the road surface and required Plaintiff's Road and Bridge Department to inspect, assess, and remedy the damage done to the road(s). Defendants' conduct is unreasonable in that is abnormal, out of place, and improper to install pins and paint markings on a county-maintained road. Defendants knew, to a reasonable certainty (or in the exercise of ordinary care should have known) that such conduct would cause a disruption of the use and maintenance of the road(s). Plaintiff therefore alleges that Defendants have voluntarily and intentionally (or negligently) interfered with the road(s) and Plaintiff's maintenance of the road(s).

7. Damages

As a proximate result of Defendants' conduct described above, Plaintiff has been or will be damaged by the costs to restore the road to its original condition.

Plaintiff seeks damages in an amount within the jurisdictional limits of this Court.

8. Injunction

Defendants' conduct has interfered or will interfere with the public's use of the road(s) in question. Plaintiff serves as the trustee for the public regarding public roads. Because of the continuing nature of the injury caused to the public and because an action for damages will not give Plaintiff complete relief, Plaintiff has no adequate remedy at law. Plaintiff requests that, upon notice and hearing, a Temporary Injunction be granted enjoining Defendants from further tampering with and/or damaging county-maintained roads. Plaintiff further requests that, upon a final disposition of this matter, the Court permanently enjoin Defendants and their agents from such acts.

Further, as any data obtained by Defendants in conjunction with or as a result of the damages to the road(s) described above was obtained through improper or illegal means, Plaintiff requests that Defendants be enjoined from disseminating such data and be required to deliver to Plaintiff any and all data obtained and any and all documents prepared using such data.

With regard to Plaintiff's request for a Temporary Injunction, Plaintiff would show that it has (a) a cause of action, (b) it has a probable right to the relief sought, and (c) a probable, imminent, and irreparable injury during the pendency of this cause.

With regard to Plaintiff's request for a Permanent Injunction, Plaintiff would further show that Defendants acted wrongfully, imminent harm will occur, irreparable injury will occur, and Plaintiff has no adequate remedy at law. However, Plaintiff asserts that in an action by Plaintiff regarding the right of possession of property it holds for public use which right of possession has been unlawfully disturbed and interfered with, this Court may grant

an injunction although some other remedy might be available to Defendant.³

By statute, a writ of injunction may be granted if: (1) the applicant is entitled to the relief demanded and all or part of the relief requires the restraint of some act prejudicial to the applicant; (2) a party performs or is about to perform or is procuring or allowing the performance of an act relating to the subject of pending litigation, in violation of the rights of the applicant, and the act would tend to render the judgment in that litigation ineffectual; (3) the applicant is entitled to a writ of injunction under the principles of equity and the statutes of this state relating to injunctions; (4) a cloud would be placed on the title of real property being sold under an execution against a party having no interest in the real property subject to execution at the time of the sale, irrespective of any remedy at law; or (5) irreparable injury to real or personal property is threatened, irrespective of any remedy at law.⁴

With regard to the setting of a bond, Plaintiff submits that, pursuant to *West v. Ellis County*, 241 S.W.2d 344 (Tex.Civ.App.--Waco 1951, no writ history), no bond should be required of Plaintiff.⁵

9. Exemplary Damages

Because Defendants acted with malice or gross negligence in performing the survey(s) as described above, exemplary damages pursuant to TEXAS CIVIL PRACTICE AND REMEDIES CODE §41.001 *et. seq.* are warranted.

10. Prayer

WHEREFORE, PREMISES CONSIDERED, Plaintiff prays that:

- A. After hearing, the Court issues a Temporary Injunction enjoining Defendants and their agents from performing survey(s) or other studies which damage county-maintained roads during the pendency of this action and, upon a final disposition of the matter, the Court issue a Permanent Injunction enjoining Defendants and their agents from such conduct;
- B. The Court awards damages, including exemplary damages, against Defendants in a sum to be determined by the trier of fact;
- C. The Court grants prejudgment interest as provided by law;

³*Franklin County v. Huff*, 95 S.W. 41, 42 (Tex.Civ.App.--1906).

⁴TEX. CIV. PRAC. & REM. CODE §65.011 (Vernon 2015).

⁵See TEX. CIV. PRAC. & REM. CODE §6.001 (Vernon 2015).

- D. The Court grants postjudgment interest as provided by law;
- E. The Court grant Judgment to Plaintiff for costs of suit; and
- F. The Court grants Plaintiff such other and further relief to which Plaintiff may be justly entitled.

VERIFICATION

STATE OF TEXAS)

COUNTY OF GRIMES)

BEFORE ME, the undersigned Notary Public, on this day personally appeared **BEN LEMAN, GRIMES COUNTY JUDGE**, who being by me duly sworn on his oath deposed and said that he has read the foregoing; and that every factual statement contained therein is within his personal knowledge and true and correct.

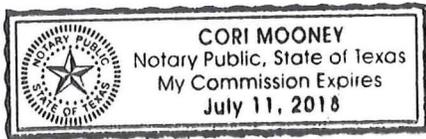


BEN LEMAN

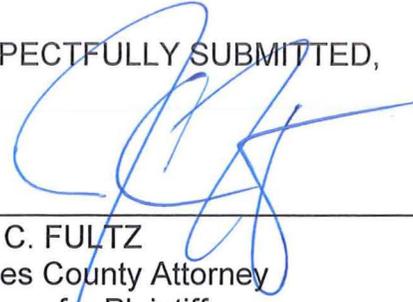
SUBSCRIBED AND SWORN TO BEFORE ME on the 9th day of May, 2016 to certify which witness my hand and official seal.



Notary Public, State of Texas



RESPECTFULLY SUBMITTED,



JON C. FULTZ
Grimes County Attorney
Attorney for Plaintiff
S.B.N.: 24009516
382 FM 149 West
Anderson, TX 77830
Tel: (936) 873-6455
Fax: (936) 873-6457
jon.fultz@co.grimes.tx.us



Blumberg No. 2208
EXHIBIT
A
Page 1 of 3



EXHIBIT
A
Page 2 of 3

Blumberg No. 5208



Blumberg No. 5208
EXHIBIT
A
Page 3 of 3

Exhibit 18

RESOLUTION

RESOLUTION BY THE BRAZOS VALLEY REGIONAL PLANNING ORGANIZATION (BVRPO) EXPRESSING OPPOSITION TO THE DALLAS-HOUSTON HIGH SPEED RAIL PROJECT PROPOSED FOR CONSTRUCTION BY TEXAS CENTRAL PARTNERS (TCP)

WHEREAS, the Texas Central High Speed Railway, LLC and Texas Central Partners are proposing to operate and run a high-speed "bullet" train through Leon, Madison and Grimes counties to travel 205 miles per hour between Houston and Dallas/Fort Worth; and

WHEREAS, the Brazos Valley Council of Governments (BVCOG), a regional planning commission organized under provisions of chapter 570, Acts, 59th Legislature, Regular Session 1965 (codified as Article 1011m V.T.C.S.), is given area wide planning responsibility for Brazos, Burleson, Grimes, Leon, Madison, Robertson and Washington Counties; and

WHEREAS, on March 12, 2014 the BVPRO passed a resolution supporting this project in concept without clarification on many aspects of the project including among other things, an undefined route, undefined stop locations in the Brazos Valley, lack of ridership projections and without the knowledge that this project would require the use of eminent domain as one of the primary methods to acquire right of way through the pristine rural landscape; and

WHEREAS, the BVPRO is concerned about the use of eminent domain powers for this private entity's gain and believes this project will not meet the threshold of public benefit that historically justifies the use of eminent domain; Consequently, there are concerns regarding a public need for this project; and

WHEREAS, Robertson, Leon, Madison and Grimes Counties have all passed resolutions opposing this project and are all within the BVCOG boundary; and

WHEREAS, the cities of Iola, Bedias and Anderson have all passed resolutions opposing this project; and

WHEREAS, Ellis, Navarro, Freestone, Limestone, Walker, Waller and Montgomery Counties have all also passed resolutions opposing this project, and

WHEREAS, State Senators Charles Schwertner, Brian Birdwell and Lois Kolkhorst have each confirmed opposition to this project; and

WHEREAS, State Representatives Leighton Schubert, Kyle Kacal, John Wray, Cecil Bell, Jr., John Raney, Trent Ashby, Will Metcalf, Paul Workman and Byron Cook have each confirmed opposition to this project; and

WHEREAS, the Texas A&M Student Body Senate voted 60-2 opposing this project in defense of eminent domain;

WHEREAS, the Texas and Southwestern Cattle Raisers Association and Bedias Creek Soil & Water Conservation District have also passed resolutions opposing this project;

NOW, THEREFORE, BE IT RESOLVED BY THE BRAZOS VALLEY REGIONAL PLANNING ORGANIZATION:

1. That the BVRPO hereby rescinds the resolution passed on March 12, 2014 and replaces it with this one.
2. That the BVPRO hereby opposes the Dallas-Houston high speed rail project being proposed by Texas Central High Speed Railway, LLC and Texas Central Partner for the above mentioned reasons.
3. That this Resolution shall become effective immediately upon adoption.

APPROVED AND ADOPTED at a Regular Brazos Valley Regional Planning Organization Meeting, this 9th day of March, 2016


BVRPO CHAIR

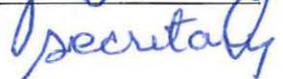
Milton G. Tate Jr
ATTESTED BY: 
Secretary

Exhibit 19

5. Existing Environment

Table 5-4 Federal- and State-Listed Protected Species with Potential to Occur in the Study Area

Common Name	Scientific Name	Federal Status	State Status ¹	Habitat	Potential of Occurrence
Birds					
Whooping Crane	<i>Grus americana</i>	E	E	Stopover habitat consists primarily of prairie marshes and occasionally farm ponds.	Moderate
Piping Plover	<i>Charadrius melodus</i>	T	E	Sandy shorelines that are bare of vegetation.	Moderate
Interior Least Tern	<i>Sterna antillarum athalassos</i>	E	E	Barren, gravelly, or sandy shores near reservoirs/ lakes, or broad, flat, sandy banks or bars in rivers, or salt flats with water nearby. Usually associated with major riverine systems.	Moderate
Wood Stork	<i>Mycteria americana</i>	E	T	Forages in shallow, standing water and favors cypress trees, swamps, and fresh- and saltwater marshes.	Moderate
White-faced Ibis	<i>Plegadis chihi</i>	NL	T	Stopover habitat consists primarily of prairie marshes and agricultural fields. Present year-round on the Gulf Coast Prairie.	Low
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	DL	T	Open spaces, including fields, river basins, coastal prairies, and urban structures (transmission towers, buildings, etc.).	Migratory/Moderate
Bald Eagle	<i>Haliaeetus leucocephalus</i>	DL	T	Heavily forested areas near waterbodies.	High
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	E	Piney Woods in dense pine forests.	High
Sprague's Pipit	<i>Anthus spragueii</i>	C	NL	Open native, upland, grass prairies; migratory and winters in native Blackland Prairie.	Low
Black-capped Vireo	<i>Vireo atricapillus</i>	E	E	Low-growth shrubby and mostly deciduous (post oak or blackjack oak) habitat with spaces between clumps of woody vegetation; found on rocky terrain, eroded hillsides, and gullies.	Moderate

S-16

5. Existing Environment

Table 5-4 Federal- and State-Listed Protected Species with Potential to Occur in the Study Area

Common Name	Scientific Name	Federal Status	State Status ¹	Habitat	Potential of Occurrence
Golden-cheeked Warbler	<i>Dendroica chrysoparia</i>	E	E	Tall, dense, and mature tree stands (juniper and oak).	Low: The USFWS lists this species as occurring in Dallas County. The TPWD has no data associated with known occurrences in Dallas County.
Plants					
Navasota Ladies-tresses	<i>Spiranthes parksii</i>	E	E	Sandy loam soils along Post Oak Savannahs. Navasota River Basin.	High
Large-fruited Sand Verbena	<i>Abronia macrocarpa</i>	E	E	Sandy soils in openings along Post Oak Savannahs.	High
Texas Prairie Dawn	<i>Hymenoxys texana</i>	E	E	Saline soils in Gulf Coastal Prairies.	High
Amphibians					
Houston Toad	<i>Bufo houstonensis</i>	E	E	Sandy loam soils near Post Oak Savannahs and slow-moving bodies of water.	High
Reptiles					
Louisiana Pine Snake	<i>Pituophis ruthveni</i>	C	T	Sandy and well-drained soils in open pine forests with a well-developed herbaceous layer.	Low
Timber Rattlesnake	<i>Crotalus horridus</i>	NL	T	Forests and thick grasses near bodies of water.	Low
Alligator Snapping Turtle	<i>Macrochelys temminckii</i>	NL	T	Deep rivers and lakes with abundant vegetation.	Low
Texas Horned Lizard	<i>Phrynosoma cornutum</i>	NL	T	Open arid areas with loose sandy soil.	Low
Fishes					
Blue Sucker	<i>Cycleptus elongatus</i>	NL	T	Major streams and rivers (e.g., the Brazos and Colorado) in flowing pools with hard clay, sand, and gravel bottoms.	Low
Creek Chubsucker	<i>Erimyzon oblongus</i>	NL	T	Vegetated streams and creeks in Harris and Montgomery counties.	Low
Smalleye Shiner	<i>Notropis buccula</i>	C	NL	Prairie streams and endemic to the Brazos River. The Navasota River is within this species' range.	Low

S-17

5. Existing Environment

Table 5-4 Federal- and State-Listed Protected Species with Potential to Occur in the Study Area

Common Name	Scientific Name	Federal Status	State Status ¹	Habitat	Potential of Occurrence
Sharpnose Shiner	<i>Notropis oxyrhynchus</i>	C	NL	Turbid rivers with clay, sand, and gravel bottoms. Endemic to the Brazos River. The Navasota River is within this species' range.	Low
Smalltooth Sawfish	<i>Pristis pectinata</i>	E	E	Muddy or sandy bottoms of shallow bays, estuaries, along shallow banks, and at the mouths of major river systems.	Low
Mollusks					
Smooth Pimpleback	<i>Quadrula houstonensis</i>	C	T	Small to medium-size, slow to moderately flowing streams and rivers. Brazos and Colorado Rivers.	Low
Texas Fawnsfoot	<i>Truncilla macrodon</i>	C	T	Small to medium-size, slow to moderately flowing streams and rivers. Brazos and Colorado Rivers.	Low
False Spike	<i>Quadrula mitchelli</i>	UR	T	Small to medium-size, slow to moderately flowing streams and rivers. Brazos and Colorado Rivers.	Low
Texas Heelsplitter	<i>Potamilus amphichaenus</i>	UR	T	Small to medium-size, slow to moderately flowing streams and rivers. Trinity, Neches and Sabine Rivers.	Low
Mammals					
Louisiana Black Bear	<i>Ursus americanus luteolus</i>	T	T	Dense and inaccessible forests.	Low

Sources: USFWS 2011, TPWD 2011.

Key:

- C = Critical
- DL = Delisted
- E = Endangered
- NL = Not Listed
- T = Threatened
- UR = Under Review with USFWS