

July 2016

PROJECT CONCEPT

Potential Economic Effects of Converting Portions of US 380 in Collin County to a Limited Access Roadway

THE PERRYMAN GROUP

510 N. Valley Mills Dr., Suite 300

Waco, TX 76710

ph. 254.751.9595, fax 254.751.7855

info@perrymangroup.com

www.perrymangroup.com



Potential Economic Effects of Converting Portions of US 380 in Collin County to a Limited Access Roadway

I. Introduction

The Perryman Group (TPG) is pleased to present this project concept to evaluate the potential economic effects of converting portions of US 380 in Collin County into a limited access roadway. The highway investment involves a significant, though transitory, stimulus to the local economy during the construction process, but a disruption to area businesses as well. Once in place, the limited access roadway will improve congestion problems and lead to efficiency gains as well as increased business activity from enhanced development in the local area. At the same time, however, some businesses may experience adverse consequences.

It is likely that the mix of land use will change over time, as the roadway improvements both facilitate access from other parts of Collin County, but simultaneously make it more difficult to access certain retail outlets currently in the area. In order to weigh the potential economic effects, TPG will project the likely shift in land use patterns as a result of a limited access corridor based on actual patterns observed in other areas where similar projects have occurred. The process will be fully localized to reflect the unique economic characteristics of the affected area, as well as relevant growth projections for the region. It will also incorporate an assessment of how the potential development interacts with strategic plans of affected cities.

TPG is uniquely qualified to conduct this analysis. Dr. M. Ray Perryman, founder and President of the firm, developed the primary models to be used in this analysis in the early 1980s and has consistently maintained, expanded, and updated them since that time. These models will be used to prepare a detailed economic forecast for the area, analyze

the implications for real estate development, and quantify the potential economic impact of the additional development associated with the improved roadway.

The **Texas Econometric Model** provides detailed industry-level forecasts for the Texas economy and is used to provide ongoing forecasts for the various regions and metropolitan areas within Texas. It is formulated in an internally consistent manner and is designed to permit the integration of relevant global, national, state, and local factors into the projection process. It is the result of more than three decades of continuing research in econometrics, economic theory, statistical methods, and key policy issues and behavioral patterns, as well as intensive, ongoing study of all aspects of the global, US, Texas, and Texas metropolitan area economies. It is extensively used by scores of federal and State governmental entities on an ongoing basis, as well as hundreds of major corporations. The firm has also performed specialized forecasts for dozens of corporate clients. The Collin County submodel (with full integration and linkage to the overall region) will be used in the present effort to prepare a detailed forecast of the area which will serve as a baseline for evaluating the overall effects of the proposed corridor.

The Perryman Group's **US Multi-Regional Real Estate Absorption System** is integrated with the Texas Econometric Model and allows such applications as (1) historical characterization of real estate absorption by category (office, industrial, retail, distribution, housing, etc.); (2) projections of future absorption; (3) measurement of the impact of specific economic activity; and (4) analysis of the potential development within the context of the overall need for space, thus assuring that projected growth increments are feasible in the context of overall regional patterns. The system is based on the simple notion that economic activity ultimately determines the need for space. Industrial space is needed when production increases; retail space is needed when purchasing expands; office space demands depend on the number of office workers, and housing is required when population expands. Although real estate is subject to cycles, long-term patterns are highly correlated with business activity. This system had been used in numerous projects related to infrastructure investments and real estate developments, including many in the Dallas-Fort Worth area.

The **US Multi-Regional Impact Assessment System** (USMRIAS) is designed to measure the multiplier (or “ripple”) effects of an economic stimulus through the economy. It has been used in hundreds of applications and public policy studies in all 50 states, and enjoys an excellent reputation for reliability and credibility. The submodel to be used in this instance reflects the unique industrial structure and characteristics of Collin County. It will be used to evaluate the incremental impact of additional development, as well as the near-term effects of the construction.

The USMRIAS is somewhat similar in format to the Input-Output Model of the United States and the Regional Input-Output Modeling System, both of which are maintained by the US Department of Commerce. The model developed by TPG, however, incorporates several important enhancements and refinements. Specifically, the expanded system includes (1) comprehensive 500-sector coverage for any county, multi-county, or urban region; (2) calculation of both total expenditures and value-added by industry and region; (3) direct estimation of expenditures for multiple basic input choices (expenditures, output, income, or employment); (4) extensive parameter localization; (5) price adjustments for real and nominal assessments by sectors and areas; (6) measurement of the induced impacts associated with payrolls and consumer spending; (7) embedded modules to estimate multi-sectoral direct spending effects; (8) estimation of retail spending activity by consumers; and (9) comprehensive linkage and integration capabilities with a wide variety of econometric, real estate, occupational, and fiscal impact models, thus permitting dynamic simulations. In particular, the associated real estate absorption model is used in assessing the reasonableness of large-scale projects in light of regional demand, while the fiscal system allows estimation of state and local governmental revenues. The model has been thoroughly tested for reasonableness and historical reliability and peer reviewed on multiple occasions.

The Perryman Group has analyzed the economic and fiscal effects of various types of economic stimuli on hundreds of occasions over the past 30 years. These assessments include effects of transportation infrastructure, corporate locations and expansions, major

real estate developments, regulatory and other policy changes, benefits payments, legislative initiatives, tax reform, and numerous others.

In the area of transportation infrastructure studies, TPG has completed transportation studies for the US Department of Transportation, the Congress of the United States, the Texas Department of Transportation, the Texas Turnpike Authority, and numerous regional entities related to transportation and infrastructure issues. The firm has also analyzed the economic effects of numerous other major highway corridors and toll roads, as well as other transportation infrastructure including Dallas/Fort Worth International Airport, Fort Worth Alliance Airport, Denver International Airport, the Port of Houston, the Port of Charleston, the Port of Beaumont, and the Dallas Area Rapid Transit Light Rail System. TPG has also evaluated development patterns in scores of large-scale, mixed-use developments.

The firm has been involved in research and modeling of the Dallas-Fort Worth area for more than 30 years. TPG has conducted dozens of studies including specialized forecasts; assessments of the impact of major, multi-use real estate developments; large entertainment venues; infrastructure investments; public policy issues; and corporate locations and expansions. In addition, Dr. Perryman developed the Dallas-Ft. Worth Econometric Model more than 35 years ago and has provided ongoing projections for the region since that time. The firm has also completed numerous studies in Collin County, including detailed economic development profiles of McKinney and Frisco.

In summary, TPG brings decades of knowledge and expertise to this endeavor. A short biographical summary for Dr. Perryman and a Firm Profile (attached to this project concept) highlight key aspects of The Perryman Group's capabilities as well as representative project work and testimony. The firm's website at www.perrymangroup.com includes more detailed information.

II. Scope of Work

- A. TPG will compile research related to the potential effects of the highway construction project. An initial phase will be to conduct a literature review to identify studies of the results experienced in other areas where similar projects have occurred. It is assumed that project sponsors will provide estimated construction cost for the infrastructure as well as any readily available information that would be helpful in this process (some of which has already been provided). TPG has completed sufficient research to determine that the project may be completed as outlined.

- B. TPG will prepare detailed economic forecasts for Collin County assuming (1) the limited access highway project moves forward and (2) assuming US 380 remains a six-lane thoroughfare. These projections will then serve as a baseline for evaluating the incremental expansion that would likely occur if the limited access highway project is completed. TPG will project changes in land use assuming the project is undertaken relative to patterns likely to emerge with a six-lane thoroughfare. This information will be used as a framework for the impact assessment and will rely heavily on the prior academic and professional research regarding this issue, as well as outcomes for similar projects and related empirical studies.

- C. The Perryman Group will also seek input regarding expected challenges which will be faced and review strategic planning documents for cities in the area (Frisco, McKinney, and Prosper). (It is assumed that the process of obtaining this information and related documents, if any, as well as necessary clarifying information, if any, will be coordinated by project sponsors.) It is anticipated that a joint meeting of City and County personnel may be required at the outset in order for TPG to gain a perspective on how the potential development would work within the strategic vision of the areas involved. In particular, TPG will provide input as needed to the economic impact analysis associated with the Comprehensive Plan being prepared by the City of McKinney in order to assure consistency and compatibility.

- D. The Perryman Group will adjust preliminary projected land-use projections based on strategic plans of affected areas and other input as appropriate. This segment of the analysis will likely be both qualitative and quantitative in nature, with the adjustment reflecting TPG's assessment of how development may be affected by the anticipated actions and investments of the communities involved.
- E. The anticipated net stimulus to building activity will be evaluated relative to regional demand using TPG's US Multi-Regional Impact Assessment System to assure its reasonableness, with any appropriate adjustments being implemented.
- F. The projected construction will also be analyzed within TPG's Real Estate Absorption system to translate the development into a representative scenario of direct economic activity.
- G. Typical construction costs for various types of real estate development in the area will be utilized to estimate the direct construction stimulus associated with the additional real estate needs.
- H. Efficiency gains will be quantified based on enhanced productivity stemming from reduced congestion, again relying on a large body of academic and professional research and prior models developed by The Perryman Group.
- I. The Collin County submodel of the US Multi-Regional Impact Assessment System will be utilized to determine the direct, indirect, and induced effects of the limited access project on total business activity in the local area focusing on (1) effects during the construction and preoperational phase (including construction outlays and offsetting business dislocations) and (2) ongoing impacts from enhanced efficiency and development. Using the US Multi-Regional Impact Assessment System, TPG will determine the direct, indirect, and induced effects of the potential projects on overall business activity. Results will be provided for several measures of overall performance including Total Expenditures, Gross Product, Personal Income, Retail Sales, and Employment. The general impact on net State and local fiscal revenue will also be

evaluated. These results will include information on the effects by major industrial category. This model fully reflects the underlying industrial composition and characteristics of the local economy. This analysis will be compared to those expected with a six-lane thoroughfare.

- J. In addition to the meeting described in item C above, The Perryman Group anticipates that an interim meeting or conference call may be required as the analysis moves forward, as well as potential input from the various areas involved.
- K. The Perryman Group will prepare a comprehensive report setting forth the results of the study.

III. Fees and Timing

- A. TPG will complete this analysis for a fee of \$278,600 plus direct, out-of-pocket expenses. An initial retainer of one-half of this amount is requested upon project initiation. The remainder and any expenses will be due upon completion.
- B. TPG anticipates being able to accommodate any reasonable timing requirements.

IV. Other Provisions

- A. Any additional work (such as testimony, travel, appearances, or new research elements) will be performed upon request and billed in accordance with the firm's standard rates or be the subject of a separate agreement.
- B. TPG will carry appropriate insurance coverage throughout the life of this project.
- C. Assuming timely payment of invoices, TPG will hold all sponsoring entities harmless for any debts incurred in the completion of this analysis.

V. Authorization to Proceed

The Perryman Group is hereby authorized to proceed under the terms of this project concept.

Signature: _____ Name: _____

Company: _____ Title: _____

Address: _____ Phone: _____

_____ Fax: _____

Date: _____ E-mail: _____

M. RAY PERRYMAN

President & CEO, The Perryman Group
Institute Distinguished Professor of Economic Theory and Method,
International Institute for Advanced Studies

ACADEMIC BACKGROUND

Ph.D. in Economics, Rice University
B.S. in Mathematics, Baylor University

SELECTED ACADEMIC/PROFESSIONAL POSITIONS AND ACTIVITY (Current and Former)

Business Economist-in-Residence, Cox School of Business, Southern Methodist University
University Professor and Economist-in-Residence, Baylor University
Herman Brown Professor of Economics, Baylor University
Founder and Director, Center for the Advancement of Economic Analysis, Baylor University
President, Southwestern Economics Association
President, Southwestern Society of Economists
Editor, The Southwestern Journal of Economic Abstracts
Editor, International Series in Economic Modeling (book series)
Editor and Author, The Perryman Report & Texas Letter (monthly economic newsletter)
Editor and Author, The Perryman Report (monthly economic newsletter)
Editor and Author, The Perryman Economic Forecast (subscription forecasting service)
Author, "The Economist" (syndicated weekly newspaper column)
Editorial Advisor and Author, The Perryman Texas Letter
Host, The Perryman Report, daily radio broadcast on the Texas State Network
Assistant Editor, The Journal of Economics
Author, The Perryman Permian Basin Oil Report
Contributing Economist, "Marketplace Radio," National Public Radio
Published or presented 400 academic papers
Authored or edited 5 books

SELECTED ADVISORY/CONSULTING ACTIVITY (Current and Former)

Advisor or Member for more than 50 governmental entities at the international, federal, state, and regional levels including: Federal Task Force on the Savings and Loan Crisis, Congress of the United States; Joint Economic Committee, Congress of the United States; United States Senate Academic Advisory Committee on the North American Free Trade Agreement; and Governor's Task Force on Economic Growth
Economic Advisor, United States Senate
Economic Advisor, United States House of Representatives
Economic Advisor, Office of the President
Economic Advisor, US Departments of the Treasury, Labor, Agriculture, the Interior, Commerce, Energy, and Housing and Urban Development
Economic Consultant, Federal Communications Commission
Economic Advisor, Office of the Governor, State of Texas
Economic Advisor, Committees on Finance, State Affairs, and Economic Development,

Texas Senate
Economic Advisor, Office of the Speaker, Texas House of Representatives
Economic Advisor, Committees on Ways and Means, Business and Industry, Economic Development, Transportation, Healthcare, Appropriations, and Science and Technology, Texas House of Representatives
Economic Advisor, Interim Committee on NAFTA and GATT, Texas House of Representatives
Economic Advisor, Texas Higher Education Task Force
Economic Advisor, Joint Select Committee on Public School Finance, Texas Legislature
Economic Advisor, Ministry of Economic Affairs, Republic of China
Chairman of the Board and President, Texas Manufacturing Technology Center
Chairman, Blue Cross & Blue Shield of Texas Local Affiliate Board
Member, Board of Directors, Texas Health Care Services Corporation
Member, Board of Directors, Real Estate Council of Dallas
Chairman, Texas Legislative Conference
President, Board of Directors, Texas Leadership Institute
Member, Board of Visitors, Scott & White Hospital
Director, Women's Financial Services, Southern Methodist University
Advisory Director, Texas Association of Business and Chambers of Commerce
Advisory Director, Chase Bank
Director of projects, studies, and analyses for more than 2,000 clients, including major corporations, public utilities, government agencies, and financial services groups
Published more than 2,000 trade articles and columns

SELECTED HONORS AND AWARDS

Doctoris Honoris Causa degree, International Institute for Advanced Studies
Lifetime Achievement Award, International Institute for Advanced Studies
Citation for Outstanding Initiative in Promoting World Trade, China External Development and Trade Administration
Citation for Meritorious Efforts in Promoting World Capitalism (including the People's Republic of China), The Democracy Foundation
Citation for Promoting International Academic Exchange, The Asia and World Institute
Citation for Outstanding Advisory Contributions, Congress of the United States
Presidential Medal of Merit
Award for Outstanding Research Achievement in Economic Modeling, Systems Research Foundation
Outstanding Texas Leader (John Ben Shepperd Memorial Award)
Named the Outstanding Young Person in the World in the Field of Economics and Business Innovation, one of five Outstanding Young Texans, one of ten Outstanding Young Americans, and one of ten Outstanding Young Persons in the World
2012 Texan of the Year, Texas Legislative Conference

THE PERRYMAN GROUP

Firm Profile and Capabilities

The Perryman Group (TPG) specializes in all aspects of economic analysis, research, and forecasting. Led by Dr. M. Ray Perryman, the organization enjoys a worldwide reputation for its forecasting, modeling efforts, and high-profile public policy studies. For more than 30 years, the firm has provided some of the most innovative approaches in the industry to meet the needs of thousands of clients.

IMPACT ASSESSMENT

Over the past three decades, The Perryman Group has developed a reputation for quality impact assessment techniques. The firm maintains a set of impact evaluation models which can be applied in numerous contexts. These systems have been employed in projects measuring economic effects of various activities around the globe. Specific industrial detail can be provided for more than 500 industries at the national, state, regional, metropolitan statistical area (MSA), and county level.

Previous studies include (among hundreds of others) the economic impact of site locations, utility rate changes, infrastructure development, new transportation facilities, tourism and cultural attractions, regulatory changes, educational programs and investments, legislative changes, economic development initiatives, insurance and judicial reform, immigration policy, water resources, health care facilities and initiatives, mixed-use real estate developments, and communications and Internet policy. In addition to traditional economic aggregates such as employment, income, sales, expenditures, and gross product, TPG also provides projections of consumer spending, secondary development, occupational categories, and fiscal revenues.

REGULATORY ANALYSIS

The Perryman Group has considerable experience and expertise in providing support for regulatory proceedings and initiatives. Previous projects have included analyzing the effects of utility and transportation rate changes on consumers and industrial concerns and evaluating the need for new electric facilities, water projects, transportation projects, and telecommunications investments. The firm also has experience in assessing the economic aspects of environmental regulations, energy policy, insurance, automobile dealerships, and other sectors subject to regulatory oversight. In addition, testimony has frequently been provided before state and federal regulatory bodies.

PUBLIC POLICY

The Perryman Group frequently prepares public policy studies that play a key role in shaping legislation. Representative topics include energy deregulation, communications (telephone, Internet, and cable), judicial reforms, insurance, transportation (water, air, rail, trucking, and highway funding), financial services, health care, economic development, education funding and

policy, taxation, social services, oil and gas development, pipelines, mergers and acquisitions, competition, real estate, franchising, legal aid, and international trade). Analysis by the firm often plays a key role in policy formulation and implementation.

ECONOMIC DEVELOPMENT AND STRATEGIC PLANNING

The Perryman Group has assisted communities, states, regions, and nations in comprehensive economic development efforts. The firm also aids corporations in determining appropriate sites for new facilities and negotiating suitable arrangements. Efforts by The Perryman Group have played a positive role in the creation of hundreds of thousands of jobs. In particular, the firm provided the underlying analysis that led to the creation of major economic development programs in Texas that are widely regarded as the state-of-the-art.

In today's world, economic development means different things in different places. For some communities, it is investing in major infrastructure programs to support future production. In others, it's attracting traditional manufacturing establishments. In still others, it's creating a base of small or large "high-tech" facilities. Some areas or institutions want to become distribution or service centers; others want to capitalize on an existing natural resource base. In many instances, the primary objective is to retain and expand existing firms; the top priority can also be establishing an environment that is conducive to small company startups. Companies and educational organizations also have multiple objectives, ranging from improved labor rates to opportunities for technology transfer.

Utilizing systems specifically geared to economic development, the firm's consultants can identify "target industries" that are likely to expand in the near future and be a complement to the local resource base. Through detailed analysis of workforce characteristics, the existing industrial base, quality-of-life factors, and local attitudes and perceptions, the firm can craft positive plans to maximize opportunities and go the extra mile to ensure their implementation.

FORECASTING AND MODELING

The firm has developed and maintains a full range of international, national, regional, state, metropolitan area, and small area (zip code, census tract, etc.) forecasting and modeling capabilities. In particular, Dr. Perryman has developed large-scale econometric and impact assessment models that have been used in hundreds of projects across all 50 states and many foreign countries. These systems and the accompanying data resources permit forecasting of energy demand and supply, real estate market absorption, retail sales, infrastructure needs, industrial performance (manufacturing and service), transportation demand, financial markets, bond feasibility, construction costs, investment returns, and numerous other applications. In addition, projections regarding labor markets, demographics, global markets and trade, and cost factors such as wage rates and capital costs are generated for clients and subscribers on a frequent basis. Forecasts have been provided in a subscription service for more than three decades. The firm is on retainer to various entities (such as financial institutions and electricity providers) to supply ongoing information.

LITIGATION SUPPORT AND EXPERT TESTIMONY

For litigation support and expert testimony purposes, The Perryman Group investigates and testifies on a variety of issues. Providing research, analysis, and testimony on behalf of major US law firms and their clients in complex matters, the Perryman team has addressed topics including security markets, intellectual property, employment, forensics, officers' and directors' liability, real estate markets, cash flow estimation, environmental and natural resource factors, lender liability, valuation, taxation, damage measurement, business losses, and antitrust issues. Dr. Perryman has successfully testified on numerous occasions, and is well-known for making the most difficult material and concepts readily accessible and easy to understand for any audience.

PUBLICATIONS

The Perryman Group prepares several publications on a regular basis. The forecast series provides an in-depth analysis of the national, state, regional, and local economies in the state of Texas. *The Perryman Report & Texas Letter* is a monthly newsletter that provides analysis of local, statewide, national, and international issues, with particular attention given to how these impact the economy in Texas.

PRESENTATIONS

Nationally recognized as an informative and entertaining speaker, Dr. M. Ray Perryman addresses audiences from all walks of life. Dr. Perryman has established a reputation for communicating often dry subjects in an effective and humorous fashion. Other presentations include specialized seminars on the economic outlook, industrial trends and patterns, economic development, and forecasting techniques.

In addition, the firm often provides briefings to corporate boards of directors and senior management personnel on a variety of topics, including assessment of national and regional economic conditions, trends in specific industries, patterns in international trade, and strategic planning in an uncertain business environment.