



CONNECTING

TEXAS

True Tales of the People Who Built Our Highways and Bridges

GARY SCHARRER



GREENLEAF
BOOK GROUP PRESS

Published by Greenleaf Book Group Press
Austin, Texas
www.gbgroup.com

Copyright ©2020 AGC of Texas

All rights reserved.

Thank you for purchasing an authorized edition of this book and for complying with copyright law. No part of this book may be reproduced, stored in a retrieval system, or transmitted by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the copyright holder.

Distributed by Greenleaf Book Group

For ordering information or special discounts for bulk purchases, please contact
Greenleaf Book Group at PO Box 91869, Austin, TX 78709, 512.891.6100.

Design and composition by Greenleaf Book Group and Rachael Brandenburg
Cover design by Greenleaf Book Group and Rachael Brandenburg

Front cover photo: Scene along Texas 207 and Tule Canyon Overlook between Silverton and Claude.
Copyright © by Kevin Stillman/TxDOT. All rights reserved.

Back cover photos: Mason County scenics on U.S. Highway 87. Copyright © by Randall Maxwell/
TxDOT. All rights reserved.

1915 Brazos River bridge opening. Copyright © Austin Bridge & Road.

Front flap: ©iStockphoto.com/Art Wager

Back flap: Route 66 sign and old grain elevator in Vega. Copyright © by J. Griffis Smith/TxDOT.

All rights reserved.

Author photo: © TxDOT.

Interior photos: Unless otherwise indicated, all photos copyright © by Gary Scharrer. All rights reserved.

Endsheet (front): FM170 El Camino del Rio, copyright © by Kevin Vandivier/TxDOT all right reserved.

Endsheet (back): Houston traffic, copyright © by Will van Overbeek/TxDOT all right reserved.

Publisher's Cataloging-in-Publication data is available.

Print ISBN: 978-1-62634-686-4

eBook ISBN: 978-1-62634-687-1

Part of the Tree Neutral® program, which offsets the number of trees consumed in the production and printing of this book by taking proactive steps, such as planting trees in direct proportion to the number of trees used: www.treeneutral.com



Printed in the United States of America on acid-free paper

19 20 21 22 23 24 25 10 9 8 7 6 5 4 3 2 1

First Edition



Contents

FOREWORD	V		
		<i>by General Tommy Franks</i>	
PREFACE	1		
INTRODUCTION	3		
CHAPTER 1	9		
		<i>The Economy Hinges on Highways</i>	
CHAPTER 2	25		
		<i>The Early Years: Cars, Roads, and Highway Builders</i>	
CHAPTER 3	37		
		<i>Doug Pitcock: More Roads and Bridges Than Any Other Contractor</i>	
CHAPTER 4	61		
		<i>Tom Johnson Helps Turn AGC into a Powerful Industry Voice</i>	
CHAPTER 5	75		
		<i>Jack Garey: An Unplanned Journey with the Midas Touch</i>	
CHAPTER 6	85		
		<i>Johnny Weisman Builds Hunter Industries from Scratch</i>	
CHAPTER 7	97		
		<i>Roughnecks and Risk-Takers: Legends of the Industry</i>	
CHAPTER 8	121		
		<i>Tracy Schieffer: Industry Pioneer, Activist, and Superstar</i>	
CHAPTER 9	131		
		<i>The Road Hands: When We Put These Vests On, It's Almost Like Making Us Targets</i>	
CHAPTER 10	155		
		<i>The Dean Word Company: It's a Hard Way to Serve the Lord</i>	
CHAPTER 11	167		
		<i>Austin Bridge & Road: Second-Century Company Owned by Its Employees</i>	

CHAPTER 12	183	CHAPTER 21	299
	<i>The Allen Keller Company: Still Building Roads in the Texas Hill Country</i>		<i>Strain, Jones, and Milligan: The “Smaller” Giants</i>
CHAPTER 13	195	CHAPTER 22	309
	<i>Zack Burkett: Third-Generation Company Connects Cities to the “Sticks”</i>		<i>Achieving the Common Goal: TxDOT and AGC</i>
CHAPTER 14	209	CHAPTER 23	321
	<i>Better Roads, Less Congestion: What’s So Hard about That?</i>		<i>Clark Construction: Preserving Texas Roads with Chip Sealing</i>
CHAPTER 15	225	CHAPTER 24	329
	<i>J. D. Abrams Takes a Humble Start-up Statewide</i>		<i>The Companies of East Texas: Water and Sandy Soils</i>
CHAPTER 16	239	CHAPTER 25	341
	<i>Twist of Fate Leads to Foremost Paving</i>		<i>Municipal/Utility Contractors and Highway Contractors: A Deal</i>
CHAPTER 17	251	CHAPTER 26	347
	<i>How Can I Help? Rescuing Baby Jessica and Other Stories</i>		<i>A Changing Industry: Design-Build and International Companies</i>
CHAPTER 18	269	CHAPTER 27	355
	<i>Reece Albert: From One Truck and Tractor to 1,500 Equipment Pieces</i>		<i>What Will the Future Look Like and How Will We Pay for It?</i>
CHAPTER 19	279	ABOUT THE AUTHOR	367
	<i>The Zachry Corporation: Public Infrastructure around the Globe</i>		
CHAPTER 20	291		
	<i>Heldenfels Brothers: Building the Long-Delayed Link between South Texas and the North</i>		



Foreword

by General Tommy Franks

Afghanistan is slightly smaller than the state of Texas. Most of the country's 13,000-mile road network remains unpaved.

That complicates military planning for transporting troops and military equipment and supplies for both the troops and the vehicles. Iraq is a little more modern than Afghanistan, but its infrastructure is completely inadequate for a developed, first world economy such as that of the United States.

We responded quickly following the September 11, 2001 terrorist attack against the United States. The US military began operations against the Taliban in Afghanistan less than one month later. On December 22, 2001, my wife, Cathy, and I landed at Bagram Air Base north of Kabul to attend the inauguration of the new president of Afghanistan, Hamid Karzai. Bagram is 39.5 miles from Kabul, and the roads were so bad that we traveled by helicopter. But our helicopter was unsuccessfully fired at on the trip to Kabul, so we had to take the road back to Bagram. The 39.5 miles took us an hour and a half. I remember thinking, *I wish Afghanistan had roads as good as Texas.*

Earlier in my career, I deployed with the 1st Cavalry Division from Fort Hood, Texas, for Operations Desert Shield and Desert Storm. The great Texas highway system proved invaluable for our division to get our soldiers and equipment to the port in Houston. The great people of Texas lined many of the roads and overpasses along the route from Killeen to Houston, waving American flags to show their support for our mission.

Our nation's military leaders have long appreciated that as important as roads and bridges are to a growing civilian economy, they are equally vital to our national defense.

General Dwight Eisenhower learned that lesson early. He experienced the need to develop better roads while a young lieutenant colonel participating in a post-World War I US Army Cross-Country Motor Transport train. It involved a cross-country convoy of about 80 military vehicles starting in the nation's capital and heading west to San Francisco via the Lincoln Highway. The trip had multiple purposes: At a time before radio and TV, the convoy allowed people to see the vehicles that helped win the war. The display also boosted Army recruiting. And the show gave speakers a stage at each stop to advocate for better roads.

US roads in those days were primitive. A scout had to stay ahead of the military convoy to mark the road to keep the vehicles from getting lost. Most of the roads were not paved, so they kicked up dust in dry weather; the pathway turned into muddy ruts during rain. Bridges were barely adequate to handle the pre-1920s cars and were dangerous for military equipment. The convoy vehicles kept breaking down during the 3,000-mile, 62-day journey. Young Eisenhower vividly remembered the adventure for his entire life and wrote about it in his 1967 book, *At Ease: Stories I Tell to Friends*.

Later in his military career, Eisenhower was assigned to map the roads of France to establish their military value. The task provided valuable insight for his later assignment during World War II as Supreme Commander of Allied Forces in Europe. His familiarity with the region's infrastructure helped the general plan supply routes for soldiers on their march to Germany. And Germany's sophisticated, four-lane superhighway (the autobahn) provided a huge contrast with that primitive road used for the US cross-country military convoy only a quarter century earlier.

In his book, the former president wrote: "The old convoy had started me thinking about good, two-lane highways, but Germany had made me see the wisdom of broader ribbons across the land." Those experiences inspired Eisenhower to push Congress to fund our interstate highway system. He is considered the father of that system, today formally known as the Dwight D. Eisenhower National System of Interstate and Defense Highways.

Millions of motorists use Texas roads every day. Those highways also are vital for the many military posts and bases located in Texas. Army, Air Force, Navy, Marines, and Coast Guard installations are scattered in small towns and cities across the big state. These installations help train and prepare our military, while also boosting the economy in communities such as San Antonio, Abilene, Del Rio, Wichita Falls, Killeen, El Paso, and Corpus Christi.

I grew up in Midland—in West Texas—developing a real appreciation for first-class roads to reach other parts of the state. It’s 500 miles from Midland to Houston and more than 300 miles to the Dallas region or to the state capital in Austin.

My wife and I live in Oklahoma now, but we’re even more grateful today for the well-developed Texas highway system. We use it frequently after crossing the Red River for trips that might take us to the Big Bend region, to Austin, or to the Texas Hill Country.

Texans can be envied for what has long been considered one of the premier road systems in the United States. Cathy and I feel blessed to have developed enduring friendships with Tom and Kathy Johnson and with several Texas highway contractors. They care about what they do and remain committed to building and maintaining the best road system possible. And they do it with integrity.

Gary Scharrer has connected some of the dots in this story. Roads are nonpartisan. They provide our prosperity and are invaluable for our national defense. This book provides a crucial understanding of how roads connect us while introducing us to the people who built them.

General Tommy Franks
Roosevelt, Oklahoma
August 2019

Gen. Tommy Franks grew up in Midland, Texas, graduating from Robert E. Lee High School one year ahead of Laura (Welch) Bush. He left the University of Texas at Austin in 1965 to enlist in the US Army. He is one of the few enlisted soldiers to become a four-star general (June 2000).

Franks is best known for serving as Commander-in-Chief, United States Central Command from which he planned and executed Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom in Iraq.

His service in Vietnam earned him six awards for valor and three Purple Heart Medals. The General’s awards include five Distinguished Service Medals, four Legions of

Merit, and four Bronze Stars. President George W. Bush awarded Franks the nation's highest civilian award, the Presidential Medal of Freedom, on December 14, 2004.

His book, *American Soldier*, debuted at No. 1 on *The New York Times* Best Sellers list. He and his wife, Cathryn, live on their ranch in Roosevelt, Oklahoma.





Preface

Most days, millions of Texans (just like millions of motorists around the country) climb into their car or pickup to go to work, to school, to run errands—or to any one of hundreds of other destinations. In 2019, motorists drove, on average, 540 million miles each day on Texas roads. Yet it is likely that few, if any, of those motorists stopped to think about the roads and bridges that allowed them to move from Point A to Point B.

We don't think about it; we simply do. It's like turning on a light switch or water faucet. It's an instinct. It's part of our routine. We get on the road, and we go. But this highway transportation system that we take for granted drives our economy, connects the people and places of our state, and shapes our society. Roads unite people. Roads are nonpartisan. Roads unite us with destinations.

As Tom Johnson approached his 50th year with the Associated General Contractors of Texas (AGC), he knew he wanted to preserve some of the highlights and memories of the state's road builders in a history of the organization. We began discussing the project in 2014. We had already lost many meaningful moments from the lives of the colorful characters and pioneer road builders who had passed on before their accomplishments could be recorded and shared with the public. But we also knew there were many more stories to be captured. The AGC of Texas is the trade association whose membership comprises 85 percent of all the contractors who build and maintain the state's roads and bridges. At the time, Tom envisioned this book as a legacy for the contractors and their employees, friends, and families. In short, it would be a book for industry insiders.

But the project landed on the back burner that year when industry attention focused on extremely critical highway funding measures before Texas voters in the 2014 and 2015 general

elections. Understanding that bad roads, congested highways, and aging bridges meant that they would be subject to less safety and more wasted time stuck in traffic, Texas voters supported both ballot propositions with whopping numbers (79.9 percent in 2014 and 83.2 percent one year later). The public clearly wanted a transportation system that worked for them.

But we wondered, Does the public understand how the system developed and its importance to them? Would they be interested in the stories of the companies and people who built and who continue to expand the system today? After returning to the project, we visited two book publishing companies, seeking their direction and asking, “What’s the best way for us to self-publish our book?” But Tom’s stories ended up mesmerizing both publishing houses, and each encouraged us to reach for a bigger audience and take our story public.

We decided to do just that, knowing our goal would be to honor and preserve the legacy of the road builders by telling their stories, while at the same time, helping the public better understand and appreciate a system they use and rely upon every day.

They don’t make many Tom Johnsons. He served as “historian” for this book, and a book of this sort would not be complete without sharing a slice of the Tom Johnson story. This book is the result of our efforts.

Gary Scharrer
Austin, Texas
July 2019



Introduction

We've come a long way from the Model T days when the early contractors used mules and Fresnos to build roads in Texas. In this book, you'll get stories of the people who gave Texas a road system that is the envy of the country.

For example, Dewitt Greer was the visionary architect of the state's modern road system that helped dig ranchers and farmers out of the mud with a farm-to-market system of nearly 50,000 miles built during the 1940s, 1950s, and 1960s to connect rural communities with the cities.

In 1957, Corpus Christi, Texas, contractor Fred Heldenfels Jr. testified before a US Senate Public Works committee as president-elect of the Associated General Contractors of America. Leading that Senate committee were Senators Al Gore Sr. and Prescott Bush. (They could not have imagined that their son and grandson would take a campaign for the US presidency to the United States Supreme Court.) Heldenfels assured senators American contractors were up to the task that President Eisenhower and his interstate highway system had put before them: "Could highway contractors build the massive system to mobilize the country?"

At about the same time, Drayton McLane Jr. saw the future. He headed back to Texas—with a master's degree from the Michigan State University School of Business and considerable inspiration—to join his family's small wholesale food distribution business. He knew the interstate highway system was coming, and he convinced his father to relocate their business from a tiny rural Texas town to a city on I-35 between Dallas and Austin so they could move products quicker and easier. He would end up building a megabillion-dollar company and owning the Houston Astros.

I grew up on a modest dairy farm in Michigan. During the 1950s, a couple of Zehnder Family-owned restaurants drew waiting lines for Sunday chicken dinners in the small farming town of Frankenmuth. And then came unsettling talk of the new interstate. Community

leaders told me years later they had feared I-75 would cripple Frankenmuth's fledgling tourism business because the interstate would bypass the community by seven miles. The two Zehnder restaurants in a town of fewer than 2,000 people were located on M-83, and that road, Frankenmuth's Main Street, likely would surrender its traffic to I-75.

But Frankenmuth leaders didn't see what Drayton McLane Jr. saw. Interstate highways would transform America. Mobility would increase exponentially. People would travel. And so, millions of people headed north on I-75, and lots of that traffic took a detour to Frankenmuth. The city would ultimately evolve from a tranquil farming town into the state's top tourist destination with more than three million annual visitors. The town's Bavarian architecture and German heritage made visitors feel as if they had stepped into a different place. Folks from the Midwest can now hop on various interstate highways to reach I-75 and then take a quick side trip to "Bavaria" or to the world's largest Christmas store, also in Frankenmuth. Then-Vice President George H. W. Bush and Barbara Bush visited Frankenmuth, and First Lady Laura Bush made a separate trip years later. Instead of causing the demise of Frankenmuth, I-75 put it on the map.

Highways have a profound impact on communities because of the mobility, connectivity, and convenience they create. All of that adds value to commerce and the economy. That's why business and political leaders are clamoring for the expansion of interstate highways in various Texas communities. West Texas leaders want to expand Interstate 27 approximately 500 miles from Lubbock, where it currently ends, to connect with Midland, San Angelo, and Laredo. An expanded I-27 would intersect with Interstate Highways 10, 20, and 40 at a projected cost of \$5.2 billion. But the cost produces a payback. The extended interstate would serve top oil-and-gas-producing counties, as well as the growing wind industry and old-time agriculture. Counties on the projected path of the extended interstate remain large producers of cotton, cattle, and sheep.

Texas and Gulf Coast states want to extend I-14—a "Forts to Ports" concept to connect key military installations to strategic seaports. The expansion would connect Goodfellow Air Force Base with Fort Hood, Fort Bliss, and seaports on the Gulf Coast. In East Texas, an effort is underway to convert US 59 into an expansion of Interstate 69 to create a "Mexico to Michigan" highway. A TxDOT study says the expanded I-69 should relieve traffic congestion, provide safer and faster travel through the state, improve hurricane evacuation routes, and promote economic development. The 150-mile conversion of US 59 through the Lufkin region alone carries a projected cost of \$3.3 billion.

In Texas, the legendary Doug Pitcock started a highway construction company in 1955 with two heirs of the S. K. Kress & Co. five-and-dime store company. They nearly went belly-up a couple of times. Doug eventually bought out his partners before becoming the state's largest highway construction company. He worked seven days a week, becoming an industry leader in both Texas and the United States. At age 91, Doug remains chairman and CEO of his company. He shares his story. You will learn about many risks confronting highway contractors. For example, his company loses \$50,000 on a rainy day when work comes to a standstill. Pitcock dreads stretches of four rainy days in a row. Bad bids can also break companies, and bad calculations can cause companies to lose big money.

President Lyndon Johnson had close friends in the Texas highway construction business. He affectionately called them “roughnecks.” A young motor grader operator shares his story of helping build a runway on Johnson's ranch. They didn't use surveys; it was simply line of sight and feel from inside the motor grader.

And then there's the interesting story of Jack Garey. When it came to litigating workers' comp cases in the 1970s and 1980s, he was the best of the best. The Austin-based lawyer then began dabbling in residential subdivision development with some old road grading equipment he acquired. He gave up his successful law practice to become a highway contractor. Workers' comp costs were eating him up; he helped lead an effort to reform workers' comp—earning enmity among his former trial lawyer friends. Jack later gave away tens of millions of dollars to his favorite university and to the city of Georgetown where a 525-acre ranch-park he donated to the community bears his name.

The Texas highway contracting industry had been a world of men—until Tracy Schieffer came along. She became an industry leader, and this book helps capture her spirited personality.

Texas highway contractors contribute generously to their communities; some of that generosity is reflected in the book. They also share skills and talent. Readers will learn about the behind-the-scenes rescue of “Baby Jessica,” who fell 20 feet in an abandoned well in Midland, Texas. The story grabbed news headlines around the world in 1987. A Texas contractor was there to provide expertise and equipment for the rescue.

Motorists would have no reason to know, understand, or appreciate the special relationship that exists between the Texas Department of Transportation and the Associated General Contractors of Texas. This book will cover some of the highlights—and why they matter.

Today's modern equipment is costly, and highway projects in urban areas can be

incredibly complex—and expensive. For example, the new Corpus Christi Harbor Bridge is a \$1 billion project. The Downtown Dallas “Horseshoe” project modernizing the intersections of I-35E and I-30 cost \$800 million. Good highways and good bridges need funding to build and maintain. Most people do not realize every \$100 million in new pavement requires an additional \$300 million to maintain over its 40-year life cycle.

This book makes the important but abstract issue of funding tangible, by connecting some of the dots. Decades ago, road builders had no voice to speak for them. The Associated Contractors of America formed to represent them. The Texas association is a members-run organization, which makes it a tad different than most trade associations. Of course, members depend on staff—and the AGC of Texas staff is dedicated to the mission. That’s why many stay for decades—such as Donna Wolf, Darlene Edge, Eli Garza, Lee Taylor, Mellora Connelly, and Paul Causey—and others who have retired after more than 20 years (Debbie Koehler, Hoy Gatlin, Ben Dukes, Lawrence Olsen), or passed away (Tom Fisher, William Driskill, and Lois Horch). Jennifer Woodard has more than three decades with AGC of Texas. Jennifer had the difficult assignment to follow in the footsteps of Thomas Johnson when he retired in late 2017 after a half century as the face of AGC.

The highway industry struggles to find enough workers. It offers the potential of a middle- to upper-middle-class career. Starting laborers can make \$40,000 a year; motor grader operators can make at least \$80,000 a year; crew members can work up the line to become supervisors earning six figures. Most of the “road hands” love their job because they can see tangible evidence of their work. They see the new roads and bridges they build for the traveling public. They feel a sense of accomplishment at the end of the day—and at the end of their career.

Proceeds from sales of this book will flow into an AGC of Texas Scholarship Fund to help students pursue college or trade schools and careers in highway construction.

Many motorists probably don’t pay attention to highway construction workers. They should. One of the chapters in this book shares their stories. Many workers spend their daily lives in the dangerous intersection where work meets moving traffic. Highway construction crews share their appeal for caution to the public.

This book lacks the typical formal “dedication.” It is dedicated to every driver who uses Texas roads and bridges; to the contractors who risk capital and also shoulder an assortment of pressures and stresses; and to the workers who build the bridges and roads for you. They help connect our lives, and this book hopes to connect you to them.



El Paso concrete finisher Leonardo Rodriguez (Jordan Foster Construction) dresses for the blazing sun.



Construction of the
7th Street Bridge Arch
Structure. Photograph
© TxDOT.

CHAPTER 1



The Economy Hinges on Highways

Drayton McLane Jr. saw the future soon after joining his family's small wholesale grocery business in Cameron, Texas, in 1959. Cameron was a community of 5,000 people 50 miles southeast of Waco. Although one of the first 23 original municipalities in Texas, the tiny four-square-mile seat of Milam County remains a rural community with little population change. Cotton was a major industry in the 19th century, and milk and cheese production helped the local economy through the 1920s and '30s. His grandfather started the Robert McLane Company in 1894 as a retail grocery business that gradually evolved into a wholesale operation delivering food to convenience stores, supermarkets, and fast-food restaurants. When Drayton became the 68th employee following college graduation, the company was doing \$3 million a year in wholesale food sales within a 30-mile radius of Cameron.

Drayton McLane Jr. was ambitious, with dreams of expanding the company's reach to a 100-mile radius and cranking up sales to \$1 million per month. On top of that, he wanted to hit the \$12-million-a-year mark before he retired. Instead—only a few decades after setting that goal—the savvy entrepreneur had transformed the modest McLane Company into a \$20-billion enterprise.

The company's impressive growth surge and Drayton McLane Jr.'s success were based on a factor that was difficult to appreciate at the time: the creation of the country's interstate highway system, a program launched by President Dwight Eisenhower in 1956. When Drayton McLane Jr. returned to Texas with his master's degree in business administration and marketing from Michigan State University, the first interstate highways were just being completed, and he recognized clear opportunities.





Drayton McLane Jr.

Just-in-Time Inventory

“We have a marvelous interstate highway system—so businesses can have just-in-time inventory. You can tell suppliers, ‘I want it here at eight o’clock in the morning.’ I’ve had businesses around the world, and just-in-time inventory works in America. It doesn’t work anywhere else like this,” McLane says. “It works here because of our great highway system. It’s helped us reduce cost; it makes us more productive. Our highway system is a real asset.”

The typical American family spends 9 percent of its income on food—one-half to one-third the amount of many other countries, where some families spend more than 50 percent of their income on food. In 1960, *before* interstate highways connected American communities, US families spent approximately twice as much on food as they do today. That’s a significant difference, with real impact on the quality of life in the US and on the personal budgets of American families.

The Price of a Can of Soup

Transportation and education are the two prerequisites for a prosperous community, observes William Solomon, retired CEO and chairman of the 6,000-employee-owned Austin Industries, which is an extension of the venerable Austin Bridge & Road Company that Solomon’s grandfather founded in 1918.

Interstate highways and modern bridges would soon allow efficient transport of perishable food over great distances, something that had not been possible before.

He convinced his father to relocate the family business from Cameron to Temple, located on the new interstate, I-35—a decision that immediately expanded the potential of the company in a dramatic way. As of 2019, McLane’s firm has more than 40 distribution centers across the United States helping move food quickly to stores and restaurants.

“Imagine a human being without the benefit of arteries. That’s the role of our roads and highways. They’re the pathway through which the lifeblood of a community passes every day,” Solomon says.

Roads and highways connect people with their jobs, with schools, and with friends and families. They link people with churches, mosques, and synagogues, with retail shopping, and with their leisure activities. Roads and highways allow police, fire, and EMS to respond to distress calls.

Roads and highways affect our everyday lives. David Ellis, a senior research scientist at the Texas A&M University Transportation Institute, keenly faced this reality while testifying on transportation-related issues before a Texas legislative committee. Rep. Drew Darby, a San Angelo Republican, jolted Ellis at the end of his fact-filled presentation with this statement: “David, that’s all well and good, but I’ve got a question for you. So how does all that impact the price of a can of soup?”

That question stopped Ellis in his tracks, and he knew the question required a response. With more than 30 years of experience in transportation economics and finance, tax policy, demographics, and the economic impact of transportation investment, Ellis and his team decided to conduct a study to determine the answer—down to calculating the cost that traffic congestion played in the price of the soup. Researchers used a Campbell’s Soup factory in the East Texas town of Paris for their study. They tracked the ingredients from their farm source to the factory and beyond, and assumed, for their analysis, the soup would stay in Texas. The study concluded that traffic congestion added three cents to the price of each can of soup. The study, “Effect of Congestion on Common Consumer Commodities” is regularly updated.



David Ellis.

“THIS ISN'T FUNNY MONEY. IT'S NOT MAGIC. PEOPLE HAVE TO PAY IT, ONE WAY OR ANOTHER.”

Ellis notes, “The bottom line is: There’s approximately ten cents of transportation charges in a \$1.89 can of soup. Transportation costs are unavoidable, because you’ve got to move ingredients from point A to point B and on to stores and consumers. But, the three cents per can for *congestion*—we could fix that.”

“That’s one can of soup. Now think about millions of cans of soup, and millions of cans of Lysol, and heads of lettuce, and all that stuff. Somebody pays that three cents. Campbell’s Soup can pass that cost on to consumers. Or they can take it from their own bottom line. Either way, it affects income. If they take it to the bottom line, it affects their profit, which, in turn, affects the price of their shares and their financial picture—then all of the retirement funds that own Campbell’s Soup pay for it. If they don’t take it to the bottom line, they pass it on to the consumer, and then everybody else pays the cost. This isn’t funny money. It’s not magic. People have to pay it, one way or another.”

Fresh Produce in about Fourteen Hours

Similar economics affect American products entering the global trade arena. “With soybeans, we’re competing with people from all over the world who are growing the identical product. So we have to get soybeans out of Iowa and the Midwest to our ports. A lot of that goes down rivers, and we have transportation issues with our locks and dams. But you have to get them out of the farm and field,” Ellis says. “We can compete with technology in terms of increasing production out of an acre. But we aren’t going to compete [with other countries] based on the cost of labor, because we have a higher standard of living.

“The major way we compete is in the efficiency of our supply chain, and most of that is tied to transportation. Whatever transportation costs are tied up in congestion costs will drive up the price of those soybeans. And that makes us less competitive, which hurts our farmers and, ultimately, all of us,” Ellis says.

Drayton McLane Jr.’s appreciation for our highway transportation system increased during a 1980s trip to Russia with President Reagan’s agriculture secretary, John "Jack"

Block. A Russian counterpart lamented his country's loss of 30 percent of its agricultural products that routinely rotted before reaching the Russian people. "They didn't have a good highway system and didn't have modern frozen food and big warehouses. Mainly, they didn't have transportation, or an efficient road system, and that's why so much of their product never reached the consumer." This inefficiency also makes food more expensive. In contrast, McLane's company and other large food-related businesses, such as Walmart and H-E-B, send trucks to the fields of California to load fresh produce as it is harvested.

“WHAT CONSUMERS LOVE TODAY IS FRESHNESS. IF WE DIDN'T HAVE THE TRANSPORTATION SYSTEM, WE WOULDN'T HAVE FRESH.”

“In about 14 hours, the product is here in Central Texas. It's been out of the field less than 24 hours, and it's in the distribution centers—and the next day it's in the grocery stores. It's not two days old. That's what makes it taste so good and cost so little,” McLane says. Stephenville in North Central Texas is a huge dairy area where milk produced in the afternoon gets pumped into tanker trucks, and by morning, it's packaged and heading to stores in Dallas, Houston, and other communities, thanks to modern highways.

“What consumers love today is freshness. You want it fresh rather than processed. If it wasn't for our highway system, we wouldn't be able to do that.”

Living Where You Want

Modern highways also give people mobility and choices on where to live. McLane's childhood hometown of Cameron is 35 miles east of Temple. “I bet 70 percent of the people in Cameron work in Temple at Scott & White [hospital], which has over 6,000 employees. The McLane Company and Walmart each employ about 2,000, and H-E-B has a big distribution center here,” says McLane. “People think nothing of living 20 miles from Temple, and they drive in to work. They like living out in the country, but

they couldn't afford to do that without a good highway system. We have several highly educated technologists in our businesses who live (42 miles away) in Georgetown and drive here because they want a more metropolitan area. It's amazing—people now live everywhere. Years ago, you had to live right where your job was. Great highways have given people the freedom to live and work wherever they want.”

On a good day, people can leave in the morning from Beaumont in East Texas and reach El Paso by nightfall—827 miles away. That journey was impossible only a couple of generations ago. “We are so spoiled. We have these marvelous bridges that get us to where we want to go,” McLane notes. “Pioneers struggled to get across some of these places. Can you imagine when they came to the Brazos River? They must have thought, *How in the world are we going to get over these rivers?* Bridges play a vital part of our lifestyle. You can go over them at 70 miles per hour, and often you don't even know you are going over a bridge. You don't even notice because it's so smooth.”

Dramatic improvements in technology and equipment make it easy to forget that pioneer road builders used mules and Fresno scrapers (a machine pulled by horses in constructing canals and ditches) to create the first modern dirt roads in Texas. “Horsepower” back then measured the number of horses or mules it took to pull the rig. The Fresno scraper, invented in 1883, was such a significant advancement in dirt moving (which was previously done by manual labor) that it was designated “an International Historic Engineering Landmark” by the American Society of Mechanical Engineers in 1991.

Today's horsepower is defined quite differently than it used to be. Modern road builders use 770 HP bulldozers, 44,000-pound motor graders with 12-foot blades, and 850 HP wheel loaders. The largest scraper packs a horsepower of 1,000 and can hold 60 cubic yards of dirt—roughly 540 to 840 wheelbarrows full of dirt. Off-highway trucks carry 825 HP and can hold up to 70.5 tons. Thanks in part to the research and development by heavy equipment manufacturers like made-in-America Caterpillar and others, these machines are not only continually improving their efficiency but also reducing their impact on air quality and the environment.

McLane's ability to see the future and move the family business so it could connect to the interstate highway system helped put the company on the world map. It also helped turn McLane into a major philanthropist. His name adorns the Michigan State baseball stadium, which nestles up to the Red Cedar River on the East Lansing campus, and Baylor University's sparkling new football stadium alongside the Brazos River in Waco, where McLane got his undergraduate education.

“WHEN YOU LIVE YOUR LIFE, IT’S NOT GOING TO BE HOW MUCH MONEY YOU MADE OR HOW MANY DEGREES YOU GOT OR HOW MANY AWARDS YOU RECEIVED.”

McLane and his family are active members in their church and helped fund the McLane Children’s Hospital at Scott & White. McLane’s philosophy says it all: “When you live your life, it’s not going to be how much money you made or how many degrees you got or how many awards you received; it’s how you lived your life.”



Dewitt Greer.
Photo © AGC of Texas Archive.



Dewitt Greer: 50,000 Miles of Paved Road

Dewitt Greer is universally recognized and revered in the industry as the father of the Texas highway system. The Texas A&M engineering graduate spent 54 years with the Texas Highway Department (now known as the Texas Department of Transportation, or TxDOT).

Greer was chief engineer, or head of the department, for 27 years. While leading the agency, he added 50,000 miles of paved highways to the Texas road map, including approximately 40,000 miles of farm-to-market roads.

“The 1950s and 1960s were the most dramatic years in the history of highway construction in Texas,” Greer observed. “The Age of the Freeway dawned in the 1950s. By the mid-1960s, superhighways were part of the everyday life of Texans in every corner of the state.”

Texas Parade magazine captured the significance of Greer in a 1950s profile: “Not since Cheops erected his great Pyramid in Egypt, perhaps, has so singular a monument as the Texas highway system been engineered to one man’s dreams.”

After Greer reached mandatory retirement at age 65, Gov. Preston Smith appointed him to the Texas Transportation Commission, where he served from 1969–1981. He died in 1986.

Hitting the Pavement without a Thought

Most people climb into their cars and pickup trucks and head off to any number of destinations without giving a moment’s thought to the pavement that allows them to move from point A to point B—or what it costs to keep it there.

“Why should they? They’re trying to get to work or get the kids to the doctor. All they know is that traffic is holding them up and that it’s a whole lot worse around five and six in the evening than it is ten o’clock at night. They don’t know, but they *do* care,” says

Texas Senate Transportation Committee Chairman Robert Nichols, now one of the state's leading transportation experts. "The average citizen has probably never thought about the maintenance cost of highways and bridges."

Every \$100 million in new Texas road pavement will require approximately \$300 million in additional funding to maintain the pavement over its 40-year life cycle, Nichols often reminds audiences when talking transportation issues with Texans.

Nichols gained his transportation expertise through decades of experience. He started a plastics manufacturing business with four plants in the East Texas town of Jacksonville and relied on good roads to move his plastics products to market. He learned even more about the importance of modern roads as a member of the Jacksonville City Council and later as mayor of the city.

“THE UNITED STATES DID NOT BUILD AN INTERSTATE HIGHWAY SYSTEM BECAUSE IT WAS A WEALTHY NATION. BUT IT WAS THE INTERSTATE SYSTEM THAT MADE THIS NATION WEALTHY.”

His transportation perspective expanded statewide in 1997, when Texas Governor George W. Bush appointed him to what then was a three-person Texas Transportation Commission. He asked the governor, "Is this a job that y'all would tell us what we need to do and we go do it, or do you want me to go and figure out what the problems are and try to come up with a solution for them?" And the governor responded, "That's what I want you to do."

"And jokingly, I will tell you that he said, 'If something is going to happen real bad that's going to end up in the newspapers, we would appreciate a phone call ahead of time.'"

Nichols is an engineer—meticulous and methodical. He understood local transportation issues but needed to get a better grasp of the statewide problems. To do that, he toured each of Texas's 25 highway districts. "I was very concerned that they might be building projects that weren't really needed because of the political deal. I was concerned there might be corruption in the construction industry, because you are dealing

with billions of dollars. *Do we have a fair, competitive system, and were we building projects that the locals felt were needed?* And so, as I traveled to each district, I would send them a three-day agenda, and we would put up a map of every county and city in their district and list all of the significant projects.”

The tour impressed Nichols. He learned that all Texas communities faced transportation problems deserving relief. But funding remains a chronic challenge, resulting in a perpetual balancing act between what a community “needs” and what it “wants.” Transportation leaders must try to fairly prioritize the critical needs and the serious needs, all while considering that rural transportation problems are markedly different than those in large urban areas. Rural communities primarily want jobs and economic development, which require good transportation.

“**MORE THAN 3,500 PEOPLE ARE KILLED ON TEXAS HIGHWAYS EACH YEAR.**”

“But a second theme in rural areas is that people are dying, because you have all these two-lane, rural roads without shoulders. Approximately 60 percent of all highway fatalities occur there,” Nichols says. “Jobs in the rural area is a part of the overall theme, but then you have the safety issue. People are dying.” More than 3,500 people are killed on Texas highways each year. *The Houston Chronicle* reported in 2018 that the nine-county Houston metro area ranks as the deadliest in the country, averaging 11 fatal wrecks and 12 fatalities each week—or 640 road fatalities per year.

Casualties of Congestion

Congestion chokes big cities, and the casualties are businesses and people, who both lose valuable time. Nichols dramatizes the issue by borrowing from Johnny Johnson, a former Texas transportation commissioner, who compared technology to wasted time in traffic congestion. Johnson’s noted that microchip technology can perform millions of calculations per second and can be used to produce products within specifications of millionths of an inch, and it can make millions of them—uniform and consistent.

“But the one thing we cannot do is replicate time,” says Nichols. “Time lost is lost forever. It’s gone. If you look at the millions of work hours lost every year because of congestion, it’s a travesty. It costs our businesses money, and that hurts our economy. But it also reduces quality of time: Everyone’s time—whether personal or business.” Traffic congestion also can limit choices. “I might want to go north of downtown to a high-quality seafood restaurant, but I’m not going to go because it’s not worth an hour’s trip. A lot of people want to go to stores, but they don’t go because of traffic congestion.”

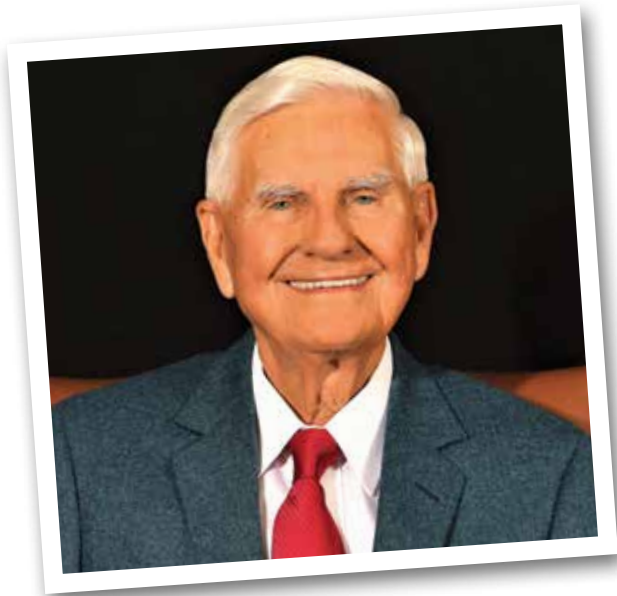
The senator’s grandfather watched the construction of the early Texas roads when he used a Ford Model T to spread the good news of the Gospel as a Methodist minister on the East Texas circuit. It took him three days to travel the 260 miles between Beaumont and Texarkana, back when there were no bridges. Heavy rains lengthened the journey, as travelers waited for low-lying areas to dry out or took longer detours. The minister watched the bridges go up to help connect gaps in the terrain.

Nichols says, “He talked about it often. He had a fascination with automobiles. As a minister, he got a new automobile every two to three years, and his life really revolved around automobiles, his family, and his ministry.” Before he turned ten, Nichols remembers his own father’s fascination with time and travel and how he had begun discussing a new interstate highway concept that would eventually create a continuous traffic flow without stoplights or stop signs.

“How would you do that? This was the early 1950s. So I sat there, trying to figure out how cars could go across each other and turn in any direction. My dad showed me the cloverleaf design. That was my first real contact with highways,” Nichols says. Something his father told him also resonated: “The United States did not build an interstate highway system because it was a wealthy nation. But it was the interstate system that made this nation wealthy.”

Freedom, Flexibility, and Getting the Wagon out of the Mud

Railroads moved soldiers and equipment during WWII, and people embarking on long trips rode trains. “Nobody gave highways a thought. All the fuel went to the war effort, and we had gasoline rations during the war,” says Doug Pitcock, a prominent leader of the modern Texas highway construction industry (Williams Brothers Construction). “From a transportation standpoint, this was a railroad country. The big



Doug Pitcock.

turning point for roads and highways came with President Eisenhower, who felt we needed a national system of highways. He had been totally intrigued and fascinated by the German autobahn, having watched the Germans move war equipment and materials. From a transportation standpoint, cars didn't really come onto the scene big-time until the war ended."

Pitcock gives partial credit to early railroad companies for generating interest in highways—even if it was to serve their own interests. People who were headed to train stations needed an easier way to get from their homes to the stations. The railroads supported the Good Roads Movement, which was

launched in the late 1800s by bicycle owners who wanted

better surfaces for riding bicycles. The movement expanded after Henry Ford's Model T made hard-surface roads essential for travel.

"The first goal was to get the wagon out of the mud," Pitcock says. "But cities had a little different situation. They had streetcars. Initially, most spending was in nonurban areas for highways. But just as the population density has changed from rural to urban, the highway needs have also changed. Now, the big need is in the urban areas."

Because rural members dominated the Texas Legislature, it was easy for the state to focus on building farm-to-market roads over a period of decades starting in the early 1950s. But as the state's population shifted from a rural concentration to an urban one, so did traffic. And in recent decades, many large Texas cities have become choked with snarled traffic. Greg Abbott dramatized the urban congestion problem during his 2014 Texas gubernatorial campaign when he took his wheelchair into stop-and-go traffic for a TV ad, suggesting he could roll his chair faster than those cars stuck in the snarled traffic.

“YOU OUGHT TO HAVE MASS TRANSIT—AND IT OUGHT TO BE FREE JUST LIKE POLICE PROTECTION AND FIRE PROTECTION.”

Mass transit was supposed to help relieve traffic congestion, but the impact in Texas cities is minimal, “so it is not a solution for solving the congestion problem on the highways. To me it’s a social issue, which should be addressed. My personal opinion is you ought to have mass transit—and it ought to be free just like police protection and fire protection. It’s a social need. It’s not simply a transportation need,” says Pitcock. “The beauty of the automobile and highway transportation is that you can get portal to portal, whereas mass transit will only take you on one leg of your trip. That’s why, in my opinion, you will never do away with cars.”

Cars and road trips give people and families the flexibility and freedom to move on their own schedule. Controlling personal destiny reaffirms American individualism.

Pitcock also views personal vehicles as egalitarian. “What automobiles give people is privacy and silence. It’s the giant equalizer,” Pitcock says. “The guy in the car next to you could be a multimillionaire and you could be a janitor, and, by God, you’re equal when you are sitting at that stoplight. In that instant, it’s one society. You don’t have the rich guys and the poor guys.”

A Gift from the Greatest Generation

Modern transportation has been responsible for moving populations from the heart of cities to outlying suburbs. The development of suburban America and transportation are like a dog chasing its tail. “The more development you have, the more transportation you need, and that development will continue. Unless you provide for those things, the entire prosperity of a community—employment, quality of life, people’s livelihood—will suffer. It all depends on having adequate transportation,” Austin Industries’ retired executive William Solomon emphasizes.

Consider the country’s transportation system another legacy gift from “the greatest generation.” “If you look at per capita investment in transportation, the highest per capita investment in this country was made in the late 1950s and ’60s, when we were building out the interstate system,” Texas A&M’s Transportation Institute’s David Ellis says. “In large measure, we are still living off the investment those folks made. And that’s what, in large measure, is responsible for a lot of the prosperity we enjoy today.”

Texas per capita spending for highway construction and maintenance went from approximately \$550 in the late 1950s and late 1960s to \$300 in 2014 (constant dollars in 2015). Properly maintained roads typically last 30 to 40 years before they require

major reconstruction. “You have to continue to maintain a road throughout that life span. Otherwise, the cost to fix it goes through the roof. And it’s essentially unusable in the interim,” Ellis said. “We are now living off of investments that knitted this country together . . . that allowed people in Dallas or Houston to be able to make things that people in St. Louis and Chicago will consume—and can do it in a way that keeps the price of those goods competitive. And if we hadn’t made those kind of investments, most of the jobs that exist in those areas wouldn’t be there.”



Johnny Weisman.

What We Take for Granted

Transportation remains the lifeblood of the nation’s economy and also an integral part of each of our daily lives, even though the connection may not be a conscious one in our minds.

“It’s the same way with food production. Most people don’t have a clue about where food comes from—other than it comes from H-E-B. But having food available is a basic component of their daily lives. And it’s expected—almost like it’s a right that they have—to have food or a good transportation system,” says Johnny Weisman, a longtime leader in the state’s highway construction industry (Hunter Industries).

“But it’s not simple—it’s a complex process that has to be pursued. It took untold numbers of people and their efforts to develop what we have today. Maintaining and expanding it is really mind-boggling. So all the issues and components and politics and dollars make up a complex issue—even though everybody takes that process for granted.”

Progress remains evolutionary—with most people today not fully aware or appreciative of the incremental improvements over time. “You take it as a given that you have a paved street to drive on. What if all the streets in Austin were completely mud or dirt? It wouldn’t be a very fun place to live. It’s taken a lot of dedication by a lot of people to get to where we are today with the lifestyles we have,” Weisman says.

Not Just Building for the Moment

The significance of transportation hit third-generation Texas highway contractor Dean Word III (Dean Word Co.) during a tour of Italy, where remnants of ancient Roman roads remain on the landscape. For centuries, people have relied on roads to reach each other and for trading routes.

“It takes a lot of engineering and construction talent, managerial skills, and critical manpower and equipment to move mountains and to fill valleys and to build bridges and highways,” Word says. “You want to make sure you spend the money as wisely and efficiently as possible and that you have lasting, positive impact across the generations. We’re not simply building for the moment. We build things that will last at least one generation, and the right-of-ways that we establish likely will be conduits for multiple generations—and even centuries.”

When he was a youngster, Dean’s father, Tim Word, a former national president of the Associated General Contractors, impressed upon him the importance of quality road construction, engineering, grade lines, curvature of the roadway, and slopes in approaching and descending hills. Building the I-10 interstate through the Texas Hill Country, for example, required precision blasting to cut through the rock.

“It was hard work on people and hard on equipment. You have to burn a lot of fuel and convert that fuel into useful energy. And you don’t want to have to go back later and do it again. You want to do it right the first time. The roadway cuts that you drive through Sutton County and Sonora are feats of engineering,” Word says. “That’s what we are about. We are about having lasting, positive impact on a mobile and growing society.”



Dean Word III.

What We Owe to the Business Community

The importance of bridges, roads, and highways has only increased over the decades and centuries. The nation’s business community built the first roads to expand markets

beyond the small settlements. “Because people saw that if we can connect these communities, then we don’t have to make everything for ourselves. And the goods that we do make, we cannot only sell here, we can sell over there,” says Texas A&M’s David Ellis.

“WITHOUT A TRANSPORTATION SYSTEM, YOU SIMPLY DO NOT HAVE AN ECONOMY.”

“If you don’t have a highway system, you don’t have jobs. How are you going to get to work? How are you going to get products out that are manufactured in this economy? How are you going to get products manufactured elsewhere here?” Ellis says. “The bottom line is this: Without a transportation system, you simply do not have an economy.”



Caprock Canyons State Park.
Photograph © TxDOT.