



December 29, 2020

Williamson County Purchasing Department
Attn: T2666 RFQ Planning For Ronald Reagan Corridor
100 Wilco Way, Suite P101
Georgetown, TX 78626

Dear Williamson County:

Thank you for your leadership in providing safe and reliable transportation facilities for our growing area.

Founded in San Antonio in 1965, Pape-Dawson has grown to a 600+ person firm (with nearly 100 offices in Central Texas). We provide quality civil engineering services to both public- and private-sector clients related to transportation planning and design, traffic engineering, land development, water resources, H&H, environmental permitting, archaeological services, surveying, and GIS services. All our offices (Austin, San Antonio, Houston, Fort Worth, and Dallas) are registered and in good standing with the Texas Board of Professional Engineers.

Our exceptional team will help you guide improvements to the Ronald Reagan Corridor to harness its short- and long-term potential through:

- My more than 30 years of experience and a proven record of accomplishment to not only keep the project moving, but to successfully deliver it early. I will be your project manager and contact for the RFQ and interview process, as well as throughout project development.
- Leveraging the outstanding technical expertise of our partner firms, (Alliance Transportation Group, Stantec, PE Structural, Blanton, Cambrian, and Raba Kistner), to execute this project.
- Capitalizing on our extensive team experience with Williamson County, CTRMA, TxDOT, and other transportation clients on all aspects of feasibility studies to deliver your project efficiently and effectively.
- Identifying ways to accelerate the project timeline while developing a phasing and segmentation plan to balance cost and revenue.
- Executing work in a way that maximizes funding opportunities through CAMPO, TxDOT, CTRMA, or a possible new toll entity led by the County.
- Value engineering to proactively plan for design measures to reduce construction time and costs, and to balance time and cost of land acquisition with cost of construction in a compact work zone.
- Addressing traffic, pedestrian, school, and neighborhood safety in the construction plans through formal outreach and maintenance of safety and incident management plans. We will work closely with your public involvement specialists to keep corridor users and residents informed through a transparent process to reduce inquiries into the County Commissioner's office.

I may be reached at the mailing address and phone number as shown below on this letterhead, at my email dseal@pape-dawson.com, or cell 972-489-6950. I look forward to working with Williamson County to expedite this project.

Sincerely,

Pape-Dawson Engineers, Inc.

A handwritten signature in blue ink, appearing to read 'D Seal'.

Dennis Seal, P.E.
Vice President

SECTION TWO: ORGANIZATIONAL CHART



The chart shows the key personnel and their responsibilities/activities within the team.

Physical office location that individuals report to 100% of the time:

AUSTIN, TX

- Dennis Seal, P.E.
- Brian Allen, P.E., CFM
- Ruben Gaztambide-Velez, RPLS, PS, CP
- Gabriel Ornelas, Jr., P.E.
- Joelle Rosentswieg, P.E.
- Dean Tesmer
- David Ramirez, P.E.
- Michael Chaney, AICP
- Sean Tihal, P.E.
- Bill Ihlo, P.E.
- Kemble White, PhD, PG
- Heather Beatty, PG

SAN ANTONIO, TX

- Dan Thoma, P.E., LEED AP
- Valerie Collins, AICP
- Edward Galicia, P.E.

DALLAS, TX

- Mickey Marlow, P.E.



Additional Pape-Dawson Engineering Support

- 22 Project Engineers – Austin
- 162 Project Engineers – Additional Locations

SECTION THREE: PROJECT MANAGER'S EXPERIENCE/QUALIFICATIONS



"I'll use my personal experience, strengths, and skills to anticipate problems and deliver a completed project, not just a set of plans. However, if problems do occur, I'll be there working for you and with you until they are solved."

DENNIS SEAL, P.E.
dseal@pape-dawson.com

LARGE CORRIDOR PROJECT EXPERIENCE

- NTTA Chisholm Trail Toll Road (deputy PM)
- TxDOT SH 31 Corsicana Reliever Route (PM)
- TxDOT US 69/SH 49 Toll Road Lindale Bypass (PM)
- TxDOT IH 35 Widening – Belton to Salado (task lead for Traffic Control and Phasing)

Mr. Seal squeezed freeway sections through these narrow corridors and minimized ROW and construction costs within accelerated schedules.

CENTRAL TEXAS TXDOT PROJECT MANAGEMENT EXPERIENCE

- FM 2657 Widening, Lampasas County (PM)
- SH 29 Widening, Bertram (PM)
- US 281 Bridge Replacement Schematic/EA, Marble Falls (PM)
- US 281 Widening, Marble Falls (PM)
- Wells Branch/Parmer Lane Operational Improvements, Austin (PM)
- US 87 and US 290 Pedernales Bridge Replacements, Fredericksburg (PM)

Mr. Seal is an experienced roadway/bridge engineer having served as project manager on over 200 projects for TxDOT as a consultant (50+ in Central Texas). Within TxDOT's scoring system for project managers, Mr. Seal has the highest score possible.

AREAS OF EXPERTISE

- New location roadways
- Widening and reconstruction
- Intersection improvements
- Safety improvements
- Multi-jurisdiction funding

Mr. Seal's experience in all facets of transportation project development, design, and problem-solving results in seamless delivery of cost-efficient projects.

STRENGTHS

- Effective manager of people and resources
- Creative, problem-solving mindset looking for long-term solutions rather than the easiest immediate path
- Diverse and long (30+ years) understanding of Central Texas transportation issues, including local players, political climate, regulations, and public sentiment

Mr. Seal's efficiencies in the design process and his ability to develop young engineers in the methods of efficient design have allowed him to manage dozens of TxDOT projects simultaneously, while never missing a submittal deadline.

SECTION FOUR: TEAM'S PLANNING AND DESIGN EXPERIENCE



"I will provide value engineering at every step of the design process to ensure County funds are used to their maximum benefit."

DAN THOMA P.E., LEED AP

WILLIAMSON COUNTY PROJECT EXPERIENCE

- Hero Way (US 183 to CR 269)
- 183A (Avery Ranch to FM 1431)
- Brushy Creek Regional Trail Phase V

ADDITIONAL CENTRAL TEXAS CLIENTS SERVED

- City of Austin
- City of Kyle
- TxDOT Austin District
- City of Pflugerville

STRENGTHS

- Proactive and innovative approach to analyzing alternatives and providing thorough responses to client and stakeholder requests/comments
- In-depth understanding of federal, state, and local regulations and design standards
- Extensive experience with new location, widening, rehabilitation, and bridge projects

Mr. Thoma developed schematic design and PS&E for Hero Way a month ahead of the proposed schedule and within the allotted budget.

On the FM 685 at Rowe Lane project for the City of Pflugerville, Mr. Thoma value engineered the pavement design to save \$160k from the original estimated cost.

Mr. Thoma worked with clients and property owners to obtain grading easements on the Foster Road project for the Alamo Regional Mobility Authority, saving an estimated \$600k in retaining wall costs, which enabled development of auxiliary lanes, increasing the safety of the corridor.



"I understand traffic forecasting in Central Texas, the underlying drivers of the growth the County is experiencing, and have experience working with the County's regional planning partners. It is exciting to work for a client with the kind of vision Williamson County has for its future."

MICHAEL CHANEY, AICP

WILLIAMSON COUNTY PROJECT EXPERIENCE

- Long-Range Plan (LRTP) Update
- Traffic Forecasting for Corridors A1, C, E1, F, and H
- SE Loop Retail Study
- Planning Support for FM 2243 and CAMPO Demographics
- Corridor D – Ronald Reagan Boulevard

ADDITIONAL CENTRAL TEXAS CLIENTS SERVED

- CAMPO
- CTRMA
- TxDOT Austin District
- Travis County
- KTMPO
- Bastrop County

STRENGTHS

- In-depth understanding of the tools and procedures required to understand and plan for the future of Williamson County
- Responsive to client requests
- Ability to innovate where traditional procedures fall short of meeting a project's needs

Mr. Chaney delivered detailed traffic forecasts for several complex scenarios involving combination of large greenfield corridors (A1, E1), utilizing a more detailed version of the CAMPO model and a process that is both explainable and defensible to planning partners.

Mr. Chaney recently led the update of the CAMPO 2045 travel demand model and understands its substantial capabilities as well as its limitations.

Mr. Chaney adapted both the CAMPO model and the CAMPO demographic forecast to provide increased accuracy for the FM 2243 traffic forecast and to support the requirements of the analysis.

SECTION FIVE: DRAINAGE EXPERIENCE/QUALIFICATIONS



“My focus on quality and attention to detail have allowed me to deliver cost-effective and highly constructible designs to Williamson County.”

EDWARD GALICIA, P.E.

WILLIAMSON COUNTY PROJECT EXPERIENCE

- Bluebonnet Drive
- Walberg Heights

ADDITIONAL CENTRAL TEXAS CLIENTS SERVED

- City of Austin
- TxDOT

AREAS OF EXPERTISE

- 3D design
- Geometric design
- Bridge replacements
- Culvert replacements
- Storm sewer design and analysis
- Roadway widening, rehabilitation, and reconstruction

STRENGTHS

- Responsive to clients, actively listening to current requests while proactively attempting to anticipate future needs
- High degree of knowledge and proficiency with Microstation, GeoPak, OpenRoads, HY8, GeoPak Drainage
- Former TxDOT design engineer
- Ability to expertly manage design and efficiently lead in-depth training programs simultaneously
- Dedication to delivering quality products on time and within budget

Mr. Galicia has successfully designed two projects for Williamson County, including drainage analysis, roadway reconstructions, TCP, and SWPPP.

Mr. Galicia has contributed significantly to the expansion and improvement of roadway and drainage infrastructure in Central Texas, including bridge replacements on city streets, county roads, and state highways.

Mr. Galicia has extensive 3D design experience. With multiple 3D designs on various corridor types and designs, Mr. Galicia has trained TxDOT staff with his expertise. In addition, Mr. Galicia incorporated his knowledge into drainage design allowing for a more accurate and expedient product.

Mr. Galicia understands the need to coordinate drainage design with all other design disciplines on the project; has first-hand experience in developing roadway, TCP, and utility designs that work with complicated drainage design elements.

SECTION SIX: STRUCTURAL EXPERIENCE/QUALIFICATIONS



"Each project is unique and demands focused attention on site constraints and stakeholders' concerns, with the owner's goals in mind. I commit to provide safe and efficient structural solutions for Williamson County."

JOELLE ROSENTSWIEG, P.E.

WILLIAMSON COUNTY PROJECT EXPERIENCE

- Great Oaks at Brushy Creek Bridge Preliminary Engineering and PS&E
- Mays Street Expansion
- Brushy Creek/Hairy Man Traffic Study
- O'Connor Drive Bridge Evaluation
- Corridor I from Ronald Reagan Boulevard to US 183

Ms. Rosentswieg led the design team to address operational and capacity improvements at Great Oaks Drive/Brushy Creek Road and to replace the existing bridge over Brushy Creek. The unique geometrical and hydraulic challenges were met with an innovative seven-span hybrid Tx-girder/slab beam bridge that extends past creek limits to support the adjacent intersection, widen the hydraulic opening, and provide covered parking. Pedestrian trails are continued across the bridge and are accessible below the intersection from the new parking lot.

ADDITIONAL CENTRAL TEXAS CLIENTS SERVED

- Travis County
- Hays County
- CTRMA
- TxDOT
- City of Austin

Ms. Rosentswieg has completed design of numerous bridge replacement projects for Travis County in 2019 to meet Atlas 14 criteria. Challenges included keeping superstructure thin to minimize approach embankment impact on parallel railroad, minimizing impact on residents' driveways, and maintaining access to driveways during construction.

AREAS OF EXPERTISE

- Design of new bridges and bridge replacements (water crossings and grade-separations), widenings, evaluation and repair, rail and safety improvements, bridge-class culverts, and retaining walls, often with accelerated design schedules
- Aesthetic design for structures and accelerated bridge construction technologies
- AASHTO specifications and TxDOT design/detailing criteria and procedures
- TxDOT design tools (BGS, PGSuper, Cap18, Wincore) and other analysis programs (MDX, Risa3D, Lpile, spColumn)
- MicroStation and AutoCAD (2D and 3D)

Ms. Rosentswieg has spent 20 years engineering efficient structures, both large and small, in Central Texas.

STRENGTHS

- Managing the design of transportation projects throughout Central Texas and statewide
- Ability to identify and address constructability issues and convey workable solutions in structural details
- Client-focused design approach and commitment to excellence

Ms. Rosentswieg's breadth of expertise and keen eye for detailing, constructability, and organization is evident in the construction documents that she produces.

SECTION SEVEN: ENVIRONMENTAL EXPERIENCE/QUALIFICATIONS



“Developing an excellent transportation infrastructure system for Williamson County, while protecting the special natural environment of the County, is vital for maintaining high quality of life for current and future generations.”

DEAN TESMER

WILLIAMSON COUNTY PROJECT EXPERIENCE

- CR 366 (FM 397 to Chandler Road)

Mr. Tesmer is the environmental lead for this ongoing CR 366 project for Williamson County, and has successfully provided technical reports on WOUS, karst features, federally listed threatened and endangered species, and hazardous materials.

ADDITIONAL CENTRAL TEXAS CLIENTS SERVED

- TxDOT Austin District
- TxDOT Environmental Affairs Division
- City of Cedar Park
- City of Pflugerville
- City of Georgetown

Mr. Tesmer’s work has resulted in project approvals by TxDOT, Texas Parks and Wildlife Department, USACE, U.S. Fish and Wildlife Service, and the U.S. Federal Highway Administration.

AREAS OF EXPERTISE

- Public involvement
- Traffic noise analysis
- Air quality analysis
- Nationwide permit
- Biological evaluations/assessments
- Sec. 4(F)/6(F) evaluations
- Socio-economic and environmental justice analyses
- Hazardous materials initial site assessment
- Environmental document preparation

Mr. Tesmer has completed numerous environmental review projects for multiple local governments in Central Texas and is precertified on all relevant TxDOT environmental categories.

STRENGTHS

- Expert on state and federal wildlife laws and the National Environmental Protection Act
- In-depth understanding of federal, state, and local regulatory guidelines and requirements
- Client-focused design approach and commitment to excellence
- Respected for budget projection, resource utilization, and QA/QC
- Proven record of accomplishment on numerous infrastructure projects, including contracts for local governments and utility companies

Mr. Tesmer has led projects at both the state and local level and has consistently proven his ability to use his depth of experience and knowledge to guide project proponents or stakeholders, lead study teams, and support engineering feasibility and design alternatives analyses with clear impact avoidance and minimization strategies to meet project Purpose and Need.

SECTION EIGHT: PROPOSED TIME COMMITMENT

Project commitments are approximated based on an estimated mid-year start date for this project.



MICKEY MARLOW, P.E.
PRINCIPAL-IN-CHARGE

	Completion Date	% Time Committed
CURRENT PROJECTS		
CTRMA Professional Services	8/2021	5
PROPOSED PROJECTS		
TxDOT Fort Worth District IH 35 GEC		5
TxDOT Urban and Rural CEC		10
Williamson County – Planning for Ronald Reagan Corridor		80



DENNIS SEAL, P.E.
PROJECT MANAGER

	Completion Date	% Time Committed
CURRENT PROJECTS		
Williamson County – Bud Stockton Extension	7/2021	15
PROPOSED PROJECTS		
TxDOT – US 271 and SH 315 Schematic, ENV, PS&E, Various Districts		10
Williamson County – Planning for Ronald Reagan Corridor		75



DAN THOMA, P.E. LEED AP
ROADWAY PLANNING & DESIGN

	Completion Date	% Time Committed
CURRENT PROJECTS		
Loop 1604	1/2021	5
183	10/2021	10
FM 166	4/2021	5
FM 975	7/2021	5
City of San Antonio On-Call Engineering and Program Management	7/2023	5
City of Pflugerville Rowe Lane	1/2021	2
PROPOSED PROJECTS		
IH 410 San Antonio District		10
North Canal Survey City of Houston		13
Williamson County – Planning for Ronald Reagan Corridor		45

SECTION EIGHT: PROPOSED TIME COMMITMENT



BRIAN ALLEN, P.E., CFM

ROADWAY PLANNING & DESIGN SUPPORT

Completion Date % Time Committed

CURRENT PROJECTS

Williamson County Bud Stockton Extension	6/2021	15
Travis County Old Lockhart Widening	4/2021	10
TxDOT SH 36 PS&E	3/2021	10
Hays County – Jacob’s Well	9/221	10

PROPOSED PROJECTS

No Proposed Project Commitments		0
Williamson County – Planning for Ronald Reagan Corridor		55



VALERIE COLLINS, AICP

ENVIRONMENTAL SUPPORT

Completion Date % Time Committed

CURRENT PROJECTS

City of San Antonio NEPA	1/2024	10
--------------------------	--------	----

PROPOSED PROJECTS

SAWS Governmental Engineering Design		10
City of Corpus Christi Nueces Bay Boulevard		10
City of San Antonio Cultural Resources Consulting Services		10
Williamson County – Planning for Ronald Reagan Corridor		60



RUBEN GAZTAMBIDE-VELEZ, RPLS, PS, CP

SURVEY

Completion Date % Time Committed

CURRENT PROJECTS

TxDOT Waco District	1/2021	20
---------------------	--------	----

PROPOSED PROJECTS

IH 410 San Antonio District		10
North Canal Survey City of Houston		15
Williamson County – Planning for Ronald Reagan Corridor		55

SECTION EIGHT: PROPOSED TIME COMMITMENT



GABRIEL ORNELAS, JR., P.E.
GEOTECHNICAL

	Completion Date	% Time Committed
CURRENT PROJECTS		
Hernandez Middle School Gymnasium	3/2021	10
Heatherwilde Subdivision Pavement Rehabilitation	11/2021	10
PROPOSED PROJECTS		
Heritage Trail West, City of Round Rock		10
University Boulevard Reconstruction		10
Williamson County – Planning for Ronald Reagan Corridor		60



JOELLE ROSENTSWIEG, P.E.
STRUCTURES PLANNING & DESIGN

	Completion Date	% Time Committed
CURRENT PROJECTS		
Williamson County Great Oaks Bridge - Construction Phase	6/2022	2
Williamson Corridor I Planning	9/2021	5
IH 36 Capital Expansion South	11/2021	15
Other miscellaneous project commitments	12/2022	4
PROPOSED PROJECTS		
No Proposed Project Commitments		0
Williamson County – Planning for Ronald Reagan Corridor		74



DEAN TESMER
ENVIRONMENTAL

	Completion Date	% Time Committed
CURRENT PROJECTS		
FM 516 Widening	4/2021	10
I-69 Connector Feasibility Study	5/2021	10
SH 302 (US 285 to Notrees) Roadway Widening	8/2021	10
PROPOSED PROJECTS		
City of Cedar Park/Riviera Subdivision		5
Williamson County – Planning for Ronald Reagan Corridor		65

SECTION EIGHT: PROPOSED TIME COMMITMENT



EDWARD GALICIA, P.E.

ROADWAY DRAINAGE PLANNING & DESIGN

	Completion Date	% Time Committed
CURRENT PROJECTS		
TxDOT Airport Boulevard C2	8/2021	10
TxDOT WA4 FM1720	3/2021	15
TxDOT Airport Boulevard C3	10/2021	10
TxDOT SH 176	12/2021	15
PROPOSED PROJECTS		
No commitments		0
Williamson County – Planning for Ronald Reagan Corridor		50



DAVID RAMIREZ, P.E.

QUALITY CONSTRUCTABILITY REVIEW

	Completion Date	% Time Committed
CURRENT PROJECTS		
E MLK / FM 969 CPO Mobility	10/2021	20
PROPOSED PROJECTS		
TxDOT ODA SH 176 W		25
TxDOT 8x8 S&E/PS&E		20
Williamson County – Planning for Ronald Reagan Corridor		35



MICHAEL CHANEY, AICP

PLANNING & TRAFFIC ANALYSIS

	Completion Date	% Time Committed
CURRENT PROJECTS		
Oklahoma Statewide Model	3/2021	10
El Paso Model and Demographic Update	4/2021	10
AAMPO Model and Demographic Update	3/2021	5
Williamson County Corridor E	9/2021	5
Other miscellaneous project commitments	11/2021	11
PROPOSED PROJECTS		
ACOG Model Update		10
TxDOT TPP, Freight Planning		10
Williamson County – Planning for Ronald Reagan Corridor		39

SECTION EIGHT: PROPOSED TIME COMMITMENT



SEAN TIHAL, P.E.
TOLL INTEGRATION/VIABILITY

	Completion Date	% Time Committed
CURRENT PROJECTS		
Ohio Turnpike and Infrastructure Commission Toll Advisory Services	4/2023	30
Kane County, IL Toll Services	4/2022	20
PROPOSED PROJECTS		
M6 Toll Design Services		15
Oregon DOT General Tolling Consultant Services		10
Williamson County – Planning for Ronald Reagan Corridor		25



BILL IHLO, P.E.
TNR SUPPORT

	Completion Date	% Time Committed
CURRENT PROJECTS		
Central Texas Regional Mobility Authority T&R Services	12/2022	60
Independent Advisor on Various Contracts	12/2022	20
PROPOSED PROJECTS		
No commitments		0
Williamson County – Planning for Ronald Reagan Corridor		20

SECTION EIGHT: PROPOSED TIME COMMITMENT



KEMBLE WHITE, PHD, PG
KARST SUPPORT

	Completion Date	% Time Committed
CURRENT PROJECTS		
WCCF HCP Support Services	Unknown	25
Loop 360 Corridor Project	2023	5
CTRMA MoPac South	2021	5 (project on hiatus until spring)
Miscellaneous Small Projects	12/2021	15
PROPOSED PROJECTS		
Williamson County Environmental Services RFQ (would replace WCCF project above)		25
Williamson County – Planning for Ronald Reagan Corridor		50



HEATHER BEATTY, PG
EDWARDS AQUIFER REGULATORY

	Completion Date	% Time Committed
CURRENT PROJECTS		
WCCF HCP Support Services	Unknown	25
Loop 360 Corridor Project	2023	5
CTRMA MoPac South	2021	5 (project on hiatus until spring)
Miscellaneous Small Projects	12/2021	15
PROPOSED PROJECTS		
Williamson County Environmental Services RFQ (would replace WCCF project above)		25
Williamson County – Planning for Ronald Reagan Corridor		50

SECTION NINE: UNDERSTANDING OF THE PROJECT

Ronald Reagan, between FM 2243 and IH 35, is a 25-mile roadway that currently varies from two to four lanes within 200' to 260' of ROW. The ROW will be evaluated for a controlled access facility with mainlanes and frontage roads to support continued economic vitality in the County. Additional ROW will be needed to account for auxiliary lanes, ramps, interchanges, drainage/water quality (WQ) facilities, anticipated growth, and other features.

To successfully deliver this project, financial feasibility and stakeholder (particularly landowner) coordination are essential. Our team will execute these three elements to deliver a viable, flexible, and publicly accepted project.

Recent 2040 projections predict 48-59,000 trips per day (TPD) on the southern-most segment, and 10-22,000 TPD on the remaining segments. These are similar to preliminary projections for 183A, which proved to be a viable tolled option. Thus, evaluation of bonding, tolling, and other financing mechanisms (such as tax increment reinvestment zones (TIRZ) along the corridor) should be considered. We understand TIRZ formation could require coordination and Advanced Funding Agreements with partner entities.

The feasibility stage will evaluate alternates that consider:

- Typical section options for mainlanes and frontage roads.
- Access management or mobility improvements (by others) to Parmer Lane south of RM 1431.
- Landowner willingness to donate ROW.
- Financing options (bond, toll, TIRZ, etc.), possibly including identification of a lead entity for toll implementation. Although CTRMA has primacy, it is not certain they would consider this project, opening the potential to explore a new entity (possibly County-led).
- Optimizing locations for ingress/egress, gantries, and auxiliary lanes to increase financial viability.
- Interchange locations, including SH 195 and SH 29.
- Impact of a possible future 2-mile spur between Ronald Reagan to US 183 in the vicinity of FM 3405 for direct access to a future extension of 183A.
- Impact of an interchange at Parmer Lane and SH 45.



Possible Future Connector Spur

The normal environmental process and schematic/final design stages will follow the feasibility analysis. While many issues must be addressed during this stage, our feasibility analysis and the County's extensive experience on other projects will create a launchpad for solutions. Therefore, the feasibility study should be guided by well-designed quantitative analysis that can be presented to stakeholders (including decision makers) using visualization tools that demonstrate the return on investment produced by each alternative. It is also important to comprehensively document each step of the process, including stakeholder feedback.

The County's RFQ indicates multiple firms will be selected for discrete sections of the project. While appropriate, we recommend that one team lead the initial feasibility effort so that optimal discrete sections, driven by the above variables, can be defined and an executable implementation plan developed. Our team is well qualified to lead this effort.



DENNIS SEAL, P.E.
Project Manager

Education:

B.S. in Civil Engineering, The University of Texas at Arlington, 1988

Registration/License:

Professional Engineer, Texas No. 80287, 1995

TXDOT PRECERTIFICATIONS

- | | |
|---|---|
| 1.5.1 Feasibility Studies | 10.1.1 Hydrologic Studies |
| 3.2.1 Route Studies & Schematic Design | 10.2.1 Roadway Hydraulic Design |
| 4.2.1 Roadway Design | 10.3.1 Bridge Hydraulic Design |
| 4.4.1 Freeway Interchanges | 11.1.1 Roadway Construction Management and Inspection |
| 8.1.1 Signing, Pavement Marking, and Channelization | 14.3.1 Transportation Foundation Studies |

BIO

Mr. Seal has over 30 years of roadway and bridge design and management experience, including 7 years of experience with TxDOT's Childress District as an assistant area engineer, area engineer, and district construction and maintenance engineer. Mr. Seal has a unique understanding of the roadway and bridge construction industry that allows him to develop plans efficiently and profitably, that portray discernable information that results in competitive bids from contractors and result in zero design related field changes. His efficiencies in the design process has allowed him to manage dozens of projects simultaneously while never missing a submittal deadline. Mr. Seal's experience also includes heavy involvement in the energy sector representing several major wind energy developers and contractors. He pioneered the first damage mitigation agreements between TxDOT and the energy sector. On behalf of his energy sector clients, Mr. Seal developed an accelerated process to assess the present worth of an existing highway using remaining life analysis, which set the TxDOT precedent for all energy sector bonding agreements to follow.

RELEVANT PROJECT EXPERIENCE

TxDOT – SH 31 Corsicana By-Pass Schematic Design, Dallas, TX

Mr. Seal served as the project manager and roadway design task leader for alternatives analysis, route selection, schematic design, and environmental assessment (EA). Like the initial preservation of the Ronald Reagan Corridor, Mr. Seal was responsible for environmentally clearing the footprint of a full freeway section with the intent of building one of the frontage roads for interim two-way operation or building out both one-way frontage roads. Challenges included working the alignment through an active oil field and identified wetlands. Mr. Seal work extensively with public officials and stakeholders in the development of an accurate constraints map. He and his team developed three corridor alignments to the same level of effort and then presented the preferred alignment to the public.

Due to extensive stakeholder involvement upfront in the constraints map development, the preferred alignment received public support. Mr. Seal developed a PS&E-grade schematic design for the ultimate freeway section and developed the plans for the construction of both frontage roads as the first phase of construction.

TxDOT – US 69 By-Pass Feasibility Study, Tyler, TX

Mr. Seal was the project manager and roadway design task leader for two independent projects under the same contract. One project was the Feasibility Study for a US 69 by-pass of Lindale (currently designated as part of the SH 49 Toll Road). The other project was the schematic design, EA, and PS&E for the 10-mile widening of US 69 from Lindale to Mineola from a two-lane rural roadway to a four-lane divided highway.

For the by-pass project, Mr. Seal led the development of the environmental and economic constraints map and analyzed the measures of impact of various corridors to bypass Lindale. One of the first action items for the by-pass project was to meet with the Lindale public officials for the establishment of a local stakeholder steering committee. The goal of the steering committee was to allow local stakeholders to have input in not only identifying routes but to more importantly provide early identification of constraints that may not be apparent from typical public resources. Mr. Seal's impact analysis included not only quantitative and qualitative social, economic, and environmental impacts, but also included PS&E-grade construction cost estimates for each alternative. The thoroughness of the constraint map and the involvement of the stakeholder steering committee led to a public-supported by-pass corridor for preservation.

For the widening project, Mr. Seal evaluated alternatives. After developing initial alternatives with TxDOT at kickoff, Mr. Seal evaluated designs that widened 100% to the east, 100% to the west, and 100% down the middle of the existing ROW. Ultimately the preferred alignment consisted of portions of each of the original alignments due to various constraints. Mr. Seal led public involvement efforts in both Mineola and Lindale, resulting in a public-supported preferred alignment. The project was successfully designed and constructed.

TxDOT – SH 158 Alternative Analysis, Schematic Design, and PS&E, San Angelo, TX

Mr. Seal was the project manager and roadway design task leader for the alternative analysis, schematic design, and PS&E development for the widening of a 50-mile section of US 158 from a two-lane rural section to four-lane median-separated highway. Mr. Seal developed a widening alternative that had the least impactful footprint in an existing corridor that had over 900 miles of buried petroleum lines within 50' of the existing ROW and dozens of identified tank battery sites that would require hazmat mitigation if impacted. Identifying the location of the buried petroleum lines was an exhaustive effort. Most of the lines were buried during several booms by dozens of different petroleum entities with transfer of ownership over many years, resulting in little or no location documentation other than occasional witness posts. Mr. Seal led the boots-on-the-ground effort with stakeholders and his SUE subconsultant to identify the location of buried petroleum lines so Mr. Seal could accurately evaluate the footprint impacts of his alternatives. He ultimately developed and weighed the impacts of several alternatives that resulted in a public-supported project. Mr. Seal developed the PS&E that included the direct connect interchange of SH 158 and SH 87.

TxDOT – US 277 Schematic Revision and PS&E, Wichita Falls, TX

Mr. Seal was one of three prime providers to deliver a revised schematic and full PS&E for the widening of 50 miles of US 277 on a 12-month schedule. Serving as project manager and roadway design task leader, Mr. Seal worked seamlessly with the other two prime consultants to adjust an existing approved schematic to cut costs and bring the project within approved budgets. Mr. Seal's team's role was to evaluate and gut the existing roadway design. Within a 2-week schedule, Mr. Seal's team totally redesigned the entire 50-mile project, changing every roadway typical section, slope, and profile of the main lanes and frontage roads, saving \$4M in earthwork, with zero impacts to safety or performance. After the schematic revisions, Mr. Seal's team

developed the PS&E for 13 miles of the project, which included the Seymour by-pass, a full freeway section with continuous frontage roads and grade separated intersections, and the Brazos River Bridge—all within an 11-month schedule.

The Wichita Falls design staff recognized that their in-house TxDOT roadway design training needed improvements for them to design with the same efficiency that our designers could design and produce plans. They acknowledged that with their current training resources, it would take them 6 months to do what we could do in 2 weeks. To address this feedback, Mr. Seal and his lead designer led 2 weeks of in-house training on some of their active design projects, discussing best practices to plan and manage an accelerated production schedule, identify up-front critical design constraints to establish a critical path schedule, establish up-front first- and second-stab solutions of identified constraints, establish daily production goals, and assign staff to strengths. Mr. Seal's lead designer focused his portion of the training on applications and efficiencies in GEOPAK and MicroStation that were not included in the standard training TxDOT provided. At the end of the 2 weeks of training, TxDOT's staff estimated they shaved several months off their design schedules just in the production accomplished during the training.

TxDOT – IH 35 Reconstruction/Widening Project, Waco District, TX

This 6-mile project consisted of the total reconstruction of IH 35 main lanes and frontage roads from Salado to Belton. Mr. Seal's primary responsibility was developing the construction phasing and TCP layouts, pavement marking layouts, plan and profiles for all temporary pavement and temporary ramps, and complete grading cross sections for each construction phase. This was a fast track design project to meet a letting that would secure and obligate ARRA stimulus funding. The caveat to meeting the letting date and using ARRA funds was that TxDOT had not purchased needed ROW nor cleared utilities, and they could not implement a delayed start date of 18 months to clear the ROW.

Mr. Seal developed a Critical Path (CP) construction phasing plan supported by Primavera scheduling software and then developed a Construction Management Plan (CMP) for work that could be accomplished within the first 18 months without ROW clearance. His phasing layouts were comprehensive and supported with grading cross sections for each phase. His phased cross sections accurately depicted all above ground and subsurface elements of work, including location and direction of traffic, types and location of barriers, permanent and temporary pavements, permanent and temporary retaining walls, cross culverts, storm drains, ITS cabling, slopes, ditches, and flow arrows. This level of detail was critical for several reasons: 1) allowed Mr. Seal to verify interim drainage patterns and address interim drainage issues that could negatively affect the traveling public or the contractor's efficient progression of work, 2) allowed for accurate quantity phased construction take-offs that were used in CP scheduling, 3) allowed Mr. Seal to identify and design around fatal flaw pinch points of areas with safety or constructability issues, 4) gave credibility and assurance that the project could be built efficiently and economically while maintaining safe and efficient mobility of the traveling public during construction, and 5) helped give bidding contractors a true visual of the construction, lowering their risk factor and overall bid prices.

TxDOT – IH 35, Mines Road (FM 1472), and BNSF Railroad Grade Separation, Laredo District, TX

Mr. Seal served as the project manager for the feasibility study, schematic design, public involvement, environmental assessment, value engineering study, and PS&E development of a high-speed direct connect interchange that grade separated the highest truck traffic intersection in the U.S. Due to the 16 daily trains that blocked trucks from Mines Road, trucks were backing up onto the IH 35 main lanes 16 times a day, causing congestion and safety problems. This was a very constrained and complicated project in a 100% commercially developed area along IH 35 and Mines Road. Mr. Seal had extensive coordination with BNSF railroad for temporary at-grade crossings and aerial crossing permits. He dealt with the issues of a flood control stream

crossing, designed a solution to the flooding of a strip mall caused by a previous TxDOT project, coordinated a hazardous waste mitigation plan, developed a construction phasing and TCP that maintained truck movements at all times during construction, and performed every aspect of the project on an accelerated 18 month schedule to meet a non-moveable letting date. This was a high-profile project that required extensive coordination with TxDOT and regulatory agencies to meet letting date.

TxDOT – IH 35 Hot Spot Congestion Mitigation Project, *Austin, TX*

Mr. Seal developed low cost alternatives for hot spot congestion mitigation along IH 35 in north Austin, and used VISSM to evaluate the effectiveness of the alternatives. He developed the PS&E for the two alternatives deemed cost effective. Mr. Seal developed the PS&E for ramp reversals, squeezed a third frontage road lane between Parmer Lane and Howard Lane, and designed an intersection by-pass lane along IH 35 under the Parmer Lane overpass bridge. He also developed the PS&E to add dual left turn lanes under IH 35 at Wells Branch Parkway, left-turn storage lanes and intersection by-pass right turn lanes on Wells Branch, and dedicated left turn lanes and intersection by-pass right turn lanes on the IH 35 frontage roads.

TxDOT – Dallas North Tollway Widening, Rehabilitation, and Mainlane Plaza #1 Replacement PS&E, *Dallas, TX*

Mr. Seal was the project manager to add a through lane and widen shoulders to an existing six-lane barrier-divided toll road as it reaches a toll plaza. Design elements of the 1.5-mile project included replacement of an existing underpass with a single-span steel structure, 2,000' of retaining wall, lowering raised curb shoulders on two bridges, and TCP for total reconstruction of mainlane concrete pavement to coordinate with simultaneous reconstruction of the toll plaza.

TxDOT – IH 30 / IH 635 Interchange Alternatives Analysis, *Mesquite, TX*

Mr. Seal was the project manager responsible for providing roadway and bridge design services for TxDOT Dallas District, NCTCOG, the City of Mesquite, and General Growth Properties. Services included alternative connector layout, analysis, and construction phasing for reconstruction of this four-level fully directional interchange in order to build some of the direct connectors ahead of the anticipated letting date of 2014.

TxDOT – North Texas Tollway Authority Work Order Consultant Services (Dallas North Tollway/LBJ Freeway Improvements), *Plano, TX*

Mr. Seal was the project manager for the addition of a third through lane on the northbound-side of Dallas North Tollway at its interchange with LBJ Freeway (IH 635). Design elements of the 1.5-mile project included a bridge widening, retaining wall retrofit, reconfiguration of two existing ramps, revised guide signing, detailed TCP to maintain full access to an area mall throughout construction, and coordination with the City of Dallas (who maintains the frontage roads).

TxDOT – US 281 Widening, *Marble Falls, TX*

Mr. Seal was the project manager for this 3R design criteria project consisting of 2 miles of existing four-lane undivided to five-lane divided with shoulders. Design elements included safety shoulder and center turn lane widening of the existing roadways, rehabilitation of the existing roadway surfaces, and safety enhancements (culvert extensions and safety end treatments, metal beam guard fence retrofits, clear zone encroachment protection, and horizontal and vertical deficiency corrections). Because the project was within the existing ROW, Mr. Seal optimized the horizontal alignment to meet design criteria while making maximum use of existing pavement.



MICKEY MARLOW, P.E.

Principal-in-Charge

Education:

B.S. in Mechanical Engineering, Midwestern State University, 2007

Registration/License:

Professional Engineer, Texas No. 121535, 2015

Professional Engineer, Oklahoma No. 28701, 2016

TXDOT PRECERTIFICATIONS

- | | |
|---|--|
| 1.3.1 Subarea/Corridor Planning | 7.1.1 Traffic Engineering Studies |
| 1.4.1 Land Planning/Engineering | 7.4.1 Traffic Control Systems Analysis, Design, and Implementation |
| 1.5.1 Feasibility Studies | 8.1.1 Signing, Pavement Marking, and Channelization |
| 2.3.1 Wetland Delineation | 8.2.1 Illumination |
| 2.4.1 Nationwide Permit | 8.3.1 Signalization |
| 2.4.3 U.S. Coast Guard & U.S. Army Corps of Engineers Permits | 8.6.1 Rail-Highway Design |
| 2.6.2 Impact Evaluation Assessments | 10.2.1 Roadway Hydraulic Design |
| 2.13.1 Hazardous Materials Initial Site Assessment | 10.3.1 Bridge Hydraulic Design |
| 3.2.1 Route Studies & Schematic Design | 11.1.1 Roadway Construction Management and Inspection |
| 4.2.1 Roadway Design | 11.4.1 Environmental Inspections |
| 4.5.1 Constructability Review | |

BIO

Mr. Marlow has 30 years of experience with transportation project management, bridge and construction inspection, bridge safety inspection, and owner verification representation. His experience includes more than 25 years of evaluating and managing roadway design projects to meet state and federal design standards and specifications. He has performed inspection and surveys for countless bridge projects. Mr. Marlow has provided all calculations and plan layouts for cost-benefit analysis of existing bridge structures for rehabilitation and replacement assessments. He has experience in Federal Highway Administration (FHWA) review coordination and comment resolution. He performed plan review services for 15 of his 30-year transportation career, and has additional experience in local agreement development and review, construction inspection, lab analysis, design, planning, consultant project management, and general plan quality assessments. Mr. Marlow worked for TxDOT for 27 years as Wichita Falls District plan review and design lead, design consultant coordinator, and design and construction project management in the Traffic Operation section. He most recently served as consultant contract manager for eight TxDOT Districts (Dallas, Fort Worth, Atlanta, Brownwood, Tyler, Waco, Wichita Falls, and Paris), for which he managed local agreement development, consultant selection, contract development, work authorization (WA) assignments, and WA project management, with an annual budget of approximately \$300M to \$400M.

RELEVANT PROJECT EXPERIENCE

TxDOT – IH 820, Tarrant County, TX

This Tarrant County project involved schematic, environmental, PS&E, and post letting coordination. Mr. Marlow worked with Fort Worth District as the project manager for the review and preparation of preliminary geometric schematics, route studies, preliminary engineering, environmental documentation, public involvement, and PS&E for the \$250M reconstruction of the facility and interchange. He also coordinated final FHWA approval of the schematic.

TxDOT – IH 35 East Horseshoe, Dallas County, TX

Mr. Marlow served as TxDOT project manager for consultant selection and contract procurement. He was also responsible for overseeing all phases of PS&E development to the 30% level. This Dallas County project included bridges spanning the Trinity River floodplain. This aspect of the project required intensive communication in coordination during environmental document development.

TxDOT – IH 35 West North Tarrant Express Segment 3B, Fort Worth District, TX

As project manager for this Fort Worth District project, Mr. Marlow managed the procurement and selection of design consultant for this \$165M project, and managed all aspects of PS&E development. This project is on the nation's list of most congested freeways in the country. Mr. Marlow reviewed and approved all aspects of design, managed stakeholder coordination, and performed constructability reviews. Traffic control was one of the most challenging aspects of this project, since the project area adjoins two other large complex projects on IH 35, but the project was completed with minimal disruption to the public and additional costs associated with change orders. After the projects were under construction, Mr. Marlow worked in the role of oversight for the GEC working on behalf of the Fort Worth District.

TxDOT – IH 345, Dallas District, TX

Mr. Marlow, in conjunction with the Dallas District, was the project manager overseeing and managing the development of a feasibility study for the rehabilitation of the \$44M IH 345 overhead freeway bridge in Dallas County. This unique exotic structure presented TxDOT with many unique challenges. Mr. Marlow was on a team charged with developing alternative analysis for selection of an innovative approach for reconstruction and rehabilitation.

TxDOT – SH 360 at IH 30, Tarrant County, TX

Mr. Marlow, in conjunction with the Fort Worth District, was the project manager overseeing PS&E development of this interchange in Tarrant County. The project's compressed schedule and funding constraints required managing Proposition 1 funding to facilitate plan development. Mr. Marlow proposed a phased development plan, used to complete the PS&E with consultant resources. The project was successfully let to construction.

TxDOT – FM 2650 Structure and Roadway Widening, *Wichita Falls District, TX*

As project manager for this Wichita Falls District project, Mr. Marlow performed hydraulic analysis, designed extensions and safety end treatments for 20 existing cross drain culverts, and developed details for roadway widening from 20' to 24' with 4' shoulders. He analyzed and proposed slope conditions to ensure a uniform recoverable slope and calculated quantities for culvert extension, earthwork, riprap, and end treatments. He designed a special drop inlet in a difficult location tying four pipes together to improve drainage, slope conditions, and roadside safety.

TxDOT – FM 2264, Structure and Roadway Widening, *Fort Worth District, TX*

As project manager for this Fort Worth District project, Mr. Marlow designed details for regrading, base, drainage, roadway widening, vertical geometry and x-slope improvements, additional shoulders, existing structures, and additional safety end treatments. He reviewed accident data to locate accident clusters and make safety improvements, and recommended areas to use asphalt level-up to improve vertical geometry and super-elevation to meet design criteria, re-establish cross-slope, and improve roadway safety characteristics. He also designed extensions of existing cross drainage structures and added safety end treatments to improve roadside safety.

TxDOT – FM 1191, Structure and Roadway Widening, *Fort Worth District, TX*

As project manager for this Fort Worth District project, Mr. Marlow analyzed conditions and designed safety end treatments for 30 cross drain culverts and pipe structures. He widened and rehabilitated the roadway to provide a safer travel way. He designed roadside slopes and clear zones to ensure a safe vehicular recovery area. He calculated quantities for concrete, earthwork, flex base, sub-grade, and surface treatment.

TxDOT – FM 369 Drainage Ditch Enclosures and Increase of Roadway Capacity, *Wichita Falls District, TX*

As project manager for this Wichita Falls project, Mr. Marlow analyzed the hydraulic capacity and designed a multiple CBC extension to tie into the downstream segment of a critical existing drainage system. Challenges included close coordination of FEMA floodplain data with the City of Wichita Falls to ensure no adverse impacts to adjacent properties. Mr. Marlow performed all QA/QC before submittal, including calculating box culverts, riprap, hydrology, pavement, storm sewer, and earthwork quantities. Mr. Marlow analyzed all aspects of the project, including pavement and signals, to ensure all pieces fit together. One unique problem he analyzed and resolved was the lack of available area to accommodate the water. He designed and modified a multiple CBC system and required conventional forming techniques to best utilize the area to accommodate flows.

TxDOT – IH 35 East Horseshoe, *Dallas District, TX*

As TxDOT's project manager for consultant selection and contract procurement, Mr. Marlow successfully negotiated the level of effort estimate from \$27M to \$19M for the preparation of PS&E for the reconstruction of IH 35 East (north of Eight Street to north of IH 30), including the IH 30/IH 35 East interchange. Mr. Marlow was also responsible for overseeing all phases of PS&E development to the 30% level and coordinated the transfer of this project to Design Build in 2012. This Dallas District project included bridges spanning the Trinity River floodplain, which required intensive communication in coordination during environmental document development.

TxDOT – IH 820, Fort Worth District, TX

As project manager for this Fort Worth District project, Mr. Marlow was responsible for the preparation of preliminary geometric schematics, route studies, preliminary engineering, environmental documentation, public involvement, and PS&E for the reconstruction of the facility and interchange. He coordinated FHWA approval of the schematic and acted as project manager overseeing the development of PS&E.

TxDOT – IH 345, Dallas District, TX

As project manager for this Dallas District project, Mr. Marlow was responsible for overseeing and managing the development of a feasibility study for the rehabilitation of this IH 345 overhead freeway bridge. This unique exotic structure presented TxDOT with many unique challenges. Mr. Marlow was on a team charged with developing alternative analysis for the selection of an innovative approach for reconstruction and rehabilitation.

TxDOT – US 75, Dallas District, TX

This Dallas District project involved a corridor study, design schematic, environmental assessment, and public involvement through environmental clearance. Mr. Marlow was TxDOT project manager overseeing consultant management of all studies, analysis, schematics, NEPA, and environmental documentation.

TxDOT – FM 813, Roadway and Structure Widening, Ellis County, TX

As project manager for this Dallas District project, Mr. Marlow designed safety improvements, widened roadway and structures, extended structures, improved drainage and vertical geometry, and reestablished super-elevation in horizontal curves. Mr. Marlow worked with a University of Texas at Arlington research group, TxDOT Maintenance, TxDOT Area Office, and the local floodplain coordinator to investigate use of jack and bore technique to add capacity to x-drain pipe location where overtopping occurred, and analyzed hydraulic and safety impacts. This method improved the safety of traveling public and contractor forces, allowing structure construction without roadway closures or replacement phasing. Construction was accomplished under normal TCP phasing without undue traffic pattern interruption.

TxDOT – US 82 (West of FM 369 to Kemp), Wichita Falls District, TX

Mr. Marlow was TxDOT's design project manager overseeing all schematic design and plan development. This Wichita Falls District project consisted of the development of PS&E and geometric schematic for a freeway section approximately 10.5 miles long through Wichita Falls' urban area. This project included concrete pavement, as well as extensive roadway and pavement design elements. Mr. Marlow established horizontal and vertical alignments and determined appropriate design criteria. He designed and performed analysis of in situ soils to determine an appropriate design with an effective design life. He analyzed existing and proposed structures for hydraulic efficiency in the appropriate design flood. He analyzed features using existing conditions, since frontage roads were constructed for this freeway section in the late 1970s. He designed and detailed six pair of twin bridges crossing Lawrence Road, McNeil, Fairway Boulevard, Barnett Road, Allendale Road, and FM 639. He also designed and analyzed foundations.

Mr. Marlow also performed rehabilitation and widening of an existing BNSF railroad overpass with twin structures. He conducted two public meetings and applied public input to the geometric schematic, submitting it to TxDOT Design Division and the FHWA for approval. He worked with local developers and state, county, and railroad officials to determine the feasibility of a plan to extend the existing frontage road across the existing railroad. Additional responsibilities including design of illumination, multiphase TCP, SWPPP, and signing and striping.



DAN THOMA, P.E., LEED AP
Roadway Schematics

Education:

B.S. in Civil Engineering, University of Wisconsin-Milwaukee, 2002

Registration/License:

Professional Engineer, Texas No. 98622, 2006

Leadership in Energy and Environmental Design, Texas, 2009

TXDOT PRECERTIFICATIONS

- | | |
|---|---|
| 1.2.1 Systems Planning | 10.2.1 Roadway Hydraulic Design |
| 3.2.1 Route Studies & Schematic Design | 11.1.1 Roadway Construction Management and Inspection |
| 4.2.1 Roadway Design | 18.3.1 Utility Adjustment Coordination |
| 7.1.1 Traffic Engineering Studies | 18.4.1 Utility Engineering |
| 8.1.1 Signing, Pavement Marking, and Channelization | 18.5.1 Utility Construction Management and Verification |
| 8.3.1 Signalization | 18.6.1 Utility Management & Coordination Oversight |
| 9.1.1 Bicycle and Pedestrian Facility Development | |
| 10.1.1 Hydrologic Studies | |

BIO

With 19 years' experience in civil engineering, Mr. Thoma currently handles transportation and highway projects involving schematic, PS&E, traffic control plans, construction observation, scheduling, planning, utility design and coordination, tree preservation planning, water pollution abatement plans, and SWPPPs.

RELEVANT PROJECT EXPERIENCE

TxDOT – US 183A, Austin, TX

Mr. Thoma served as the project manager responsible for developing schematic and PS&E for 3 miles to add new capacity to this corridor roadway between Avery Ranch Boulevard and FM 1431 in Williamson County. He developed schematic alignments and identified alternatives; conducted traffic studies and simulations analyzing weaving patterns and ramp spacing; provided environmental documentation; identified ROW needs; and coordinated with utilities, railroad (CapMetro), and CTRMA to solve design issues including ramp alignments. The project scope included ramp alignments; access management; and bridge, retaining wall, and sound wall design. Mr. Thoma also coordinated with the hydraulic team to design and incorporate water quality basins into the corridor and coordinated with the Edwards Aquifer Authority and TCEQ.

TxDOT – US 83, Starr County, TX

Mr. Thoma served as project manager responsible for developing PS&E for this 10-mile corridor, widening the existing two-lane road to a four-lane divided roadway with median. He revised the schematic alignments; analyzed sight distance and traffic patterns to determine turn lane and turnaround lengths and locations; met with property owners to determine land use needs, locate driveways, and negotiate easements to provide

cut slopes into properties and eliminate the need to retaining walls at locations where feasible; provided drainage analysis; designed six bridges; provided environmental coordination for Environmental Assessment reevaluation; identified ROW and easement needs; and conducted utility coordination and agreements. The scope included a value engineering study, cost estimates, geotechnical studies (pavement design, retaining wall, and bridge), environmental coordination, utility coordination and engineering, mobile LiDAR and GPS surveys, geometric design, drainage design (bridges, scour analysis, culverts, open ditches, and storm drain), signing, pavement markings, traffic signals and flashing beacon assemblies, illumination, traffic control plan, and structural design (bridge and retaining wall).

Bexar County – Loop 1604 (Lower Seguin Road to IH 10), San Antonio, TX

As project manager, Mr. Thoma developed the PS&E to widen 3 miles of SL 1604 from two lanes to a divided four-lane roadway and incorporated a plan to expand to a future expressway. He developed PS&E, including critical traffic control for the project in this high-speed corridor, and drainage analysis for twin bridges within the Martinez Creek Dam 6A storage area.

TxDOT – FM 2147 Rehabilitation, Marble Falls, TX

Mr. Thoma served as the roadway lead for the intricate widening and reconstruction of FM 2147 from a two-lane narrow roadway to a two-lane roadway with a shoulder and bike lane to enhance safety and address bicycle community requests. This former rural area had quickly developed with an assortment of business and residential driveways. Urban criteria led the reconstructed of a portion of the roadway by removing the existing super-elevation to allow driveways to tie into the widened roadway without significant penetrations into private property or limiting driveway grades. The project required Mr. Thoma's coordination expertise in relocation, design of side road ditches and establishment of outfall easements. New drainage patterns also needed adjustment to remedy past improvements that ineffectively conveyed runoff. Utility relocation coordination was essential for water and overhead electric. Because the project was located within an active community, Mr. Thoma sought and obtained public input through several public meetings that included key discussions with county commissioners.

TxDOT – SH 29, Burnet, TX

Mr. Thoma was the project manager to develop PS&E to widen and add left turn lanes on SH 29 at CR 258 to reduce the chance for rear-end collisions and improve safety at this rural intersection. PS&E included pavement widening, retaining wall design, drainage analysis, SWPPP, signing, and pavement markings.

TxDOT – RM 3232 Rehabilitation, Johnson City, TX

As the project manager, Mr. Thoma provided the PS&E for a 6-mile rehabilitation from RM 2766 to US 290 in Blanco County. Improvements consisted of widening the roadway to a 28' total crown width and widening drainage structures. Services included roadway design, grading, paving, drainage, signing, pavement markings, TCPs, SWPPP, and cost estimates. Coordinating the TCP with the state, Mr. Thoma provided an approach to avoid or minimize utility adjustments.

TxDOT – SH 16 Rehabilitation, Kerrville, TX

Mr. Thoma served as roadway task lead to develop PS&E to rehabilitate pavement and increase safety (by adding Super two passing lanes) for 7-miles of this arterial within existing roadway ROW. He developed and coordinated a passing lane layout with two adjoining projects. His design included roadway alignment

verification, grading, culvert widening, and side-road ditch analysis realignment. Services included roadway and drainage design, floodplain analysis, a traffic control plan, roadway signing, striping, and utility coordination. The effort required the extension of existing drainage culverts where the road was widened since culverts could not be extended outside the clear zone. Mr. Thoma ensured applicable safety treatments (SETs or guardrail).

TxDOT – FM 2766 Rehabilitation, Johnson City, TX

As roadway task lead, Mr. Thoma developed PS&E to rehabilitate and widen 9 miles of RM 2766 from US 281 to RM 3232 with a full overlay. A portion of the project included full-depth reconstruction to eliminate a super-elevation section to tie the driveways into the properties that were lower than the road on the high side of the removed super-elevation section. Drainage structures were either replaced or lengthened, and relocation of side road ditches. Services included elimination of four low water crossings, widening of existing cross culverts, and safety improvements to driveway pipes.

TxDOT – FM 3180, Baytown, TX

As project manager, Mr. Thoma provided PS&E for a complete intersection reconstruction of this accelerated design schedule for the Beaumont District. The project originally started as a 2-mile widening, however, the scope changed during the 60% plan development to include an intersection only. A major scope change also occurred at the 90% phase to reduce the amount of intersection work within a 2-week turnaround to submit final plans to meet the letting date. Mr. Thoma handled both scope changes promptly by analyzing the schedule and budget impacts, through frequent discussions with the client, and by working within the existing work authorization to complete the changes on time and within budget. He conducted daily status updates and reviews to complete the scope change at 90%. Services included analyzing the level of service, roadway geometry, drainage, traffic control, traffic signal, signing, striping, and a stormwater pollution prevention plan, as well as cost estimates, specifications, and DCIS uploading.

TxDOT – US 75 Traffic Signalization and Ramp Reversal, Denison, TX

Mr. Thoma served as project manager responsible for PS&E of a ramp reversal project and additional improvements on a turnaround bridge on US 75. His design removed the existing entrance and exit ramps along northbound US 75 between Crawford Lane and Morton Street (FM 120), converting the ramps from a Diamond to an X-ramp layout. There was the installation of a continuous weaving lane along the frontage road between the exit and entrance ramps to increase safety. Also provided was safety lighting at each new ramp location in accordance with the TxDOT Illumination Manual. Construction of a new turnaround bridge from the north-bound to south-bound frontage road. Required modifications to the existing signal due to requested placement of ramps by the City of Denison. Mr. Thoma also coordinated with the City of Denison regarding architectural features, including rail type and color, stamping on the bents, and architectural lighting on the turnaround bridge. Other services included drainage analysis, design of storm drain and roadside ditches, signing and pavement markings, and traffic control.

City of San Antonio – Ray Ellison Boulevard, San Antonio, TX

Mr. Thoma served as the project manager for the preparation of PS&E to update two miles of Ray Ellison Boulevard from IH 410 to Old Pearsall Road, a densely populated area with schools. He converted Ray Ellison from a two-lane roadway to a four-lane section with traffic signals, LID features, storm drains, detention ponds, signing and striping, a stormwater pollution prevention plan, and traffic control. The utility design replaced water and wastewater mains and 9,600 LF of a 24" gas main, including directional bore design, and 300 LF of gas main adjustments to existing 4", 8", and 12" mains throughout the project. Mr. Thoma implemented the

QA/QC plan during design and at submittal milestones to oversee that design criteria were followed, quantities back checked, and conflicts found. Special attention was given to underground utility conflicts. Traffic control design consisted of maintaining a two-way roadway operation with turn lanes at critical intersections; included special details to keep critical intersections open during construction; and alternate materials and construction methods were used to close and quickly reconstruct other intersections. Mr. Thoma developed a pedestrian detour plan for each phase, including temporary sidewalks due to heavy pedestrian usage of school-aged children walking to two elementary schools and one middle school.

Bexar County/TxDOT – SH 211 (FM 1957 to FM 471), San Antonio, TX

Mr. Thoma served as the project manager responsible for developing schematic and PS&E for this new location roadway between FM 1957 and FM 471 in Bexar County. He coordinated with the project team, including subconsultants, for environmental documentation, ROW acquisition, and public meetings. The project included the design for a new alignment accommodating ROW and coordinating with environmental task leads on documentation for environmentally sensitive areas, including endangered species habitat. The corridor is approximately 7 miles and includes three bridges (totaling 530.5' in length) and 16 cross culverts. Mr. Thoma managed the topographic and boundary surveys, ROW acquisition and documentation, schematic design, environmental permits, traffic control, grading, culvert designs, bridge designs, driveway designs, and utility coordination.

Williamson County – Hero Way (US 183 to CR 269), Leander, TX

As project engineer, Mr. Thoma was responsible for developing PS&E for the new 1.1-mile four-lane roadway between US 183 and CR 269, including a turn lane extending approximately 829 LF along US 183. He developed alignments; identified ROW needs; and coordinated with utilities, railroad, and CTRMA. He also coordinated with Pape-Dawson's hydraulic team to design and incorporate water quality basins into the corridor.

Alamo Regional Mobility Authority – Foster Road Design, San Antonio, TX

Mr. Thoma served as the project manager for 1.5 miles of roadway reconstruction. During project development, numerous new developments appeared, including two businesses, two phases of a residential development, an HEB distribution center, and a fire station. He worked with all developments to incorporate their designs, acquire donated ROW for the roadway project, and ensure all parties' design needs were met, including installation of a traffic sign to incorporate the ultimate roadway configuration, placement of fire station flashing beacons, establishment of driveway locations, and incorporation of the overall drainage plan from all developments. Mr. Thoma also provided traffic forecasting and modeling; alternative analysis; utility coordination; ROW acquisition and negotiations; environmental clearance; drainage studies and design; schematic design; and signal, roadway, traffic control, and signing and striping design.

FM 1103 Turning Stone, San Antonio, TX

Mr. Thoma was the project manager for PS&E, bidding, and construction phase services to widen a two-lane TxDOT high speed minor arterial to add a two-way left-turn lane and right-turn lanes into a newly developed subdivision. The scope of work included traffic control to maintain safe work zone in tight, high-speed ROW, sight distance safety evaluation (including placing intersection in the vicinity of a substandard vertical curve on FM 1103), roadway design (including our design with the ultimate six-lane project TxDOT was developing in house), drainage analysis (hybrid open ditch and closed system design and cross culvert extension), signing, pavement marking, stormwater pollution prevention plan, and utility coordination.



BRIAN ALLEN, P.E., CFM
Roadway Support

Education:

B.S. in Civil Engineering, Texas A&M University, 2011

Registration/License:

Professional Engineer, Texas No. 123374, 2016

Certified Floodplain Manager, Texas No. 3283-17N, 2017

TXDOT PRECERTIFICATIONS

3.2.1 Route Studies & Schematic Design

4.2.1 Roadway Design

4.4.1 Freeway Interchanges

4.5.1 Constructability Review

4.6.1 3-D Design Visualization Services

10.1.1 Hydrologic Studies

10.2.1 Roadway Hydraulic Design

10.3.1 Bridge Hydraulic Design

BIO

Mr. Allen has 8 years of civil engineering experience as project engineer and project manager, from planning phase through construction. He consistently develops high-quality roadway design, 3D design, construction phasing, traffic control, drainage design (including storm sewer, hydrologic modeling, and culvert and bridge hydraulic modeling), utility coordination, ROW coordination, environmental design, and railroad coordination. Mr. Allen has extensive experience using Microstation OpenRoads 3D corridor modeler to develop geometric designs for rural and urban roadway reconstruction projects, including 3D visualizations for stakeholders/public meetings.

RELEVANT PROJECT EXPERIENCE

Williamson County – SH 29 at Bluebonnet, Georgetown, TX

As project manager, Mr. Allen developed plans for the construction of roadway widening for right-turn deceleration lanes and left turn lanes, storm sewer improvements, new signal installation, signing and striping, and traffic control. Part of the plans incorporated with TxDOT SH 29 widening plans already in development. He coordinated with TxDOT, Williamson County, and TxDOT's engineering consultant to develop supplemental plan sheets that seamlessly incorporated into the plan set, as well as developing separate donation agreement documents. Improvements included two right turn deceleration lanes, approximately 500 LF each, with full depth HMA pavement construction, curb and gutter, sidewalk, and curb ramps. Widening the existing roadway for the right turns required capping existing storm sewer curb inlets and relocate them to the new edge of pavement. He did a full H&H analysis to determine roadway ponding and inlet capacity to determine optimal placement of the proposed inlets. Hydrologic analysis was also performed on the existing SH 29 storm sewer to ensure additional impervious runoff was detained sufficiently that there would be zero impacts to the existing system.

The traffic signal was designed around the proposed roadway layout and allowed for potential future turn lanes. Signal design were based per TxDOT Austin District design criteria and standards. Signal elements included flashing yellow permitted left turn signal heads, pedestrian push button pole assemblies, and radar advance and presence detection devices.

Mr. Allen coordinated with Pape-Dawson's environmental services group to develop a hazardous materials site assessment, community impact analysis, archaeological resource coordination, and vegetation impacts analysis. He coordinated with TxDOT and Williamson County for PS&E, cost estimates, project management, and construction phase services.

TxDOT – SH 36 Segments 11-12, West Columbia, TX

Mr. Allen was project manager responsible for designing PS&E for 7 miles of roadway widening from a two-lane rural section to a four-lane divided rural freeway. Mr. Allen's responsibilities included geometric roadway design, 3D design, overpass bridge and ramp design, signal design, two creek bridge crossings and four wildlife bridge crossings, roadside ditch and storm drain development, retaining wall layouts, HEC-HMS 2D floodplain analysis, three detention basin designs, H&H reports, utility coordination and joint bid utility design, more than 200 driveways, ITS coordination and design, ROW acquisition, signals, and signing and striping.

Unique environmental coordination was required to address the needs of USFWS when they acquired a large portion of adjacent ROW in the middle of design development, and created a wildlife preserve. Mr. Allen served as liaison between USFWS and the State to organize meetings and develop a strategy for the project to continue through the middle of the preserve while minimizing impact to wildlife. Mr. Allen developed a design modification to add four wildlife crossings to the project that would allow the preserve to function as a contiguous property and allow for safe wildlife crossing locations vertically separated from traffic. Strategically placed bridge locations were to minimize the need for roadway redesign, and where there was significant vegetation for wildlife. This minimized cost to the project design budget, time lost to the design schedule, and expedited coordination with USFWS by meeting environmental requirements.

Mr. Allen developed a continuous storm sewer design that conveyed off-site water to detention basins or underground storage. Mr. Allen's team then developed water and wastewater alignments to replace the City of West Columbia's outdated system that conflicted with proposed improvements. Mr. Allen coordinated with the remaining telecom, power, and gas utilities to develop corridors for utility easements within the newly acquired ROW.

Because this project required nearly double the ROW as currently existed for the corridor, over 200 ROW parcel acquisitions were required for this segment of the project. Mr. Allen coordinated with the State and their lawyers and appraisers to develop exhibits for each parcel and analyze site traffic circulation. He also served as an expert witness and testified in Special Commissioner Court hearings.

TxDOT – US 62/180 Montana Avenue, El Paso, TX

Mr. Allen served as project engineer responsible for assisting in the schematic design, construction phasing, and storm drain design to expand 8 miles of Montana Avenue from a divided uncurbed highway to a grade separated full freeway section with overpasses, frontage road, direct connect interchange bridges, and storm drain. The project, located in flat terrain, is functionally classified as a major arterial and is being designed to TxDOT Roadway Design Manual 4R Standards with a design speed of 70 mph. Mr. Allen developed staged construction phasing and traffic control schematic design. Using traffic projections, he split the project into multiple phases to make best use of projected available funds while minimizing user delay. Traffic control design elements included temporary signals and pavement to create a temporary restricted crossing U-turn configuration during the construction of proposed turnaround and overpass bridges. Using this innovative approach, Mr. Allen's design maintained existing access to frontage road property throughout every phase of construction while minimizing disruption to the traveling public.

TxDOT – North New Braunfels Avenue at Austin Highway, *San Antonio, TX*

As deputy project manager, Mr. Allen designed PS&E to construct roadway widening, dedicated right-turn slip ramp, pedestrian and bike access improvements, and signal replacement. Mr. Allen's responsibilities included geometric roadway design, 3D design, traffic control, utility phasing and coordination, drainage, and storm drain design, and signing and striping. Utility upgrades to the intersection included replacing aging sewer and gas lines, removing overhead telecom and electric from poles, and relocating underground.

The existing intersection did not allow southbound right-turns due to the severe approach angle of the intersecting roadways and steep grades. Mr. Allen developed a solution to add a dedicated right turn slip ramp that met roadway design criteria, increased access, and improved the overall safety of operations at the intersection. He also developed plans to remove and replace the existing storm sewer system to accommodate the intersection widening and new ramp construction.

Mr. Allen assisted in developing plans to completely replace the existing signal with new mast arms, signal heads, pedestrian push buttons and poles, and radar-controlled detection devices. He was able to coordinate with the City of San Antonio and TxDOT to restripe the lane usage and modify signal phasing to significantly improve operations, resulting in reduced driver delay and storage requirements.

Mr. Allen developed a detailed multi-phased construction sequencing plan that maximized safety and minimized construction duration by coordinating roadway construction with utility and storm drain installation. He coordinated with AT&T, SAWS, CPS Energy, and TxDOT during design and construction to ensure the resolution of all utility conflicts between all disciplines as quickly and accurately as possible. Traffic control plans were modified prior to letting to allow for sewer line testing requirements, gas line tie-ins, and overhead electric relocations that successfully resulted in no long-term service interruptions to surrounding properties.

City of San Antonio – Broadway Road, *San Antonio, TX*

As project engineer, Mr. Allen developed a roadway retrofit schematic for the City of San Antonio for over 2 miles of the downtown Broadway St corridor. The project included roadway widening and reconstruction, median construction, on-street parking, and pedestrian and bike shared use paths in an urban downtown corridor. He designed multiple roadway sections and developed alternatives as part of a planning and development tool for planning purposes. To aid in the Public Involvement and stakeholder coordination process, Mr. Allen developed 3D visualization models for each alternative.

Mr. Allen developed preliminary geometry using Bentley ConceptStation software, allowing the design team to immediately obtain aerial, terrain, watershed, and roadway data. This data is then cross referenced with available survey data and revised to a preliminary design level acceptable for constructing a conceptual visualization. This geometry went into OpenRoads 3D and built each design alternative using roadway templates developed for each design alternative. Mr. Allen exported the proposed mesh containing all design elements to LumenRT to build a final visualization model.

VISSIM software developed the traffic modeling with existing and projected traffic volumes. To confirm accuracy of the traffic visualization he used the 3D Openroads model to export the geometrics. This data developed 3D traffic simulations for each design alternative and imported directly to the LumenRT visualization models resulting in an accurate representation of the traffic flow in each model.

Unique project goals included developing a design solution for dedicated bike lanes, multimodal access, on street parking, and pedestrian facilities to fit in the corridor. Mr. Allen developed 3D visualization images and videos for use at public and stakeholder meetings to convey how the transit modes would affect each other in the narrow corridor. Property and business owners concerned with aesthetics and access could easily see final product rather than relying on design plans and schematics. Mr. Allen's 3D videos clearly convey traffic queuing and provide the ability to show driving times in side by side video comparisons.

Bexar County/TxDOT – SH 211 (FM 1957 to FM 471), San Antonio, TX

As project engineer, Mr. Allen developed schematic and PS&E for 6 miles of new rural freeway in western Bexar County. His responsibilities included geometric roadway design, signal design, drainage design and hydraulic reports, bridge layouts and modeling, traffic control, environmental coordination, public involvement, and signing and striping. He designed 12 culvert crossings and two bridges for Potranca and Medio Creeks, including geometric layouts, hydrologic evaluation, hydraulic modeling, scour analysis, and scour mitigation design.

Mr. Allen developed signalized intersection designs at the north and south tie-ins with Potranco Road and Culebra Road. Roadway improvements included widening the existing roadways to accommodate right and left turn lanes, installing new signal mast arms and ped poles, pedestrian access, and modified signing and striping. He developed detailed 3D roadway models at the proposed intersections to ensure proper drainage of the new pavement, and to identify subsurface conflicts utility and drainage with proposed roadway and signal elements.

After attending multiple public meetings and presenting the design to the public, Mr. Allen developed measures to reduce impact on adjacent properties, including designing a pedestrian underpass rather than a costlier bridge, as well as designing carrier pipe crossings and obtaining required utility permits for adjacent property owners' irrigation waterlines to cross the proposed ROW. It was necessary to acquire all required ROW because this was a new roadway. Mr. Allen developed an alignment and identified required ROW for the proposed roadway section with potential for future expansion. He assisted in development of ROW documents and exhibits, and coordinated with survey, County, TxDOT, and landowners in the development of a ROW map that satisfied the needs of the project, while minimizing environmental and noise impacts to adjacent properties.

Bexar County – Potranco Road (Loop 1604 West to SH 211), San Antonio, TX

Mr. Allen served as project engineer in the design to expand 6 miles of Potranco Road from a two-lane rural roadway to five-lane urban corridor. Design elements included six signalized intersections, continuous storm drain with curb and gutter, retaining walls, and one bridge. The project, located in rolling terrain, is functionally classified as a minor arterial and is being designed to TxDOT Roadway Design Manual 4R Standards with a design speed of 45 mph.

Mr. Allen developed six independent storm drain systems comprised of 250+ inlets; 20,000 LF of trunk lines and laterals; and multiple bridge class outfall structures. Due to unique construction phasing, they first built some segments of the storm drain within the existing pavement section. Cut and restored pavement sections, along with temporary lane closures and barrier, were used for safety and efficiency.

Mr. Allen also developed a traffic control design including detour layouts, intersection phasing, temp signing and striping, temp widening, temp drainage, and phasing the construction into three segments to reach specific milestones. Mr. Allen developed detailed plans to minimize construction durations including special shoring layouts, temporary earth walls details, and temporary signal layouts. Special phasing layouts were developed for Caracol Creek Bridge, Medio Creek Bridge, and Potranca Creek Culvert detailing how temporary drainage would be handled during the construction of structural items within the floodplain.

TxDOT – FM 89 (US 83 to Chimney Rock Road), Abilene, TX

As project engineer, Mr. Allen led the traffic control and construction phasing design to expand a 1.1-mile densely urbanized segment of FM 89 from a five-lane continuous turn lane section to a seven-lane curb and gutter section with continuous concrete median and channelized left turns. Project elements included continuously reinforced concrete pavement, open ditches, reinforced concrete pipe and multiple box culvert storm drain, four signalized intersections, and continuous roadway illumination. concrete box culvert trunk line segments.



VALERIE COLLINS, AICP
ENVIRONMENTAL SUPPORT

Education:

M.S. in Wildlife Biology, Stephen F. Austin State University, 2001
B.S. in Wildlife Biology, Stephen F. Austin State University, 1997

Registration/License:

American Institute of Certified Planners, No. 027429, 2015
Federal Fish & Wildlife Permit, No. TE205717-2, 2008
TPWD Scientific Research Permit, Texas No. SPR-0509-086

TXDOT PRECERTIFICATIONS

- | | |
|--|--|
| 1.8.1 Public Involvement | 2.6.4 Biological Evaluations/Assessments |
| 2.1.1 Traffic Noise Analysis | 2.7.1 Sec. 4(F)/6(F) Evaluations |
| 2.3.1 Wetland Delineation | 2.12.1 Socio-Economic and Environmental Justice Analyses |
| 2.4.1 Nationwide Permit | 2.13.1 Hazardous Materials Initial Site Assessment |
| 2.4.2 Clean Water Act Sec. 404 Permits | 2.14.1 Environmental Document Preparation |
| 2.6.2 Impact Evaluation Assessments | |

BIO

Ms. Collins has more than 20 years of experience as an environmental and NEPA specialist and wildlife biologist, 11 of which have been with Pape-Dawson. She designed the only USFWS-approved endangered species preserves and management and maintenance plans for the recovery of karst invertebrates in the San Antonio area. She specializes in NEPA and natural resources compliance, responsible for overseeing the implementation of full environmental compliance (NEPA, endangered species, noise, air, socioeconomic, hazardous materials, Phase I/II site investigations, cultural resources, karst geology, and water resources) within public and private sectors. She has conducted numerous formal/informal Endangered Species Act Section 7 consultations with the USFWS. Ms. Collins specializes in working with the Clean Water Act Section 404 permitting process, including individual permitting, mitigation, and monitoring. A former TxDOT environmental specialist for 5 years, Ms. Collins was appointed to the Environmental Committee to develop environmental document standards and served as interim Regional Environmental Coordinator. She is an experienced NEPA practitioner and holds a USFWS permit to research endangered species across Texas. Through TxDOT schematic contracts and as project manager for local government and utility environmental services contracts, Ms. Collins has orchestrated agency approvals and completed legal documents for numerous infrastructure projects, using carefully selected resource experts, on-time, within budget, and with full QA/QC.

RELEVANT PROJECT EXPERIENCE

Williamson County Parks and Recreation – Brushy Creek Regional Trail Categorical Exclusion, Round Rock, TX

Ms. Collins led the environmental team for the 1.1-mile Brushy Creek Trail shared-use path in Williamson County. She coordinated with TxDOT and USFWS to receive concurrence with a “May Affect, Not Likely to Adversely Affect” determination for impacts to multiple federally listed species, including the Jollyville Plateau salamander and impacts to karst terrain. Capital Area MPO with an AFA funded this project and

required TxDOT LGPP environmental procedures. Her project management responsibilities include: directing a constraints review of the trail and boardwalk and pedestrian bridge designs across Brushy Creek, serving as mediator between prime consultant and ENV/USFWS during heated debates about detail of information required and necessity of avoidance and minimization measures, and reviewing the numerous construction easements acquisitions required. She led the team to develop avoidance and minimization measures and conducting QC of multiple sources of survey data to ensure rapid agency approval of trail design across waters of the U.S. within endangered karst invertebrate and salamander habitat and critical habitat. Ms. Collins immediately initiated a conference call with the project engineer, ENV, and the District, and rallied the team to a course of action for obtaining USFWS concurrence. She expedited concurrent salamander and archaeological surveys, worked with district staff to obtain de minimus 4(f) exceptions, and managed project certification on time and on budget.

Williamson County – Hero Way (US 183 to CR 269) Categorical Exclusion, *Leander, TX*

Ms. Collins was the environmental project manager for a state categorical exclusion completed for a roadway project at the intersection of US 183 and CR 2243, funded by the City of Leander and Williamson County. The project included construction of a turn lane extending approximately 829 LF along US 183, including a tie-in in the US 183 ROW for the future CR 269. Ms. Collins wrote a NEPA document, including Need and Purpose, socioeconomic analysis, cultural and natural resources investigations, noise and air quality impacts analysis, and hazardous materials investigations.

Bexar County/TxDOT – SH 211 (FM 1957 to FM 471) Environmental Assessment and Section 7 Consultation in Critical Habitat, *San Antonio, TX*

Ms. Collins managed production and coordinated approval of an environmental assessment for a new two-lane, 7.6-mile TxDOT roadway. She directed critical path analysis of challenging and potentially controversial environmental issues, including visual, community, and noise impacts, associated with taking the roadway through an existing neighborhood, and critical habitat for threatened and endangered species in a rapidly urbanizing area. She garnered critical community support by directing stakeholder meetings to gather feedback on project alternatives and features that informed team engineers in designing a publicly accepted preferred alternative. She orchestrated a public information plan including posting a project website and leading a series of phased MAPOS and public meetings and hearings. As manager and endangered species expert, she directed karst studies to find the least impactful route through CH while avoiding impacts to adjacent commercial and residential developments and a cemetery. While Ms. Collins managed production and QC of Section 7 consultation documents, she simultaneously contracted with area landowners for design and permitting of recovery-level mitigation preserves, which resolved USFWS approval concerns expeditiously at no additional expense to TxDOT. FONSI was obtained several months prior to construction.

Bexar County Flood Control Division – Environmental Services, *San Antonio, TX*

As project manager, Ms. Collins provided professional environmental services, including conducting resource impacts investigations; setting schedules; and providing progress reports, permit direction, and guidance for jurisdictional waters determinations and delineations, karst terrain walk-throughs, geologic assessments, endangered species investigations, and cultural resources assessments. Her projects included: Bulverde Road and Jung Road Low-Water Crossing Improvements at Mud Creek; Cimarron Subdivision Channel Improvements Associated with Martinez Creek Dam No. 4; Hausman Road Drainage Improvements to Maverick Creek; and Science Park Drainage Improvements at Four Crossings of Zarzamora Creek.

City of San Antonio – Golden-Cheeked Warbler Habitat Assessments and Surveys,*San Antonio, TX*

Ms. Collins served as environmental manager for golden-cheeked warbler habitat surveys under a City of San Antonio contract to determine potential or unlikely habitat on all City park lands. Her services included field investigations, habitat modeling, mapping and data management, final reports, presentations to the City, habitat management plans, and negotiation of mitigation credits.

Central Texas Regional Water Supply Corporation – Vista Ridge Regional Water Supply Project, Bexar to Burleson Counties, TX

This project includes constructing a 140-mile 60" pipeline to carry potable water from Burleson County to Bexar County. The width of the alignment varies by location, with the majority of ROW being either 85' or 50'. Ms. Collins supervised a field evaluation of potential endangered species habitat and waters of the U.S. along the length of the proposed alignment. She also managed cultural resources investigation by subconsultant, and Phase I ESA investigations on roughly 450 parcels. She submitted a pre-construction notice to USACE, which included a biological assessment for an informal Section 7 consultation with the USFWS for the endangered Houston toad, karst invertebrates, and golden-cheeked warbler, as well as Section 10 permitting for impacts outside of the USACE permit action areas.

Stonewall Estates Section 7 Consultation, San Antonio, TX

This formal consultation was to address the potential for impacts to golden-cheeked warbler (GCWA), black-capped vireo, and karst invertebrates associated with a residential subdivision and stream impacts. The project area is known for its high quality GCWA habitat adjacent to Friedrich Park. Working with the USFWS and USACE, Ms. Collins conducted surveys for GCWA, BCVI, and karst invertebrates, wrote the biological assessment, and obtained a biological opinion. In conjunction with survey, supplemental assessment approval for project description change, and permitting efforts, her team carried out brown-headed cowbird trapping with a goal of 10% or less nest parasitism or fewer than 50 cowbirds trapped in a single trap in one season, and she facilitated the addition of over 60 acres to the adjacent park.

TxDOT – Landa Park Bridge Replacement CE and Section 7 Consultation, Comal County, TX

Ms. Collins served as environmental project manager responsible for confirming compliance with all applicable environmental laws for a project in Landa Park in New Braunfels. This project widened a structurally deficient bridge in a community sensitive to historic aspects of the park. The project was in a known location for a federally endangered fish, the fountain darter. Ms. Collins performed surveys for fountain darter habitat and associated aquatic vegetation. She conducted formal Section 7 consultation with USFWS Austin Ecological Field Services Office, resulting in a biological opinion from the USFWS. Ms. Collins also assisted contractors with adherence to the environmental specifications detailed in the project plans and the biological opinion from the USFWS.

City of San Antonio Bond Project – Bulverde Road (Loop 1604 to Evans Road), San Antonio, TX

Ms. Collins served as environmental manager for the City of San Antonio project to widen Bulverde Road from two to seven lanes through the Edwards Aquifer Recharge Zone. Although NEPA documentation was not required, Ms. Collins conducted Section 404 jurisdictional waters determinations, cultural resources investigations, TCEQ permitting, karst terrain features surveys, endangered species investigation, USACE consultation, and an alternatives analysis to avoid or minimize impacts to an endangered species. She

consulted with the USFWS regarding potential impacts to *Rhadine exilis*, an endangered ground beetle purported to exist within the cave beneath Bulverde Road and CH Unit 13. Investigations included presence and absence surveys for the listed beetle; water sampling and testing by spectrophotometry, ion selective electrodes, and wet chemistry method; temperature and humidity monitoring; and geophysical surveys to move the project forward on time and on budget.

VIA – Centro Plaza (Formerly Westside Multimodal Transit Center), San Antonio, TX

As a subconsultant, Ms. Collins served as environmental project manager responsible for the preparation of an EA for the addition of the 2.1-acre Centro multimodal transit plaza adjacent to a planned bus facility cleared by Federal Transit Authority (FTA) under an environmental assessment (EA) for the VIA Primo Bus Rapid Transit project. She managed and performed the preparation of the EA, a noise/vibration technical report, land use impact analysis, environmental justice impact analysis, hazardous materials assessment, *de minimis 4f* for changes to a historic building and acequia, and summary reports for public involvement conducted. She also prepared the draft FONSI signed by the FTA.

La Cantera Invertebrate Conservation Areas/La Cantera Development Karst Preserve Plans and Management – Section 10 USFWS Permit, San Antonio, TX

Ms. Collins served as environmental project manager to prepare and develop the Karst Management and Maintenance Plans for several karst preserves in Bexar County, as well as and execute activities outlined in the habitat conservation plan for endangered karst invertebrates on these preserves. These karst preserves were the first to be established in Bexar County.

Bexar County – Shaenfield Road (Loop 1604 to FM 1560), San Antonio, TX

Ms. Collins served as environmental manager for a Phase I ESA, jurisdictional delineation, and Pre-Construction Notification to USACE for obtaining verification to use a Nationwide Permit 14 for impacts to wetlands for this linear roadway widening project. The project included on-site wetlands mitigation using only existing resources. She obtained the permit from USACE 45 days from the beginning of field work.

Austin Highway and New Braunfels Avenue Environmental Assessment, San Antonio, TX

Ms. Collins was project manager for this intersection reconfiguration project at New Braunfels Avenue and Austin Highway that involved abandonment of portions of TxDOT ROW and dedication of ROW from the historic McNay Art Museum to the City of San Antonio. Storm sewer and multiple utility relocates were required. When a last minute ROW dedication was changed from TxDOT to City of San Antonio, Ms. Collins mediated discussions between City of San Antonio environmental staff/attorneys and McNay attorneys concerning hazmat concerns regarding dedication to each entity of median area where Exxon LPST was removed in 2003 and to avoid potential 4(f) issues. She managed the technical team for TCEQ file review, geotechnical report, and grading plan reviews to resolve this issue. She also provided karst endangered species technical report management. Ms. Collins directed a review of proposed plans and analysis of roadway and utility as-builts to establish baseline versus proposed impacts to subsurface to secure TxDOT approval.

Quintana Road Widening and Drainage NEPA Documentation, San Antonio, TX

Ms. Collins served as the environmental project manager for this road widening and drainage project. She managed environmental compliance and produced NEPA documentation, navigating the ever-changing regulatory process, securing permits, and ensuring compliance with applicable laws during construction.



RUBEN GAZTAMBIDE-VELEZ, RPLS, PS, CP

Survey

Education:

B.S. in Civil Engineering, Purdue University, 2007

B.S. in Land Surveying and Mapping, Polytechnic University of Puerto Rico, 2004

Registration/License:

Registered Professional Land Surveyor, Texas No. 6043, 2008

FAA Remote Pilot Airman, 2020

Certified Photogrammetrist, Texas No. 1620, 2017

TXDOT PRECERTIFICATIONS

15.1.1 Right of Way Surveys

15.2.1 Design Survey

15.2.2 Construction Survey

15.3.1 Aerial Photogrammetry

15.3.2 Terrestrial Photogrammetry

15.3.3 Terrestrial LiDAR

15.3.4 Mobile and Airborne LiDAR

15.3.5 Horizontal and Vertical Control

BIO

Mr. Gaztambide-Velez has over 20 years of experience in land surveying in a wide range of markets from transportation for states, cities and counties, railway, water/wastewater, electric transmission and distribution and construction, midstream oil and gas and as-builts, to residential and commercial development projects and high-rise construction. For the past 12 years he has been responsible for a wide range of transportation projects (highway and rail) including ROW, topographic and design surveys, mobile LiDAR, high accuracy aerial LiDAR surveys from both manned and unmanned platforms, high definition laser scanning projects, deformation monitoring, planning of GPS control networks and control for conventional surveying, photogrammetric and airborne LiDAR surveys for clients such as city, county and state governments in Texas as well as nationwide. Mr. Gaztambide-Velez pioneered the integration and use of multiple technologies, and when utilized allow projects to be completed faster and safer, while still producing survey grade data. His responsibilities include preparing project scopes, negotiating budgets, scheduling, overseeing field and office personnel, terrestrial laser scanning, mobile and airborne LiDAR, boundary analysis and retracement, quality control, professional certifications, and providing estimates.

RELEVANT PROJECT EXPERIENCE

Williamson County – Teravista Pavement Survey, *Williamson County, TX*

Mr. Gaztambide-Velez was project manager for this pavement condition survey concerning all public roads within the Teravista subdivision. The project consisted of setting three permanent survey monuments used for future project monitoring. From these monuments, targets were set and surveyed using RTK survey methods to calibrate all collected mobile mapping data. The mobile mapping data was then cleaned, and a tight grid of points was generated, and curbs extracted. Using this data, Mr. Gaztambide-Velez produced a contour map showing the pavement deformations within the roads which was presented to the county.

City of Austin – East Sixth Street Streetscape Improvements Design Survey, Austin, TX

As project manager, Mr. Gaztambide-Velez was responsible for a design survey of the project area, including side streets that extend one block north and one block south of Congress along San Jacinto, Trinity, Neches, Red River and Sabine Streets. The project included widening sidewalk and related pedestrian facilities, roadway paving, and enhancing other transportation related features. Mobile LiDAR was used to collect survey-quality point data quickly and accurately. In doing so, Mr. Gaztambide-Velez was able to collect survey-grade data in a fraction of the time it would have taken conventional surveying methods. Topographic survey information was extracted from the robust point cloud, combined with tree identification, and delivered in Autodesk Civil 3D using the City of Austin's ESD CADD Standards, drawn on the appropriate level and in the format required by the city.

City of Austin – Congress and Riverside Streetscape Improvement Mobile Mapping Design Survey, Austin, TX

Mr. Gaztambide-Velez was project manager for a design survey of project area from 11th Street on the north and continuing south to the intersection with Riverside Drive, including the section of Barton Springs Road from South Congress Avenue to West Riverside Drive. The project included a full topographic and planimetric map of Congress, Barton Springs and Riverside as well as utility location, manhole inverts and tree locations within the project limits. The resulting dataset would be the base of the design of future upgrades to these corridors. All data was processed and delivered in Autodesk Civil 3D using the City of Austin's ESD CADD Standards, drawn on the appropriate level and in the format required by the City.

City of San Marcos – Mobile LiDAR Survey for Capital Improvements, San Marcos, TX

As the geospatial project manager, Mr. Gaztambide-Velez was responsible for surveying of areas to be used as the basis of design for future capital improvement projects within the downtown San Marcos area. He set survey controls, collected mobile LiDAR data within the specified roadways and provided a 2D planimetric and 3D Digital Terrain Model drawing derived from mobile LiDAR and conventional surveying, and provided a 360-degree video of the subject corridors in a video mapping application. Additionally, Mr. Gaztambide-Velez helped the City of San Marcos adopt a CAD standard since they did not have a standard one at the time.

Mobile Mapping for Pavement Re-design of Hester's Crossing and La Frontera, Round Rock, TX

This project consisted of a design survey of approximately 1.91 miles of roadway for the purpose of pavement redesign. As a project manager, Mr. Gaztambide-Velez was responsible for scheduling and overseeing the field mobile mapping and conventional survey data collection operations as well as the office extraction of 3D breaklines, 2D planimetric features, visible above ground utilities, and coordination of the SUE QL-D, QL-C, and QL-A services for the project.

TxDOT – FM 1585 Aerial LiDAR, Lubbock, TX

As the geospatial project manager, Mr. Gaztambide-Velez was responsible for providing levels of aerial photography acquisition for engineering projects with transportation features. He acquired a photogrammetric quality vertical aerial film or digital image used as the basis for a ground controlled post-processed aero-triangulation solution with limited leaf-off flying seasons. Mr. Gaztambide-Velez also acquired photogrammetric quality vertical aerial film or digital image using on-board real-time navigation system to establish aerial image positions and orientation parameters and utilizing minimal ground control. He used airborne, static or mobile equipment in which firm produced digital elevation models using remote sensing techniques.

TxDOT – Mobile and Helicopter LiDAR Mapping and Conventional Surveying, Travis, Williamson, and Hays Counties, TX

As project manager, Mr. Gaztambide-Velez was responsible for planning control layouts, scheduling the surveys, planning and executing a LiDAR data acquisition for 55 miles and bridges on this project. Data was acquired using helicopter based aerial LiDAR and imagery and mobile LiDAR technology. Data extraction was performed using a mix of traditional photogrammetry, aerial LiDAR and mobile LiDAR. Mr. Gaztambide-Velez oversaw the field and office operations for the entire project and ensured best practices were used on all operations.

CTRMA – MoPac Improvement Design-Build Aerial LiDAR, Austin, TX

As project manager, Mr. Gaztambide-Velez was responsible for planning survey control as well as planning and executing field aerial LiDAR and imagery acquisition and managing the office production of deliverables. He acquired helicopter based aerial LiDAR and imagery within the corridor. The LiDAR was acquired at a nominal density of 50 points per square meter and the imagery at a nominal pixel resolution of 3" GSD. All data was then calibrated to control and test for accuracy. From this, Mr. Gaztambide-Velez was able to generate a final planimetric and topographic map within the project limits to be used as the basis for the design and build of the North MoPac segment from Town Lake to Parmer Lane. All design files were delivered in MicroStation and GEOPAK.

CTRMA – South MoPac and Slaughter Aerial LiDAR, Austin, TX

Mr. Gaztambide-Velez was the project manager responsible for planning survey control, planning and executing field aerial LiDAR and imagery acquisition, and managing the office production of deliverables. He acquired helicopter based aerial LiDAR and imagery within the corridor. This project consisted of two individual but overlapping sections of MoPac. The LiDAR was acquired at a nominal density of 50 points per square meter and the imagery at a nominal pixel resolution of 3" GSD. All data was calibrated to control and test for accuracy. From this, Mr. Gaztambide-Velez generated a final planimetric and topographic map within the project limits and delivered in MicroStation and GEOPAK.

TxDOT – SH 349 (Midland/Martin County Line to SH 137) Aerial LiDAR Acquisition, Midland, Martin, and Dawson Counties, TX

Mr. Gaztambide-Velez served as terrestrial scanning task leader, and was responsible for conventional surveying, HDS scanning, and helicopter LiDAR along the 48 miles of SH 349 corridor. The project also included 3 miles of cross flights for designing several roadway improvements within the project limits. He used the helicopter mapping system to survey this 200' corridor, afterwards performing the point cloud calibrations and extracting 2D and 3D data. The aerial and HDS LiDAR data were merged with the conventional surveying data collected to create a unified 2D planimetric drawing as well as a 3D DTM and TIN.

TxDOT – IH 35 (Hays County Proposition 12 Projects) Mobile LiDAR, Hays County, TX

As survey and mobile LiDAR project manager, Mr. Gaztambide-Velez was responsible for managing the mobile LiDAR field and office operations. He was also responsible for planning and surveying mobile LiDAR control and collecting, calibrating, and extracting survey grade topographic and planimetric data from the calibrated point clouds for the design of new on- and off-ramps, widening of existing overpasses, design of new overpasses, and design of new managed lanes along the IH 35 corridor.

Ohio Department of Transportation – HAM 71 Survey Aerial and Mobile LiDAR, Cincinnati, OH

Mr. Gaztambide-Velez served as geospatial project manager responsible for mobile LiDAR for a 15-mile stretch of Interstate IH 71 in Hamilton County in support of several minor rehabilitation projects along with some limited bridge work. He provided complete mapping (DTM, Planimetric, and Orthophoto) in accordance with the ODOT mapping and surveying specifications. This data collection effort was a “Pilot” to be used solely to investigate the option of collecting future transportation asset inventories utilizing the above mentioned technology, which included DTM Accuracy Class A on pavement, Class B on vegetated surface outside of pavement within the public ROW, Class C in vegetated areas not maintained, and Class D in areas where vertical accuracy is not critical or warranted.

He also performed planimetric data collection, ground control survey, DTM accuracy testing, planimetric detail accuracy testing, and quality control. Final data was delivered in MicroStation compatible computer files. Data collection included the corridor as marked plus ramps at interchanges and provided an inventory of specific roadway assets, roadside features, and safety elements for use in making pavement and roadway asset management decisions.

TxDOT – SH 130 Aerial LiDAR, Austin District, TX

As geospatial project manager, Mr. Gaztambide-Velez was responsible for planning control and LiDAR and Imagery acquisition of approximately 25 corridor miles of SH 130, from Gattis School Road to Pearce Lane, for the design and construction of new northbound and southbound lanes. He planned and executed the aerial control plan and oversaw the acquisition of aerial LiDAR and imagery. This imagery was then calibrated to the control and tested for accuracy. Mr. Gaztambide-Velez delivered a final 2D planimetric, 3D DTM, and orthorectified imagery to TxDOT in MicroStation and GEOPAK formats.

TxDOT – IH 35 Aerial and Mobile LiDAR, San Antonio District, TX

As the geospatial project manager responsible for providing aerial photography acquisition for engineering projects with transportation features, Mr. Gaztambide-Velez acquired a photogrammetric quality vertical aerial film or digital image used as the basis for a ground controlled post-processed aero-triangulation solution. He also acquired photogrammetric quality vertical aerial film based or digital image using on-board real-time navigation system to establish aerial image positions and orientation parameters and utilizing minimal ground control. Mr. Gaztambide-Velez used airborne, static, and mobile equipment to produce digital elevation models using remote sensing techniques.

TxDOT – IH 410 at SH 151 Mobile LiDAR Survey, San Antonio, TX

As project manager, Mr. Gaztambide-Velez was responsible for collecting survey grade topographic data along 8 miles IH 410 main lanes for a design survey. He utilized mobile LiDAR to minimize the impact of data collection in this busy highway by eliminating the need to perform lane closures. Mr. Gaztambide-Velez oversaw the field and office operations for mobile mapping and ensured that best practices were used on both operations, informed the client on project progress, managed the project budget, and generated a project report as part of the final deliverable.



GABRIEL ORNELAS, JR., P.E.
Geotechnical

Education:

B.S. in Civil Engineering, The University of Texas at San Antonio, 1995

Registration/License:

Professional Engineer, Texas No. 87851, 2001

TXDOT PRECERTIFICATIONS

12.1.1 Asphaltic Concrete Production

12.1.2 Portland Cement Concrete

14.1.1 Soil Exploration

14.2.1 Geotechnical Testing

14.3.1 Transportation Foundation Studies

14.4.1 Building Foundation Studies

BIO

Mr. Ornelas possesses the advanced technical, leadership, communication, and business skills to interact with clients and lead a consulting team to success. His principal practice areas, relative to consulting and design experience, include construction materials testing and engineering, forensic engineering, and geotechnical engineering.

Mr. Ornelas has more than 20 years' work experience involving management and execution of construction quality control testing and inspection services on major construction projects in Texas. He has technical and managerial expertise in concrete and soils testing and inspection, drilled pier inspection, and asphalt testing. Mr. Ornelas' construction materials testing, and engineering experience includes several public, private, and industrial projects. Other related experience includes construction monitoring, litigation documentation, non-destructive/destructive testing and observation for change-of-use evaluations, trouble shooting of asphalt and concrete construction, ground vibration monitoring, swimming pool distress evaluations, and roof condition and damage causation studies.

RELEVANT PROJECT EXPERIENCE

CR 119 – Limmer Loop to Chandler Rd, *Williamson County, TX*

Mr. Ornelas was project principle-in-charge of conducting the geotechnical engineering study for the proposed extension of CR110/Ed Schmidt Boulevard from Limmer Loop to Chandler Road located in Hutto, Texas. The project consisted of two lanes of a future four-lane roadway with shoulders and a traffic signal.

Sam Bass Road/Chisholm Trail, *Round Rock, TX*

Mr. Ornelas was project principle-in-charge of construction materials testing and observation services for Sam Bass Road/Chisholm Trail. The project involved construction of a portion of Sam Bass Road to a four-lane divided roadway from Meadows Drive to the IH 35 Southbound Frontage road, and reconstruction of a small portion of Chisholm Trail north of Sam Bass Road.

San Gabriel Parkway Extension, Leander, TX

Mr. Ornelas was project principle-in-charge of conducting the geotechnical engineering study for the proposed extension of San Gabriel Parkway from CR 270 to Ronald Reagan Boulevard as a four-lane divided roadway with curb and gutter, storm sewers, water quality, detention, street lighting, landscaping, temporary irrigation system, 6' and 10' (dual use) sidewalks and a 24" waterline.

Heritage Trail West Chisholm Trail, Round Rock, TX

Mr. Ornelas was project principle-in-charge of geotechnical engineering study for the realignment of Chisholm Trail Road along the segment of roadway extending from Brushy Creek to Sunset. Services included drilling borings along the existing Chisholm Trail Road performing laboratory testing to classify and characterize subsurface conditions, preparing an engineering report presenting foundation design and construction recommendations for the proposed realignment of Chisholm Trail Road, as well as providing pavement design and construction guidelines.

Peer Review of HR 79 Bodenman Tract, Round Rock, TX

Mr. Ornelas was project principle-in-charge of geotechnical engineering study peer review for the HR 79 Bodenman Tract. He reviewed subsurface conditions, engineering reports presenting foundation design and construction recommendations.

Peer Review of Turtle Creek Village, Round Rock, TX

Mr. Ornelas was project principle-in-charge of geotechnical engineering study peer review for the Turtle Creek Village construction. He reviewed subsurface conditions, engineering reports presenting foundation design, and construction recommendations.

Roundville Lane Reconstruction, Round Rock, TX

Mr. Ornelas was project principle-in-charge of geotechnical engineering study for the reconstruction of Roundville Lane. The services included drilling borings along the existing Roundville Lane performing laboratory testing to classify and characterize subsurface conditions, preparing an engineering report presenting foundation design and construction recommendations for the proposed reconstruction of Roundville Lane, as well as providing pavement design and construction guidelines.

US 79 Widening Harrell Parkway, Round Rock, TX

Mr. Ornelas was project principle-in-charge of geotechnical engineering study for the US 79 widening Harrell Parkway project. The services included drilling borings along the existing Harrell Parkway performing laboratory testing to classify and characterize subsurface conditions, preparing an engineering report presenting foundation design and construction recommendations for the proposed widening of Harrell Parkway as well as providing pavement design and construction guidelines.

Heatherwilde Boulevard Improvements, Pflugerville, TX

Mr. Ornelas was the geotechnical engineer for the geotechnical engineering study for the Heatherwilde Boulevard Improvements.

Water Oak Parkway Major Arterial Improvements, Georgetown, TX

Mr. Ornelas was the geotechnical engineer for the geotechnical engineering study for the Water Oak Parkway Major Arterial Improvements.

Retaining Wall and Pavement Design for FM 110, Hays County, TX

Mr. Ornelas was the geotechnical engineer for the geotechnical engineering study for the Retaining Wall and Pavement Design for FM 110. The project consisted of construction of a new roadway alignment to be located near its intersection with SH 123 and extending 0.25 miles west in Hays County. The scope of work consisted of drilling soil borings in the vicinity of the proposed Mechanically Stabilized Embankment (MSE) walls, perform laboratory testing to classify and characterize subsurface conditions, and to prepare an engineering report presenting foundation design and construction recommendations. As part of the scope of work, global stability analyses were also performed.

Mager Lane Street Widening, Hutto, TX

Mr. Ornelas was the geotechnical engineer for the geotechnical engineering study for the Mager Lane Street widening. The geotechnical engineering study for the proposed improvements consist of the widening of an existing 4,100 LF section of the existing Mager Lane. The existing roadway is currently 22' wide and the City is planning on widening this two-lane roadway into a three-lane curb and gutter roadway. The expansion of the roadway is limited to a portion of Mager Lane located from near its intersections between FM 1660 and East of Kates Way. The roadway will be designed according to a 40-mph design speed.

Cougar Avenue and Brushy Creek Road Rehabilitation, Cedar Park, TX

Mr. Ornelas was the geotechnical engineer for the geotechnical engineering study Geotechnical engineering study for the proposed roadway section of Brushy Creek Road and South Cougar Avenue. The services included drilling borings along the existing roadway, performing laboratory testing to classify and characterize subsurface conditions, preparing an engineering report presenting foundation design and construction recommendations for the roadway section, as well as providing pavement design and construction guidelines.

Hero Way/CR 269 Extension, Leander, TX

Mr. Ornelas was the geotechnical engineer for the geotechnical engineering study for the Hero Way/CR 269 Extension project.

Iron Oak Subdivision-Oak Hill Drive, Williamson County, TX

Mr. Ornelas was the geotechnical engineer for the pavement evaluation for the geotechnical engineering study for the Iron Oak Subdivision Oak Hill drive pavement study.

Diamond Oaks Subdivision Pavement, *Round Rock TX*

Mr. Ornelas was the geotechnical engineer for the pavement evaluation for the geotechnical engineering study for the Diamond Oaks subdivision pavement study.

Warner Ranch Pavements Review, *Round Rock, TX*

Mr. Ornelas was the geotechnical engineer for the pavement evaluation for the geotechnical engineering study for the Warner Ranch pavement review study.

Kalahari Pavement, *Round Rock TX*

Mr. Ornelas was the geotechnical engineer for the pavement evaluation for the Kalahari resort pavement study.

Highlands at Mayfield Subdivision, *Williamson County TX*

Mr. Ornelas was the geotechnical engineer for the pavement evaluation for the geotechnical engineering study for the Iron Oak Subdivision Oak Hill drive pavement study.

Vizcaya Subdivision, *Round Rock, TX*

Mr. Ornelas was project principle-in-charge of geotechnical engineering studies for the various phases of the Vizcaya Subdivision. The services included drilling borings, performing laboratory testing to classify and characterize subsurface conditions, preparing an engineering report presenting foundation design and construction recommendations for the Vizcaya Subdivision as well as providing pavement design and construction guidelines.

Morningside Drive/Solms Road, *New Braunfels, TX*

Mr. Ornelas was project engineer-in-charge of pavement distress evaluations, borings, and testing to evaluate the existing roadway performance and soil conditions. The team also installed piezometers and performed a yearlong groundwater monitoring study to determine the potential presence of shallow groundwater along the alignments. His team used this data and information provided by the owner/design team to develop both rigid and flexible pavement reconstruction options for consideration.

Klein Road Phase I, *New Braunfels, TX*

Mr. Ornelas was project engineer-in-charge of pavement distress evaluations, borings, and testing to evaluate the existing roadway performance and soil conditions. The team also installed piezometers and performed a yearlong groundwater monitoring study to determine the potential presence of shallow groundwater along the alignments. His team also used this data and information provided by the owner/design team to develop both rigid and flexible pavement reconstruction options for consideration.

**JOELLE ROSENTSWIEG, P.E.**

Structural

Education:

M.S. in Structural Engineering, The University of Texas at Austin, 2004
 B.S. in Civil Engineering, University of Southern California, 1997

Registration/License:

Professional Engineer, Texas No. 89451

TXDOT PRECERTIFICATIONS

- | | |
|--|---|
| 3.2.1 Route Studies & Schematic Design | 11.1.1 Roadway Construction Management And Inspection |
| 4.2.1 Roadway Design | 11.2.1 Bridge Construction Management And Inspection |
| 4.5.1 Constructability Review | 14.3.1 Transportation Foundation Studies |
| 5.2.1 Bridge Design | 14.4.1 Building Foundation Studies |
| 5.3.1 Multi-level Interchange Design | 17.1.1 Structural Engineering |
| 5.5.1 Bridge & Non-Bridge Class Culvert and Inlet Design | |

BIO

Ms. Rosentswieg has 23 years of practical experience and has managed the design of transportation projects as well as civic, educational, and institutional projects throughout Central Texas and across the state. The scope of her extensive expertise includes the design of new bridges and bridge replacements (water crossings and grade-separations), widenings, evaluation and repair, rail and safety improvements, bridge-class culverts, and retaining walls, often with accelerated design schedules. Ms. Rosentswieg's bridge design experience includes a variety of prestressed concrete and steel-framed superstructures. She has developed aesthetic details for bridge substructures, rails and retaining walls for many projects. Her retaining wall expertise includes mechanically stabilized earth (MSE), cast-in-place (CIP) spread footing, soil and rock nail, tie-back and drilled shaft walls. She has expert level knowledge of current AASHTO specifications and TxDOT design and detailing criteria and procedures.

RELEVANT PROJECT EXPERIENCE**Great Oaks at Brushy Creek Bridge, Williamson County, TX**

Ms. Rosentswieg served as project manager and engineer-of-record for this project to address operational and capacity improvements at the intersection of Great Oaks Drive and Brushy Creek Road. The project included phased replacement of the existing bridge that carries Great Oaks Drive over Brushy Creek, raising both roadways above 100-year WSE and adding eight new retaining walls, a new parking lot, and improving the surrounding pedestrian trails. New construction was phased so the intersection remained operational at all times. She performed a structural evaluation of the existing bridge, two existing culverts, and developed an extensive bridge study to determine the most economical and practical alternatives. Ms. Rosentswieg was actively involved in the day-to-day project coordination and oversight, and was responsible for the layout

and design of the new bridge and retaining walls. A skewed 2-7x5 multi-box culvert discharged nearby pond overflow under the roadway and into the creek channel. TCP sequencing required the new culvert to be constructed in two phases; temporary sheet piling was implemented to facilitate the phased construction. In addition to the crossing roadway, the culvert is designed to support a new parking lot and pedestrian trail. Curbs and parallel/flared wingwalls support pedestrian and traffic rails. The flared wingwall at upstream end of the new culvert connected to the wing of an existing perpendicular RCP culvert. The existing RCP was evaluated for structural integrity and detailed to be partially replaced as well as extended to cross below the proposed parking lot.

FM 110 (FM 621 to Caldwell County) (San Marcos River Bridge), Hays County, TX

Ms. Rosentswieg managed the bridge design and plan production effort and is engineer-of-record for an 885' long bridge on a new curving horizontal alignment; bridge width flares from 49' to 85' to accommodate a ramp. Ms. Rosentswieg performed feasibility studies and value engineering to determine best superstructure type and depth and span layouts. She selected Tx54 prestressed girders for most spans; center span uses Tx70s to span 164' across the waters of the U.S. Change in girder depths required unique detailing for interior bents. Skewed multi-column concrete bents align with channel flow and are designed for significant scour; bent design utilized special 3D frame analyses so tall columns would not need larger bent members. Ms. Rosentswieg was responsible for all coordination with the design team. She performed interdisciplinary reviews at each project milestone and QC of final calculations, and directed complete bridge plan production.

Dallas North Tollway Modifications, Plano, TX

Ms. Rosentswieg served as project manager and engineer to develop layouts and alternative solutions for 30 retaining walls (MSE, CIP spread footing, tie-back, and drilled shaft walls). She oversaw design and final detailing of the most economical wall system chosen for each location. Ms. Rosentswieg designed and detailed existing retaining wall retrofits, temporary special shoring (soil nail wall) details, two bridge widenings (West Park Boulevard Overpass and Chapel Hill Boulevard Overpass), and prestressed I-beams on inverted-T bents with tight vertical clearance.

North Mays Street Bridge over Chandler Branch, Williamson County, TX

As project manager and engineer-of-record, Ms. Rosentswieg managed the development bridge layouts and conducted an in-depth structure alternatives study to identify the most suitable bridge system to cross Chandler Branch and meet the project's constraints. The alternatives study investigated six unique bridge configurations and included preliminary engineering for each bridge option to size bridge components. She developed estimated construction costs for each option and identified the most economical option. The final bridge configuration has 10 I-girder spans with an overall length of 1,224' and width of 76'. The bridge carries two lanes of traffic in each direction and includes a 10' raised SUP on one side, a 5' raised sidewalk on the other and a 5' raised center median. Bridge framing required a thin superstructure (Tx34s) to achieve adequate vertical clearance over an existing parking lot driveway adjacent to the south abutment; a deeper superstructure type (Tx54s) with longer span lengths was utilized for the remaining spans in order to minimize number of foundations required within the FEMA floodplain. A 126' span clears the waters of the U.S. without impact.

El Paso Inner Loop (Spur 601) Bridges, El Paso, TX

Ms. Rosentswieg managed bridge design services to design a drainage crossing and two mainlane bridges: 118'-wide single-span (TY C beams) bridge carrying mainlanes over a drainage channel, and the northbound and southbound Loop 375 underpass bridges (40'-wide, 3-span, TY IV beams, aesthetic, multi-column bents).

IH 35 and US 183 Interchange Direct Connector Bridge and Retaining Walls, *Travis County, TX*

This TxDOT-funded interchange project consists of three new direct connector bridge structures, reconstruction of one existing direct connector bridge entrance, reconstruction of an existing bridge at St. John's and two new adjacent turn-around bridges, construction of new MSE and soil nail retaining walls, improved lower roadways, and new shared use paths along the frontage roads. Under Ms. Rosentswieg's direction as project manager and engineer-of-record, PESC provided structural engineering design services for the US 183 northbound to IH 35 northbound direct connector (35 spans of concrete U-beams and steel tub girders with column heights up to 68'), six MSE retaining walls, and three cast-in-place footing walls. Ms. Rosentswieg continues to manage related construction phase services.

Slaughter Lane Bridges, *Travis County, TX*

Ms. Rosentswieg was project manager and senior engineer to provide structural engineering design services to update twin bridge structures on Slaughter Lane crossing over Marble Creek. A new concrete rail type was selected to replace the retired T101 and safely protect pedestrian walkways from adjacent traffic. The curved structures are each 40'-wide, 602'-long, six spans, and use TxDOT prestressed I-girders and multi-column bents. Because of close coordination with the contractor, the redesigned bridge was able to use foundations and substructures that had already been constructed with only minimal re-work required.

Littig Road Culvert Replacement, *Travis County, TX*

As project manager and engineer-of-record, Ms. Rosentswieg provided design services and led the design team to replace an existing functionally obsolete culvert for Travis County. She performed preliminary designs for three replacement options: a bridge-class culvert option, a two-span slab beam option, and a one-span decked slab beam option. She prepared for and presented all three options to the local community at an Open House. The team determined the best superstructure type was the single-span decked slab beams. She utilized TxDOT standard designs and plans.

Manda Carlson Road Culvert Replacement, *Travis County, TX*

Ms. Rosentswieg led her design team as project manager and engineer-of-record to replace an existing, functionally obsolete culvert. She performed preliminary designs for two replacement options: a bridge-class multi-box culvert and a single span slab beam bridge. She prepared and presented the TCP, construction timeline, and bridge options to the local community at an Open House. Her team utilized TxDOT standard designs and plans to design the selected slab beam superstructure option.

Bitting School Road Culvert Replacement, *Travis County, TX*

Ms. Rosentswieg led the design team as project manager and engineer-of-record to provide bridge design services to replace an existing, functionally obsolete multi-box culvert in east Travis County. She worked with the drainage and roadway engineers to prepare preliminary designs for five replacement options: two with Tx-girders, two using post stress slab beams, and a bridge-class multi-box culvert. She prepared exhibits and a report summarizing the options with pros, cons, and estimated construction costs. While the Tx-girder and slab beam options provided overall better hydraulic performance, the multi-box culvert option was selected due to its significantly lower construction cost. The new culvert is a five-box 12x12 bridge class structure with long parallel wingwalls. The design includes a 6' wide raised sidewalk with combination railing. Stone riprap apron on each side of culvert protects the channel from erosion and scour.

Creek Crossing at Sunridge Subdivision, Austin, TX

Ms. Rosentswieg managed structural design services for a single-span prestressed I-girder bridge to allow access into a new urban subdivision. She utilized TxDOT standard designs and plans to minimize bridge costs. Ms. Rosentswieg also designed and detailed cast-in-place spread footing retaining walls for a new water quality pond. She provided extensive construction phase services and bridge inspection on behalf of the owner to verify compliance with the contract documents.

America's Interchange (IH 10 at Loop 375), El Paso, TX

Ms. Rosentswieg was the deputy project manager and assisted in the designed the western and northern approaches to the IH 10 eastbound to Loop 375 northbound connector, including prestressed concrete superstructures, and aesthetically treated concrete hammerhead and straddle bents with column heights up to 75'. She was also responsible for production of bridge layouts, structural design, and coordination with client and contractor.

IH 35W Segment 3B, Fort Worth, TX

As senior engineer, Ms. Rosentswieg led the structural portion of the design team to develop PS&E for 16 major bridges, including direct connectors, braided ramps, overpasses, and creek crossings for the reconstruction of IH 35W from IH 820 to the US 81/287 interchange. She designed and detailed a three-span continuous curved steel plate girder unit for the northbound IH 35W to westbound US 287 direct connect. PS&E were completed within 1 year of NTP on an accelerated design schedule to meet TxDOT's contractual constraints.

US 290E Manor Expressway, Travis County, TX

Ms. Rosentswieg managed bridge design and plan production for two major mainlane bridges and three frontage road creek crossings. Bridges consist of prestressed concrete I-girder superstructures, and standard as well as aesthetic reinforced concrete bent caps and columns. Ms. Rosentswieg provided corridor-wide aesthetic design and detailing of multicolumn, hammerhead and straddle bents, retaining walls, and special railing details.

IH 37 Evacuation Route Bridge Widening, San Antonio, TX

As project manager for this fast-paced project, Ms. Rosentswieg worked under an extremely tight schedule to meet funding constraints to widen four 1960s era highway bridges – two multiple-span creek crossings using prestressed concrete I beams, and two multiple span overpass structures using wide flange steel beams. Structures were widened in kind.

CR 295 at Blanco River Bridge Replacement, Hays County, TX

Ms. Rosentswieg led the design team as project manager and engineer-of-record. She prepared the bridge layout and designed an economical structure to replace an aging, structurally deficient, and functionally obsolete multiple span bridge carrying rural traffic over the Blanco River.



DEAN TESMER

Roadway Support

Education:

B.S. in Resource and Environmental Studies, Southwest Texas State University, 1992

Registration/License:

N/A

TXDOT PRECERTIFICATIONS

- | | |
|--|--|
| 1.8.1 Public Involvement | 2.7. 1 Sec. 4(F)/6(F) Evaluations |
| 2.1.1 Traffic Noise Analysis | 2.12.1 Socio-Economic And Environmental Justice Analyses |
| 2.2.1 Air Quality Analysis | 2.13.1 Hazardous Materials Initial Site Assessment |
| 2.4.1 Nationwide Permit | 2.14.1 Environmental Document Preparation |
| 2.6.4 Biological Evaluations/Assessments | |

BIO

Mr. Tesmer has 26 years of experience managing, directing, and preparing NEPA studies and environmental due-diligence reports for TxDOT and local entities. His experience includes the preparation and management of Environmental Impact Statements (EISs), Environmental Assessments (EAs), Categorical Exclusions (CEs), and all aspects of public involvement in multiple TxDOT districts. His understanding of current TxDOT and FHWA practices and procedures for NEPA compliance contributes to the timely resolution of potential project issues involving Section 4(f), Section 106, Section 404, Environmental Justice, the Endangered Species Act, and other regulatory matters, has added significant value to the projects which he has managed.

RELEVANT PROJECT EXPERIENCE

TxDOT – RM 2243 (183A to IH 35), *Williamson County, TX*

Mr. Tesmer served as environmental project manager on this feasibility study from the western portion of Georgetown to eastern portion of Leander. The purpose of the study was to determine future roadway improvements that would efficiently serve the community's transportation needs and recommend options to improve mobility and connectivity between 183A and IH 35. Mr. Tesmer was responsible for the feasibility study and public involvement.

City of Georgetown – Southwest Bypass and Wolf Ranch Parkway, *Williamson County, TX*

Mr. Tesmer worked with the City on a project to construct two new location roadways known as the Southwest Bypass and Wolf Ranch Parkway. The bypass extends from SH 29 to Leander Road (RR 2243) and Wolf Ranch Parkway extends from the bypass to D.B. Woods Road. Along the bypass, a new bridge approximately 1,550' in length, was constructed to span the South Fork of the San Gabriel River, and a new bridge approximately 840' in length was constructed over an unnamed tributary located on the south side of the river. Mr. Tesmer prepared environmental documentation including a Waters of the U.S. (WOUS) evaluation, a hazardous materials initial site assessment, and a threatened and endangered species report.

TxDOT – SH 29 (IH 35 to SH 95), Williamson County, TX

Mr. Tesmer served as the environmental lead on the TxDOT-initiated corridor feasibility study. The study area extended from Southwestern Boulevard in Georgetown to SH 95 near the community of Circleville. The purpose of the study was to evaluate the SH 29 corridor including deficiencies and identify recommended improvements and/or options that would be further evaluated for study and implementation, should funding become available. Three open house public meetings were held for the SH 29 corridor feasibility study.

TxDOT – RM 620 Corridor Improvement Study (US 183N to SH 71W), Williamson County, TX

Mr. Tesmer worked alongside with roadway engineers to develop a feasibility study for future mobility and safety improvements to RM 620. Part of the feasibility study included a public involvement plan, led by Mr. Tesmer, for the nearly 19-mile project corridor. The public involvement plan was created to engage stakeholders along the corridor and to solicit public input on proposed improvements. Outreach efforts included multiple workgroup meetings with stakeholders (including neighborhood association representatives, city representatives, elected officials, school districts, roadway users, and interested citizens), e-mail newsletter updates, project information flyers, and an online public survey that received over 3,000 responses. Mr. Tesmer, project engineers, and stakeholder groups then developed and refined proposed short-, mid-, and long-term improvements based on input received from the public and other interest groups. The detailed public involvement process, proposed improvements, and the project's next steps were then compiled into the final feasibility study report which was made available to the public on TxDOT's project website.

Williamson County – CR 258 (Sunset Ridge to Ronald Reagan Boulevard), Williamson County, TX

Mr. Tesmer was the environmental lead for this project for Williamson County. The environmental work included technical reports on archeological resources, WOUS, karst features, federally listed threatened and endangered species, and hazardous materials as well as an intensive archeological survey.

TxDOT – SH 45 (West of Rattan Creek to SH 45), Williamson County, TX

Mr. Tesmer prepared and managed the CE for the proposed improvements to SH 45 from West of Rattan Creek to McNeil Road. The proposed improvement included the construction of a new bridge at SH 45 and McNeil Road as well as ramp improvements.

TxDOT – IH 35 (Westinghouse Road to Chandler Road), Williamson County, TX

Mr. Tesmer prepared and managed the CE for the proposed improvements to IH 35 between Westinghouse and Chandler Roads (north of the advertised project). The proposed project included the widening of the northbound frontage road, the addition of a collector distributor road, providing turn-around bridges at the Chandler and Westinghouse Roads and reversing the positions of the northbound entrance and exit ramps to IH 35.

TxDOT – MBTA Nest Surveys, Williamson, Bastrop, Burnet, Llano, Mason, and Travis, Counties, TX

Mr. Tesmer led and conducted nest surveys for the Austin District of TxDOT on approximately 150 miles of state roadways. The surveys were conducted just ahead of brush and tree trimming activities to ensure compliance with the Migratory Bird Treaty Act in areas that could not be cleared outside the nesting season. Mr. Tesmer coordinated with numerous TxDOT staff and their contractors to determine when to survey roadway stretches

to stay ahead of crews but adequately address the activity level of each nest. He also developed a real-time data collection and dissemination program to immediately alert TxDOT and their contractors of active nest trees and shrubs for avoidance. In addition, Mr. Tesmer prepared weekly reports describing the areas surveyed, nests identified, and areas flagged for avoidance.

TxDOT – RM 2222 and RM 620 Biological Assessment, *Travis County, TX*

The proposed action included a new auxiliary lane between Steiner Ranch Boulevard and the new RM 2222 connector road, widening of RM 2222, and intersection improvements, as well as utility line relocations and drainage modifications as needed. Mr. Tesmer was responsible for managing the preparation of a Biological Assessment (BA) to address potential impacts to federally listed threatened or endangered species because of the proposed project. The project area was located within the range and contained potential habitat for six federally listed endangered karst invertebrates, one federally listed threatened salamander, and two federally listed endangered songbirds. Mr. Tesmer managed ecological surveys, agency coordination, protected species impact evaluations, biological technical reports, and the biological assessment. A biological opinion was issued by USFWS. Mitigation was planned through the Balcones Canyonlands Conservation Plan.

TxDOT – SH 71 at Ross and Kellam Roads, *Travis County, TX*

Mr. Tesmer served as environmental project manager on this project that would add grade separations at the two intersections and provide access to Ross Road and Kellam Road via ramps and access roads to the signalized intersections. Mr. Tesmer prepared documentation for a categorical exclusion including a historical studies survey, air quality technical report, water resources technical report, hazardous materials technical report, biological evaluation, and Tier 1 initial site assessment. Environmental clearance was received in August of 2017 for the two intersections.

TxDOT – SH 71 at FM 1209, *Bastrop County, TX*

Mr. Tesmer served as environmental project manager on the proposed improvements to include constructing new frontage roads, a grade-separation over FM 1209, and shared use paths. FM 1209 would be widened to include a second travel lane, a right turn lane, and a 14' left turn lane in each direction. East/west turnarounds would also be added on either side of the SH 71 and FM 1209 intersection and on the west side of the SH 71 intersection with SH 21. The proposed project was approximately 2.5 miles in length and would require approximately 32.5 acres of additional ROW. In addition to an EA, Mr. Tesmer produced technical reports for air quality, indirect impacts, traffic noise, and water resources, an archeological survey report, biological evaluation, Tier 1 site assessment forms, a hazardous materials ISA, and a historic resources survey report. The project was environmentally cleared (FONSI).

TxDOT – Loop 340 (South of Brazos River to US 84), *Williamson and McLennan Counties, TX*

Mr. Tesmer served as project manager on the proposed project located on Loop 340 extending from south of the Brazos River in Waco north to US 84 in Bellmead. Proposed improvements would include adding a main lane in each direction and frontage roads. In addition, the proposed project would include constructing bridges at the Brazos River, the Union Pacific Railroad, and at three intersections (SH 6, FM 2491, and Orchard Lane); adding culverts, ramps, at-grade turnarounds, sidewalks, and intersection improvements. Mr. Tesmer planned, conducted, and documented one public meeting and one public hearing. His team prepared documentation including a hazardous materials initial site assessment, a water resources technical report, a Purpose and Need statement, biological evaluation, and Tier 1 site assessment forms.

TxDOT — SH 130 from SH 71 to SH 45, Travis County, TX

The project involved widening the existing SH 130 to add a third main lane in each direction, constructing auxiliary lanes where warranted, and widening bridges and culverts from SH 45 North to SH 71 in Travis County, Texas for 22 miles. Mr. Tesmer was the environmental lead and responsible for environmental documentation in support of a re-evaluation of the SH 130 FEIS completed in 2001. The environmental scope included numerous technical reports for biological resources, community impacts, hazardous materials, cultural resources, noise, and air. Mr. Tesmer was also responsible for public involvement including coordinating the public hearing, contacting over 170 adjacent property owners and elected officials, tracking comments and responses, and producing a public hearing summary.

TxDOT — FM 1516 from FM 78 to FM 1976, Bexar County, TX

Mr. Tesmer served as the environmental lead. He managed and prepared the EA and technical reports for FM 1516. Located in Converse, the project reconstructed FM 1516 to include four main lanes with bike lanes, a continuous center turn lane, sidewalks, storm sewer and extending FM 1516 to FM 1976 (a major east-west thoroughfare). The project relocated an at-grade railroad crossing and included the relocation or demolition of seven commercial properties. Tesmer worked with the District and Blanton historian to assess the presence, appearance, integrity, and historic significance of the properties. Tesmer coordinated with staff so that the NRHP-eligibility evaluations and boundaries for the properties were completed. Efforts resulted in a No Adverse Effect for the NRHP-eligible historic properties. The following technical reports were prepared Public Meeting Summary report, Archeological Survey, Haz Mat, and TPWD Tier 1 Site Assessment. He arranged, coordinated, and executed public involvement for the project which consisted of a public meeting. A notice affording and opportunity for a Public Hearing was offered, but none were received.

TxDOT — Environmental Constraints Report, Intersection Improvements, Williamson, Caldwell, Hays, and Travis Counties, TX

Mr. Tesmer Served as the environmental project manager. He was responsible for preparing Constraints Reports for intersection improvements at US 183 at IH 10, SH 80 at IH 35, SH 80 at Cheatham Street, SH 80 at Thorpe Lane, SL 82 at IH 35, FM 734 at McNeil Drive, FM 734 at Avery Ranch.

TxDOT –Intersection Improvements, RM 1431 Corridor (IH 35 to Oakmont Drive) and Kohlers Crossing (CR 171) at FM 1626, Williamson and Hays Counties, TX

Mr. Tesmer served as the environmental project manager. He prepared environmental documentation including an Environmental Constraints Report.

TxDOT — FM 2271 from FM 439 to US 190, Bell County, TX

Mr. Tesmer prepared environmental documentation including a feasibility study and an EA.

TxDOT — US 190 from Spur 172 to FM 2410, Bell County, TX

Mr. Tesmer prepared environmental documentation including an Environmental Assessment and a Wetland Delineation Report.



EDWARD GALICIA, P.E.
Drainage

Education:

B.S. in Civil Engineering, The University of Texas at San Antonio

Registration/License:

Professional Engineer, Texas No. 114275, 2013

TXDOT PRECERTIFICATIONS

3.2.1 Route Studies & Schematic Design

4.2.1 Roadway Design

4.4.1 Freeway Interchanges

4.6.1 3-D Design Visualization Services

BIO

Mr. Galicia has 10 years of civil engineering project experience involving federal and state regulations. He has provided lead design and project management on numerous projects. Mr. Galicia is highly skilled at using 3D visualization and modeling tools to convey design criteria, as well as provide his expertise teaching others in the software.

RELEVANT PROJECT EXPERIENCE

Bluebonnet Drive Reconstruction – Williamson County, TX

Mr. Galicia led all aspects of PS&E development for the full reconstruction and widening of Bluebonnet Drive (0.25 miles). All design was produced in accordance with TxDOT specifications and standards. He maintained the project delivery schedule (preliminary/final designs), communicated with county staff, and managed project billing and invoicing. Mr. Galicia created cross sections of roadway improvements in accordance with pavement design supplied by Williamson County, analyzed existing horizontal/vertical roadway geometry, and developed proposed geometry in accordance with design criteria, developed a 3D design model, performed H&H analysis and design, developed culvert extension and replacement details, designed detailed construction phase narrative and traffic control plans, and designed storm water pollution prevention plans.

Walburg Heights Reconstruction – Williamson County, TX

This reconstruction project consists of the development of PS&E for the full reconstruction and widening of Walburg Heights (0.25 miles). All design was produced in accordance with TxDOT specifications and standards. Mr. Galicia led and developed all aspects of these construction plans including performing H&H analysis and design for all existing and proposed drainage structures within the project limits. In addition, he created a 3D model that incorporated ditch design and parallel/driveway culverts and assured highest quality deliverables by incorporating our robust quality control/quality assurance procedures.

Alamo Regional Mobility Authority (ARMA) – Evans Road Design, San Antonio, TX

As roadway task lead and deputy, Mr. Galicia managed all aspects of the PS&E job. The roadway tasks consisted of working closely with staff and providing 3D design expertise instruction. Mr. Galicia communicated directly with subcontracting firms and the client to ensure all design aspects were performed and met ARMA standards. He reviewed drainage design plans provided by the subconsultant.

TxDOT – FM 1720, Abilene, TX

Mr. Galicia served as the drainage subconsultant project manager for an 18-mile stretch of FM 1720 widening and rehabilitation. The design included the upgrade culvert replacement of corrugated metal pipe to reinforced concrete pipe, and extension of multiple box culverts. All drainage basins were calculated using USGS maps and used HY8 analysis for culvert design. The design included SETs, flared and parallel wing headwalls, broken back culverts and channel regarding in drainage easements.

TxDOT – SH 158 Grade Separation, San Angelo, TX

Mr. Galicia led as the drainage sub consultant project manager for SH158 and SH137 intersection. The PS&E submittal was a grade separation intersection just 25-miles east of Midland, Texas. The project includes the design of two bridge class culverts, storm drainpipe network, and parallel roadway ditches. Software used included Geopak Drainage, HY8, and SUDA software for 3D network display.

TxDOT Austin District – Ranch Road 12, San Marcos, TX

Mr. Galicia steered the 3D design for a 2-mile widening stretch with turn lanes for Ranch Road 12 outside of San Marcos and provided the estimates for pavement and earthwork calculations. With Mr. Galicia's 3D design, information was obtained to determine that a gabion rock wall was needed for an expansion location near an intersection. Mr. Galicia also assisted in the cross-sectional design and pavement section for the entire project.

TxDOT Dallas District – Dallas Horseshoe Project, Dallas, TX

Mr. Galicia was part of a design team that extensively used inroads in the 30% reconstruction design of IH 35 and IH 30 main lanes, as well as, several other downtown corridors including frontage roads, ramps, connectors, and collector distributors. Mr. Galicia calculated all necessary super-elevation data for every corridor.

The first major challenge came when computing super-elevation of adjacent roads at gore locations. With the use of InRoads corridor modeler, Mr. Galicia designed a template that calculated precise profiles and helped create a proposed surface to check if roll-over restrictions met to AASHTO and TxDOT standards. The design team members used this template throughout the project to ensure accuracy of all gore ridge lines. Mr. Galicia also used InRoads in the design of all vertical and horizontal alignments and ensured that exact vertical tie-ins and take off grades were applied. Mr. Galicia also ensured that all design clearance envelopes standards were met.

City of San Marcos – Downtown Reconstruction, San Marcos, TX

Mr. Galicia was responsible for the design of drainage improvements, street reconstruction, sidewalk improvements, and streetscape installation in downtown San Marcos. HNTB took over the project at the 60% design phase for the drainage and was responsible for the completion of the design and development of the water quality facilities. The design also included horizontal and vertical water main alignment for 8" and

12 waterlines, horizontal and vertical wastewater line alignments for 8" lines, streetscape layout, and ADA accessible sidewalk design. Mr. Galicia implemented InRoads software to design all horizontal and vertical alignments and completed the design using InRoads 3D modeling software. Mr. Galicia was also responsible for cross sections and ensuring the design met all criteria for the purpose for earthwork calculations

TxDOT – FM 172, Abilene, TX

Mr. Galicia served as the drainage subconsultant project manager for an 18-Mile stretch of FM 1720 widening and rehabilitation. The design included the upgrade culvert replacement of corrugated metal pipe to reinforced concrete pipe, and extension of multiple box culverts. The calculations of all drainage basins used USGS maps and HY8 analysis for culvert design. The design included SETs, flared and parallel wing headwalls, broken back culverts and channel regarding in drainage easements.

TxDOT San Angelo District – SH 158 Grade Separation, Midland, TX

Mr. Galicia led as the drainage sub consultant project manager for SH158 and SH137 intersection. The PS&E submittal was a grade separation intersection just 25-miles east of Midland, Texas. The project includes the design of two bridge class culverts, storm drainpipe network and parallel roadway ditches. Software used included Geopak Drainage, HY8, and SUDA software for 3D network display.

City of San Antonio – Jones Maltsberger, San Antonio, TX

Mr. Galicia served as support engineer on this \$17M project comprised of reconstructing and widening Jones Maltsberger to five lanes with curbs, sidewalks, driveway approaches, and necessary drainage. The project also included construction of a bridge to eliminate a low water crossing. Mr. Galicia was responsible for designing the storm drainage system, and delineated drainage areas along with calculating time of concentration, coefficient values, and flows by using Geopak Drainage tools. He assisted greatly in the design of sidewalks and oversaw determining tree preservation in accordance with city standards. In addition, Mr. Galicia assisted in the development of retaining walls, headwall design, and culvert crossings. He also designed grading for culvert inlet and outlets, as well as driveway entryways.

TxDOT Houston – FM 1093, Fulshear, TX

Mr. Galicia served as support engineer responsible for executing THYSIS software for hydraulic calculation of Tailwater and Headwater analysis. He used information to determine slope, length, and size of culverts.

TxDOT – Cattlebaron Drive, Fort Worth, TX

Mr. Galicia served as support engineer responsible for implementing a hydraulic impact analysis for a bridge replacement on the western outskirts of Fort Worth. He also devised a temporary traffic control plan, with both design coordination and ensuring the notification of all proper governmental entities by mail of future construction. Mr. Galicia executed the contact and coordination of utility companies for notification and transferring of service lines and was heavily involved in the hydrologic study by using HEC-RAS and WinStorm software. The information gathered determined flows, water elevation, energy grades, and time of concentration for FEMA flood control study. USGS maps, design drawings, aerial photos, and other topographical and geologic data were implemented to aid in analysis.



DAVID RAMIREZ, P.E.
Quality Constructability Review

Education:

B.S. in Civil Engineering, University of Texas, Austin, Texas, 2010
B.A. in Economics, University of Texas, Austin, Texas, 2006

Registration/License:

Professional Engineer, Texas No. 135484, 2019

BIO

Mr. David Ramirez, P.E., has 6 years of experience in transportation engineering working in both the private and public sector. His project experience includes ROW and utility coordination, drainage analysis/design, PS&E review/design, and project management.

As a former Texas Department of Transportation (TxDOT) employee working in the Traffic Safety Division, Mr. Ramirez has worked with various local agencies, Counties, and TxDOT offices throughout the entire state. During his tenure at TxDOT Mr. Ramirez was the subject matter expert responsible for the review and implementation of all truck routes and restricted truck lanes in the state of Texas. Other in-depth knowledge gained while at TxDOT includes establishing speed zones, freeway signing for schematic design, proper implementation for traffic control devices, use of TxDOT Standards and Manuals, and performing traffic simulations utilizing Synchro and CORSIM.

Since leaving TxDOT, Mr. Ramirez has worked in the private sector at ATG as a project manager in roadway design practice. He was been a deputy project manager and/or project professional on projects ranging from drainage analysis and design to roadway and mobility improvements.

RELEVANT PROJECT EXPERIENCE

TxDOT – FM 734 Drainage Design, Cedar Park, TX

As a subconsultant, Mr. Ramirez oversaw the production of 30% and 60% PS&E plans for storm sewer improvements, ditch capacity analysis, and culvert layout sheets. All design was produced in accordance with TxDOT specifications and standards. For PS&E development, Mr. Ramirez made field visits to locate existing infrastructure to identify any potential conflicts. He and his team have performed H&H analysis and design, developed culvert extension and replacement details, and has maintained the project delivery schedule, communicated with LAN staff, and managed the project billing and invoicing. The project is currently on hold through TxDOT.

TxDOT – East Martin Luther King, Jr. Boulevard Corridor Mobility PS&E, Austin, TX

As the prime consultant for the East Martin Luther King, Jr. Boulevard/FM 969 project, Mr. Ramirez has served as the project professional overseeing the project from US 183 to Decker Lane to incorporate safety, mobility, and connectivity improvements in order to accommodate multiple modes of transportation, including driving,

walking, biking and transit. His team is leading the development of the final design of the corridor utilizing the schematic developed in the Preliminary Engineering Phase. Mr. Ramirez is working closely with the roadway design team, ensuring the development of the final design phase of the project that includes a shared-use path and roadway design, signal design, drainage, TCP, SWPPP, retaining wall design, bridge retrofitting, railroad coordination, and environmental documentation. Mr. Ramirez is also coordinating the ROW mapping, SUE collection, and surveying conducted during this phase to aid in design.

TxDOT Odessa District – SH 176W Feasibility S&E, Andrews County, TX

As the prime consultant for the SH 176W Schematic and Environmental project, Mr. Ramirez is serving as the internal project manager. This existing 40-mile long rural segment on SH 176 in Andrews County is a combination of a super 2 highway from the New Mexico/Texas state line to the western city limits of Andrews, a four-lane undivided highway with a two-way left turn lane through Andrews, and a two-lane undivided highway from the eastern city limits of Andrews to FM 1788. The proposed improvements include widening the existing roadway to a four-lane divided facility to include several highway safety improvements in the rural portions of the project, while through the city of Andrews, pedestrian and intersection safety improvements will be analyzed for implementation. Mr. Ramirez has led the development of the scope, fee estimate, and schedule, coordinating with internal staff and the each of the subconsultants assigned to the project. Throughout, Mr. Ramirez assures the highest quality deliverables by incorporating ATG's detailed QA/QC procedures.

TxDOT – Speed Studies, Austin District, TX

Mr. Ramirez conducted speed studies to determine the 85th percentile speeds on highways in the Austin District throughout his career at TxDOT. The speed studies involved using radar boxes mounted to existing sign poles that automatically recorded speeds. As defined by The Texas Manual on Uniform Traffic Control Devices (TMUTCD), the 85th percentile speed is the speed at which 85 percent of motor vehicles are traveling. Once all data was collected, Mr. Ramirez analyzed the studies using the TMUTCD and TxDOT's Procedures for establishing speed zones as guidance to propose speed changes.

TxDOT – Statewide Speed Zoning, Statewide, TX

Mr. Ramirez reviewed and analyzed speed zones from the Abilene, Atlanta, Brownwood, Bryan, Houston, Pharr, and Waco Districts. Speed zone review and approval is based off strip maps submitted by the districts. These strip maps contain speed studies on segments of roadway considered for a speed change based on the 85th percentile speeds calculated. The suggested posted speed requested should be within 5 mph of the 85th percentile speed. Factors considered to determine the total speed reduction up to 12 mph are narrow roadway pavement, horizontal and vertical curves, high driveway density, lack of striped or improved shoulders and crash history. These reviews are in accordance with the TMUTCD, the Texas Criminal and Traffic Law Manual, and TxDOT's Procedures for Establishing Speed Zones and consist of regulatory speed zones, school speed zones, and construction speed zones. Upon completion of his analysis, approval information was submitted to the Texas Transportation Commission for final approval.

TxDOT – Freeway Signing Schematics, *Statewide, TX*

Mr. Ramirez analyzed and approved freeway sign schematics from a traffic operations perspective in compliance with the TMUTCD, TxDOT's Freeway Signing Handbook (FSH) and the Standard Highway Sign Designs (SHSD) of Texas. Schematics are layouts of a project that detail the basic geometry of the roadway along with large guide signs typically placed on overhead sign bridge structures or are ground mounted. He reviewed the design, location, spacing and messages of the signs to ensure they were appropriate for the given project. This information should be clear and concise for a driver to easily comprehend the message provided.

TxDOT – PS&E, *Statewide, TX*

Mr. Ramirez analyzed and reviewed 30%, 60%, 90%, and 95% PS&E for proper design and implementation of traffic control devices, traffic control plans for work zones, traffic signals, signing layout and pavement markings and delineation in accordance with TxDOT specifications and design standards, the TMUTCD, the Sign Crew Field Book and the SHSD. After a thorough review of the project was complete, he made recommendations via memorandum to the TxDOT district that requested the review.

TxDOT – Truck Routes, *Statewide, TX*

Mr. Ramirez was the subject matter expert for the Traffic Safety Division regarding Truck Routes in the state of Texas. Local authorities may adopt traffic regulations controlling the movement of trucks on public roads within their jurisdiction consistent with state law. By passage and enforcement of a city ordinance/resolution, a city may reroute trucks from a certain highway route within their corporate limits to an alternate highway route within their city limits. Weight and size carrying capability of the alternate route should be reasonably comparable. Also, the route should not be unreasonably longer than the original route. It should not be confusing to follow and be selected so as not to jeopardize public safety. All truck routes should be on the State highway system. Any route involving the Interstate System should be approved by the Federal Highway Administration (FHWA). Proposed truck route signing should be adequate and in compliance with current signing practice. All signs required must conform to current standards as set out in the TMUTCD regarding shape, size, color, letter size and style, mounting, and location.

TxDOT – Restricted Truck Lanes, *Statewide, TX*

Mr. Ramirez was the subject matter expert for the Traffic Safety Division regarding Restricted Truck Lanes in the state of Texas. TxDOT, cities, and counties can enact lane restrictions under certain circumstances. These restrictions typically prohibit trucks with three or more axles from using a traffic lane of a freeway with three or more lanes. Rules for restricted truck lanes are contained in Texas Transportation Code, Sections 545.0651-545.0653, and Texas Administrative Code (T.A.C.), Sections 25.601-25.604. These rules authorize a city, county, or TxDOT to restrict through traffic, by class of vehicle, to two or more designated lanes of traffic on certain portions of the designated state highway system. As the state routing agency, TxDOT is required to approve all new lane restrictions or revisions to existing lane restrictions. A city or county cannot simply pass an ordinance or resolution to establish a lane restriction. The procedures to enact a restricted truck lane are more involved than truck routes, as a traffic study is required, strict timelines need to be met in regards to the General Council Division (GCD), the Texas Registrar, a public hearing with a 30-day public comment period, and the final review of the truck lane proposal before going to the Transportation Commission for final approval.



MICHAEL CHANEY, AICP
Planning and Traffic Analysis

Education:

B.S. in Geography, Southwest Texas State University, 1994

Registration/License:

American Institute of Certified Planners, No. 024068, 2010

TXDOT PRECERTIFICATIONS

1.1.1 Policy Planning

1.2.1 Systems Planning

1.3.1 Subarea/Corridor Planning

1.4.1 Land Planning/Engineering

1.6.1 Major Investment Studies

1.7.1 Traffic Demand Modeling

BIO

Mr. Chaney is ATG's national practice lead for traffic forecasting and has 26 years of experience in transportation planning, travel demand modeling, and quantitative analysis. He is currently one of a handful of traffic forecasters trusted by TxDOT's Transportation Planning and Programming Division (TxDOT-TPP) to execute their custom forecasting process in support of complex projects around the state. Mr. Chaney, a Williamson County resident, has led traffic forecasting efforts for the MoKan (Missouri/Kansas) corridor, Williamson County Corridors A1, D, and E1, and the Williamson County Long Range Transportation Plan (LRTP). He has extensive experience forecasting traffic in the Austin area for both corridor studies and regional planning efforts. As such, he has professional working relationships with staff at CAMPO and a deep understanding of their travel demand model and the process by which the MPO provides information to planning partners and consultants for project specific use.

Mr. Chaney has been forecasting traffic for high occupancy vehicle (HOV) and managed lanes for decades and has done so in Dallas, Houston, and most recently, Little Rock, AR. He was also involved in forecasting traffic for the IH 35 Planning and Environmental Linkages Study and subsequent IH 35 Origin-Destination Study that evaluated a range of capacity expansion alternatives, including HOV, managed lanes, and general-purpose expansion.

RELEVANT PROJECT EXPERIENCE

Williamson County – Planning Support, *Williamson County, TX*

Mr. Chaney served as project manager and oversaw the production of each product needed to support Williamson County in their planning efforts. For the FM 2243 task, Mr. Chaney attended meetings with the county and stakeholders, gathered information on planned developments in the area, and guided the production of a traffic forecast for FM 2243 based on the Williamson County Long Range Transportation Plan (LRTP) ultimate build out scenario (2090). Mr. Chaney also led the devolvement of 2045 socioeconomic data used to support regional planning efforts. He researched, created, and defended revised county control totals for Williamson County population and employment used to negotiate county control totals with CAMPO.

Mr. Chaney led the effort to design the process and allocated the County control totals to the TAZ level with the guidance of major development information, feedback from Williamson County cities, and accessibility improvements. This effort was on an aggressive schedule.

Williamson County – Southeast Loop Retail Study, *Williamson County, TX*

Mr. Chaney designed the analysis framework to support the County's questions on the effects of a proposed loop on Hutto's central business area. As project director, he also oversaw the completion of the analysis and provided guidance on the best tools to support the analysis. The effort produced forecasts of traffic for a bypass of the City of Hutto in Williamson County and analyzed the effects on development patterns stemming from construction of the bypass. His team also explored the purchase of OD data (streetlight) to confirm the home location of downtown retail customers. Mr. Chaney also guided modification to the CAMPO travel demand model to ensure an accurate forecast of traffic diversion to the facility.

Williamson County – Corridor Traffic Forecasting, *Williamson County, TX*

As project manager, Mr. Chaney led the effort to ensure quality on this series of traffic forecasts for complex greenfield projects. He used team members previously trained on TxDOT-TPP standard operating procedures for traffic forecasting as the County desired to discuss and defend the forecast with planning partners in the region.

The team utilized traffic count data to prepare volume diagrams depicting existing 24-hour link and intersection traffic volumes for the study corridor for use in conveying conditions in the corridor to stakeholders and to serve as the base for development of traffic forecast. They concurrently developed AM and PM peak hour traffic volumes suitable for use in an operational analysis. Then developed traffic projections for the significant roadway segments and cross streets within each study corridor. To meet project objectives, they developed a traffic summary in State (TxDOT-TPP) format and volume diagrams depicting base and forecast year volumes.

He also assisted the County's GEC in forecasting traffic for five proposed corridors in Williamson County (A1, C, E1, F, and H) to support the independent corridor teams tasked with design of the facilities. The corridor forecast, based on the traffic forecast produced with the 2040 CAMPO model, reflected the roadway and transit projects included in the 2040 CAMPO MTP.

Williamson County – Corridor D (Ronald Reagan Boulevard), *Williamson County, TX*

As project manager, Mr. Chaney led the effort to produce forecasts of traffic for the Reagan Extension Study (Corridor D) in Williamson County. The traffic forecast is based on traffic forecast produced with the 2040 CAMPO model that reflects the roadway and transit projects included in the 2040 CAMPO MTP. Mr. Chaney provided guidance and ensured the effort was consistent with the County's planning tools and related efforts. He has also provided guidance on the selection of alternative scenarios that will efficiently provide the information needed to design the facility.

Williamson County – Long Range Transportation Plan Update, *Williamson County, TX*

The LRTP update will provide a vision for a transportation system that can safely and efficiently move people and goods while supporting the County's economic growth and quality of life. The project goal is to define the effectiveness of an arterial and freeway system to serve the County as part of an overall transportation system that operates within a community vision for mobility, economic vitality, and quality of life. As project

manager, Mr. Chaney is leading the study to identify system deficiencies and evaluate proposed transportation investments and outcomes under alternative land use and economic growth scenarios. Mr. Chaney's team is using the CAMPO travel demand model and other analytical resources to successfully deliver project results.

Arizona Department of Transportation and Metroplan – Managed Lane Study, *Little Rock, AR*

Mr. Chaney was responsible for performing QA/QC on all forecasting tasks. His knowledge of the CARTS travel demand model and its capabilities was key in defining the project approach. His team assisted in the analysis of managed lanes implementation in the Little Rock region to determine if they provided relief from congestion and reliable predictable travel times for the traveling public.

The team provided real world examples with lessons learned and detailed evaluations that assisted Arizona DOT and Metroplan in determining the applicability of the managed lanes concept. They used the regional travel demand model to help quantify the effect of managed lanes alternatives on trip-making including trip suppression, trip distribution shifts, mode shifts, ride-sharing propensity, peak spreading, time-of-day choice, and route choice. He developed travel demand forecasts that provided the necessary inputs to subsequent models that generated optimized HOV, toll, and revenue estimates for candidate facilities.

North Texas Tollway Authority – Sam Rayburn Tollway 4th Lane Widening, *Collin County, TX*

Mr. Chaney served as the project manager on an analysis of the benefits of widening the Sam Rayburn Tollway (SH 121) for the North Texas Tollway Authority (NTTA). To ensure an accurate forecast, Mr. Chaney produced and validated the assignment component of the NCTCOG travel demand model, and reviewed NTTA count data, roadway networks, and the demographic and employment estimates. Mr. Chaney also led the forecasting of the impact of a fourth lane and conducted a detailed analysis of the volumes forecasted for the multilevel interchanges.

TxDOT – Planning WA#1 TPP Forecasts, *Statewide, TX*

Mr. Chaney supported TxDOT-TPP and extended their ability to provide corridor forecasts to TxDOT's districts. This effort included corridor forecasting and the travel demand modeling required to support the forecasts. He completed forecasts for eight corridors under this work authorization.

For this effort Mr. Chaney trained a team of eight engineers in training and planners in the standard operating procedures used by TxDOT-TPP, and on more advanced components not typically undertaken by TxDOT-TPP, including forecasting for toll facilities and complex greenfield projects. Mr. Chaney's team developed traffic projections for significant roadway segments and cross streets within each study corridor, based on TPP's corridor analysis standard operating procedures or the approved methodology. The projected traffic data developed for each corridor included annualized average daily traffic (AADT) and design hourly volumes (DHV) for all proposed facilities in the corridor, including main lanes, ramps, direct connectors, intersections, and frontage roads; percent of trucks for both the AADT and DHV; directional distribution; K factor (DHV/AADT); and vehicle classification (light duty, medium-duty, heavy-duty).

TxDOT – SH 151 Schematic and Environmental, *San Antonio, TX*

The purpose of this project was to expand and reconfigure the current facility to a six-lane expressway with continuous frontage roads from Loop 1604 to IH 10. Mr. Chaney led the simultaneous development of 24-hour traffic projections for use in pavement design, as well as peak period traffic projections needed to support

operational analysis. The 24-hour traffic forecasts involved developing 2025 and 2045 traffic projections for four scenarios. Mr. Chaney and his team obtained, reviewed, and refined the AAMPO travel demand model (TDM) to support the effort. The TDM informed the analysis that followed TxDOT-TPP's standard forecasting procedures. The project area was complex in that several regional toll facilities were included in initial scenarios. He also performed crash and traffic analyses, and a traffic data and projection methodology for TPP approval.

TxDOT – IH 45 North Houston Highway Improvement Program, *Houston, TX*

The IH 45 corridor project was part of the North Houston Highway Improvement Project. Improvements included the addition of four managed express lanes to IH 45, the realignment of portions of IH 10 and US 59/IH 69, and the transition of the proposed roadway improvements to the US 59/IH 69 and Spur 527. The divided project has three segments. Mr. Chaney carried out traffic analysis on Segments 2 and 3, which included Houston's Downtown Loop System. He utilized forecasts from the Houston-Galveston Area Council (HGAC)'s regional travel demand model to guide the development of the traffic forecasts required to support microsimulation of the corridor using Vissim. An understanding of the peak period was necessary to capture three-hour periods of typical downtown Houston traffic.

Mr. Chaney, in his role as lead forecaster, designed the traffic forecast methodology and oversaw the use of HGAC's model forecasts. He reviewed the model validation in the project area; suggested adjustment for HGAC to make to the model, guided the use of the HGAC model, and provided previous 24-hour forecasts of traffic in the corridor to meet the considerable expectations of quality on this large project. In addition, Mr. Chaney created a 3D rendering of spot locations along the corridor.

SH 130 Level 2 Toll Road Feasibility, Traffic, and Revenue Study, *Travis and Williamson Counties, TX*

Mr. Chaney was responsible for the use of revealed and stated preference survey methodologies to collect data for analysis for the proposed SH 130 in the Austin region as a toll facility. The survey expanded to include overlapping toll feasibility studies of US 183A, SH 45, and Loop 1. There was a distribution of over 150,000 surveys at major intersections throughout the Austin area.

Mr. Chaney provided expertise in survey design, database design, supervision, processing, and geo-coding using advanced GIS techniques. In addition to the revealed preference survey, Mr. Chaney conducted a stated preference survey using both person-intercept techniques and a laptop computer-based survey, as well as travel time studies using floating car techniques. He executed the travel demand models used in completing this project to develop traffic forecasts used to generate toll projections for the facility.



SEAN TIHAL, P.E.
Toll Integration/Viability

Education:

M.S. in Civil Engineering (Transportation), University of California at Berkeley, 1999

B.S. in Civil Engineering, Illinois Institute of Technology, 1998

Registration/License:

Professional Engineer, New York No. 084025, 2006

BIO

Mr. Tihal has a passion for helping transportation agencies to plan, develop, implement, and operate all forms of electronic tolling programs including Open Road Tolling (ORT), All-Electronic Tolling (AET), and Managed Lanes. With over 20 years of transportation consulting experience, he is well versed in roadside and back office toll systems and operations, toll strategic planning, toll feasibility studies, toll operations analyses and T&R forecasting. He has conducted numerous studies related to capital and operating costs, electronic tolling market share analyses, toll policy, toll pricing, and toll payment alternatives for over 28 transportation agencies across the United States and Canada. Mr. Tihal is currently supporting the Ohio Turnpike and Infrastructure Commission to modernize their tolling systems by implementing a new Customer Service Center and procuring a new Toll Collection System. He is also assisting the Kane County DOT (IL) to implement all-electronic tolling on a new Toll Bridge. Mr. Tihal previously provided program management services to the Illinois Tollway for various electronic tolling initiatives including the implementation and operation of a new SAP-based toll back office system, a first in the USA. Mr. Tihal has actively served on the E-ZPass Group Reciprocity Committee since 2004.

RELEVANT PROJECT EXPERIENCE

Kane County Department of Transportation – Longmeadow Parkway Toll Bridge, AET Implementation, Kane County, IL

Mr. Tihal is currently leading the procurement of a new All-Electronic Tolling (AET) Toll Collection System (TCS) and Back Office System (BOS) for Kane County DOT. The efforts performed thus far include the development of goals, policies, business rules, a vehicle classification structure, a toll rate structure, a County toll ordinance, and the preparation of separate Request for Proposals (RFPs) for the TCS and BOS.

Ohio Turnpike – New Toll Collection System and E-ZPass Customer Service Center, Statewide, OH

Mr. Tihal led the development RFPs to procure a new electronic Toll Collection System (TCS) and Customer Service Center (CSC) for the Ohio Turnpike. The efforts performed included the development of TCs and CSC business rules and the preparation of CSC and CSC functional and technical requirements. These efforts culminated in a final CSC RFP issued in July 2018, and a final TCS RFP issued in October 2019. Currently, Mr. Tihal is leading the implementation of the new modernized CSC with Phase 1 slated to go live in November 2020. He is also leading the procurement and implementation new the TCS Integrator to implement a modernized TCS that is anticipated to go live in March 2023.

North Carolina Turnpike Authority – IH 77 Express Lanes Toll Consulting Services, Raleigh, NC

Mr. Tihal provided professional toll consulting services to the North Carolina Turnpike Authority for the implementation of the IH 77 express lanes. As senior tolling specialist, Mr. Tihal provided input on Express Lanes commercial vehicle signage, dynamic pricing, and vehicle classification.

Qatar Electronic Tolling Collection System Project, Doha, Qatar

Mr. Tihal provided professional toll consulting services for the development of tender documents for the procurement of a cashless electronic toll collection system in Doha, Qatar. As senior tolling specialist, Mr. Tihal diligence reviews of draft tender documents that will be issued to design, build, operate, and maintain a new video based free-flow state of the art electronic tolling system, that utilizes license plate recognition cameras, barrier-less technologies, a single gantry infrastructure per tolling site, and laser detectors to correctly identify the classification of the vehicle.

West Virginia Turnpike – Electronic Toll System Upgrade, Statewide, WV

Mr. Tihal provided technical assistance to upgrade their E-ZPass Toll Collection System provided by TransCore. He performed as project manager on an initial needs analysis for the new toll collection system. He also tracked and reported the Turnpike's monthly usage and statistics and represented the Turnpike on the E-ZPass Interagency Group (IAG) Reciprocity Task Force and Violations Subcommittee.

Colorado Department of Transportation – White Paper on Implementing Interoperable Tolling Back Offices, Statewide, CO

As senior toll consultant, Mr. Tihal prepared a white paper to identify the potential elements that the Colorado Department of Transportation (CDOT) should consider when undertaking the interoperability of tolling back offices in the State of Colorado. These elements include establishing regional toll interoperability, business rules and policy, organization structure, financial settlement, and branding. He also prepared a comprehensive summary of the E-ZPass interoperability group as well as examples of how various back offices operate.

Washington State Department of Transportation – SR 520 All-Electronic Tolling Implementation, Seattle, WA

As tolling system specialist, Mr. Tihal provided technical assistance in developing RFPs to procure System Integrators for the toll collection system (TCS) and the customer service center (CSC). Mr. Tihal further served as the Team Lead for the SR 520 tolling system design and provided technical services during the testing and commissioning of the new Telvent TCS. He also provided technical support during the swap out of TransCore electronic tolling readers to Sirit for WSDOT's SR 167 High Occupancy Toll lanes.

Illinois Tollway – Toll Collection System Maintenance Services Procurement, Northeastern Illinois, IL

As project manager, Mr. Tihal led the preparation of an RFP for a new toll collection system maintenance contract for the Illinois Tollway. Work efforts performed included conducting a needs assessment, identifying project goals, preparing functional and technical requirements, developing pricing forms, and preparing the formal RFP document for advertisement.

Massachusetts Department of Transportation – Tobin Bridge All-Electronic Tolling Pilot,*Boston, MA*

Mr. Tihal, as senior tolling specialist, provided technical support services to the MassDOT for the design and implementation of all-electronic tolling (AET) on the Tobin Bridge. Specifically, Mr. Tihal assisted in determining the site location of the AET gantries, developed all signage for the proposed new AET implementation, reviewing preliminary and final design drawings, and coordinated between MassDOT and TransCore on system design issues.

Washington State Department of Transportation – Roadside Tolling Systems All-Electronic Tolling Implementation, *Seattle, WA*

As tolling system specialist, Mr. Tihal served as a key technical reviewer of design and testing documents prepared by WSDOT's System Integrator Telvent (now Kapsch) for the new All-Electronic Roadway Toll Systems on IH 405, SR 99 and the new SR 520 floating bridge. He also supported WSDOT in planning for the re-procurement of the statewide "Good to Go!" back office system and operations contract.

New Hampshire Department of Transportation Toll Collection System and Back Office System Replacement, *Statewide, NH*

As senior toll consultant, Mr. Tihal provided technical support services to the New Hampshire DOT during the design and implementation of a new conventional tolling system on the New Hampshire Turnpike system provided by Xerox (now Conduent). In addition, Mr. Tihal supported the NHDOT during the procurement of a new back office system by preparing functional and technical requirements for a solicitation that led to the selection of a new back office system integrator (Cubic) and a new NH E-ZPass operations vendor (AECOM).

Bay Area Toll Authority – Regional Customer Service Center Upgrade, *Oakland, CA*

As senior tolling specialist, Mr. Tihal provided technical support services to the Bay Area Toll Authority (BATA) to upgrade their Regional Customer Service Center (RCSC). Mr. Tihal developed functional requirements and technical specifications to support FasTrak electronic tolling and photo-based tolling for Bay Area toll facilities operated by multiple toll agencies, San Francisco Airport Parking using FasTrak, violations processing, a cash payment network, vehicle registration holds, and interoperability with other California tolling agencies. He also supported BATA during the implementation of the new RCSC during the testing phases of the project.

Metropolitan Washington Airports Authority – Dulles Toll Road Toll Collection System Procurement, *Northern Virginia, VA*

As senior toll consultant, Mr. Tihal assisted the Metropolitan Washington Airports Authority to prepare functional requirements for a new toll collection system for the Dulles Toll Road, including new technologies such as automated toll payment machines and a future migration to all electronic tolling (AET). Work efforts performed included conducting a needs assessment, identifying project goals, preparing functional and technical requirements, and developing pricing forms. Mr. Tihal continued to support the Airports Authority during the procurement process by preparing the full solicitation package, evaluation criteria and submittal requirements, supporting the pre-proposal meeting and site visit, preparing responses to RFP inquiries, and issuing addenda.

Washington State Department of Transportation – General Tolling Consultant, *Seattle, WA*

As tolling system specialist, Mr. Tihal was designated as a key manager responsible for toll technology and facilities design under the WSDOT GTC contract. He prepared detailed engineering cost estimates for the design and implementation of a proposed variable-priced tolling system on the high occupancy toll lanes on IH 405 and IH 90 in Seattle. He was also instrumental in preparing a feasibility study for implementing a combined back office system to support customers using both the “Good to Go!” electronic tolling program and electronic payments on the Washington State Ferry system.

Chicago O’Hare International Airport Parking and Revenue Control System Upgrade, *Chicago, IL*

Mr. Tihal was project engineer and assisted the Chicago O’Hare Airport in replacing their Parking and Revenue Control System (PARCS) with a new state-of-the-art PARCS. Mr. Tihal’s responsibilities include reviewing functional requirements and developing technical specifications to prepare an RFP document to procure a new PARCS.

Cobequid Pass – Highway 104 Toll System Replacement Project, *Great Village, Nova Scotia, CAN*

Mr. Tihal was the project manager and provided integrated value management and compliance services as a sub-consultant to Delphi-MRC for the new toll collection system that was procured by the Highway 104 Western Alignment Corporation from IBI Group for the Cobequid Pass. His responsibilities involved conducting due diligence reviews of all project plans including testing plans, system requirements and system design documents, as well as witnessing all forms of testing that ranged from factory tests to on-site system acceptance testing and performance validation tests after the go live of the new toll system.

Metropolitan Transportation Authority Bridges and Tunnels All-Electronic Tolling Pilot, *New York City, NY*

As assistant project manager, Mr. Tihal provided technical services to the MTA Bridges and Tunnels to implement Phase 1 (Gateless Tolling) of an All-Electronic Tolling (AET) pilot program at the Henry Hudson Bridge. The project involved removing the existing toll lane gates, installing new cameras to capture vehicle license plates, installing a new plaza server, and modifying the legacy software to integrate the new image capture equipment with the existing toll collection equipment. Mr. Tihal developed detailed test procedures to test the functionality of the new Telvent gateless tolling software and oversaw the initial system testing, the detailed field testing and lane commissioning testing. He further performed data analyses and prepared a test report to summarize findings.

Illinois Tollway Back Office Implementation Program Management, *Northeastern Illinois, IL*

As project manager, Mr. Tihal managed a team that provided program management, coordination, and implementation support services to the Illinois Tollway during the upgrade of their back office electronic tolling system. This involved coordinating all activities between the tollway and their vendor Accenture, review and development support of project deliverables, validation and verification of the delivered solution, oversight of formal testing activities including managing the E-ZPass reciprocity testing efforts for the new back office and post go-live system monitoring. Mr. Tihal also supported the tollway for various other electronic tolling technology upgrades including the deployment of new violation enforcement cameras, new automated toll payment machines and the commissioning of new toll plazas.



BILL IHLO, P.E.
TNR Support

Education:

M.S. in Transportation Planning and Engineering, Polytechnic Institute of New York, 1979
B.S. in Management, Rensselaer Polytechnic Institute, 1971

Registration/License:

Professional Engineer, New York No. 072882

BIO

As a traffic engineer for nearly 40 years, Mr. Ihlo's duties have encompassed all phases of transportation studies, including a particular focus on traffic and revenue feasibility studies. These studies range from preliminary Phase I to investment grade projects. Mr. Ihlo is a Principal with the firm.

RELEVANT PROJECT EXPERIENCE

Central Texas Turnpike System – Traffic and Revenue Studies, *Austin, TX*

Mr. Ihlo was both project manager and project director-in-charge of conducting an investment grade level traffic and revenue study of proposed 70-miles of turnpike (SH 45, Loop 1, and SH 130) serving the rapidly growing suburbs of Austin. The original study was done in 2002 and resulted in a \$2.2B financing. These facilities opened for traffic in stages during 2006 and 2007 with significantly more traffic usage than expected. Updated investment grade studies were prepared in 2005, 2008, 2010, 2012, 2014, 2018 and most recently in 2019. The 2012 study was prepared in connection with expansion of the system and changes to the toll collection system including a toll increase, a cashless conversion and discounts for disabled veterans. On-going studies for TxDOT.

Central Texas Regional Mobility Authority – Studies, *Williamson County, TX*

Mr. Ihlo has been Project Manager for over 15 years and responsible for conducting a wide variety of studies in support of a long-term role as the Authority's traffic consultant. Studies include preliminary feasibility, investment grade leading to financing, monitoring traffic and revenue performance, assessing changes in toll policy, preparing sections of bond documents, issuing certificates as required by trust indentures and providing input for annual reports to TIFIA. Major projects include the 11-mile 183A turnpike now open for traffic, the 6-mile 290E project and the 8-mile 183S project now under construction. On-going studies for CTRMA.

Colorado DOT – IH 25 HOV/Express Lane Feasibility Study, *Denver, CO*

Mr. Ihlo was technical advisor for preliminary toll feasibility studies of a reversible 7-mile express lane project on IH 25 between US 36 and downtown Denver. This portion of IH 25 has four general purpose lanes in each direction and two reversible lanes in the median. Toll-paying SOV's may use only one of the median lanes; HOV's can use either lane. In addition to basic traffic and revenue forecasts, toll schedules were developed to balance time-of-day variations in-demand and provide reliable uncongested travel conditions. The project has been open since 2006 and carries more than expected levels of traffic.

MTA Bridges and Tunnels – Tappan Zee Bridge HOT Lane Feasibility Study, *Rockland and Westchester Counties, NY*

Mr. Ihlo was technical advisor for preliminary toll feasibility studies of a proposed 16-mile HOT lane project incorporated into a replacement for the TZB. Toll revenue potential was estimated for a series of alternatives.

Private Firm – Jefferson Parkway Traffic and Revenue Study, *Arvada, CO*

Mr. Ihlo was technical advisor for preliminary traffic and revenue feasibility studies for a new toll road, making up a portion of the 102-mile circumferential beltway in the western portion of the Denver metropolitan area. The completed beltway sections include C-470 (SW quadrant), E-470 (SE and NE quadrants), and NW Parkway (NW quadrant). The Jefferson Parkway project would span about half of the uncompleted section between NW Parkway and C-470 now served by State and local roadways.

TxDOT – TCA Cashless Toll Studies, *TX and CA*

Mr. Ihlo was either the project manager or technical advisor for several toll feasibility studies to assess the impacts of eliminating cash payments on existing toll facilities. The projects include the 183A Turnpike and the CTTS roadways in Austin, Texas, and the TCA roadways in Orange County, California. The 183A Turnpike successfully eliminated cash in 2008, the CTTS roadways (SH 130, SH 45N and Loop 1) converted to cashless in January 2013 while the TCA system converted in the Fall of 2013.

Various Agencies – Managed Lane Studies, *TX, NY, CO, SC, VA*

Mr. Ihlo served as either project manager or technical advisor for several preliminary toll feasibility studies to assess the revenue potential of constructing express lanes alongside general purpose lanes. Corridors include IH 35W in Denton, Texas, Tappan Zee Bridge in Rockland County, New York, IH 25 in Denver, Colorado, IH 26 in South Carolina, both Loop 1 (North and South), and 183N in Austin, Texas, and Route 28 in Virginia.

Transportation Corridor Agencies – Traffic and Revenue Study, *Orange County, CA*

Mr. Ihlo served as either project manager or technical advisor on a long-term assignment for the Transportation Corridor Agencies' (TCA) toll roads. This 51-mile toll system was built in stages between 1993 and 1999 and processes over 300,000 average weekday toll transactions. The toll facilities serve major employment and shopping centers, provide congestion relief alternatives, and provide access to future development areas. Significant traffic and revenue studies were conducted in 2003, 2008, and 2012, with extensive changes to the travel demand model including recalibration to reflect changes in land use development trends, travel patterns and network infrastructure. Other assignments include annual forecasts for budget process, analysis of toll elasticity and rate adjustments, impact of conversion to cashless operations and routine monitoring of traffic, revenue, and AVI usage.

Northwest Parkway Public Highway Authority –Traffic and Revenue Study, *Broomfield, CO*

Technical Advisor for 2001 and 2007 investment grade traffic and revenue feasibility study for a new 10-mile toll road, making up a portion of a circumferential roadway in the northwest Denver metropolitan area. The facility opened in 2003. The 2007 traffic and revenue study was prepared for refinancing purposes.

North Carolina Department of Transportation –Toll Feasibility Study, NC

Mr. Ihlo was project manager in charge of developing traffic and revenue criteria to assist NCDOT in determining feasibility of constructing and operating toll financed highways. The study was conducted pursuant to legislation (HB 1630) which required that the department study “the feasibility of construction of State-owned and State-operated toll roads and the areas where any State-owned and State-operated toll roads are proposed.”

The Falcon Company LLC – Alabama Tollway Preliminary Feasibility Study, Baldwin County, AL

Mr. Ihlo was the technical advisor for the feasibility study of the first 60 miles of a planned 300-mile toll road in Alabama. Tasks included analyzing the various toll schedules and estimated toll traffic, gross toll revenues, operating, and maintenance expenses and net revenues.

Virginia Department of Transportation – Route 28 HOT Lanes, VA

Mr. Ihlo was technical advisor for the preliminary toll feasibility study to assess the revenue potential of constructing express lanes along Route 28 available to HOVs for no charge and to SOVs for a toll charge.

Arizona Department of Transportation – South Mountain Freeway Feasibility Study, Phoenix, AZ

Mr. Ihlo was project manager responsible for the preparation of traffic and revenue estimates for this proposed 22-mile toll facility on the southwest side of Phoenix. Work included developing traffic and revenue projections under alternative growth and toll rate scenarios.

City of Chesapeake – Jordan Bridge Traffic and Revenue Study, Chesapeake, VA

Mr. Ihlo was project manager responsible for the traffic and revenue estimates of a high-level replacement bridge for an existing drawbridge. Tasks included data collection, coordination between various commissions, analysis of economic data, and traffic sensitivity testing using the regional traffic model.

Transportation Corridor Agencies – Foothill/Eastern Transportation Corridor, Orange County, CA

Mr. Ihlo was project manager for the due diligence review of this proposed 25-mile toll roadway in Southern California. Tasks included examining and reviewing parameters used by others in developing traffic and revenue estimates and determining the reasonableness and impact of variations of numerous key assumptions.

Morris Knudsen Corporation/E470 Public Highway – E-470 Project (Segments 2, 3, and 4), Denver, CO

Mr. Ihlo was project manager for multiple investment grade traffic and revenue forecasts for 40 miles of new toll road in eastern Denver. This ‘first of a kind’ public/private partnership provides beltway access to the fastest growing area of Denver as well as to the new Denver International Airport – the largest airport in the United States. Follow up efforts involved monitoring traffic and development patterns during early ramp-up period.

New York State Thruway Authority – Various On-Call Assignments, NY

Mr. Ihlo was project manager responsible for various assignments completed on an as-needed basis for the New York Thruway Authority. Assignments focused on traffic and revenue estimates for the Thruway mainlines, as well as operational studies for various interchanges and toll plazas.

New York State Thruway Authority – Tappan Zee Revenue Study Forecast, *Rockland and Westchester Counties, NY*

Mr. Ihlo was technical advisor for preliminary studies of NYS Thruway Authority toll revenue potential in connection with replacement of TZB.

Texas Turnpike Authority/TxDOT – Numerous Toll Feasibility Studies, *Houston, Austin, Dallas, San Antonio, and Laredo, TX*

Mr. Ihlo was project manager and technical advisor for numerous toll feasibility studies throughout the state of Texas. His assignments include analyzing new project alignments such as bypasses or beltways and adding new capacity to existing corridors in the form of express toll lanes.

Texas Turnpike Authority/TxDOT – Central Texas Turnpike 2002 Project, *Austin, TX*

Mr. Ihlo was project manager in charge of conducting an investment grade level traffic and revenue study of proposed 70-miles of turnpike (SH 45, Loop 1 and SH 130) serving the rapidly growing suburbs resulted in a \$2.2B financing. These facilities opened for traffic in stages during 2006 and 2007 with significantly more traffic usage than expected. Mr. Ihlo recently completed an updated traffic and revenue study used to remarket bonds and is currently evaluating the upside revenue potential using alternative toll schedules.

Texas Turnpike Authority/TxDOT – 183A Turnpike, *Austin, TX*

Mr. Ihlo was project manager responsible for conducting numerous intermediate level and investment grade traffic and revenue feasibility studies for a proposed 11-mile turnpike project serving the rapidly growing north suburbs of Austin, Texas. Phase 1 of this project opened in 2007 with significantly more traffic usage than forecasted. Phase 2 opened in 2012, some 5 years ahead of schedule and Phase 3 of this project is currently being studied for a possible extension.

Department of Transportation – Route 14 Corridor Study, *Horseheads and Watkins Glen, NY*

Mr. Ihlo was assistant project manager for this 17-mile corridor study. Responsibilities included analysis of existing and future problem areas, development of a range of preliminary design solutions, including 200 scale alignments with typical cross sections, impact evaluation, development of community participation programs, and recommendation of alternatives and phasing programs.

New York State Thruway Authority – IH 87/IH 84 Interchange and Toll System Study, *Newburgh, NY*

Mr. Ihlo was project manager of a major traffic impact study of new direct connectors between the New York State Thruway and IH 84. The scope included the traffic studies and conceptual design of interchanges as part of an expanded project proposal, and the preliminary design report including an environmental impact statement.

New Jersey Highway Authority – Garden State Parkway Comprehensive Traffic Study, *Cape May to Bergen Counties, NJ*

Mr. Ihlo was project manager responsible for a comprehensive traffic study of this 173-mile stretch of highway, as well as the subsequent development of a long range forecast. The studies included interchange feasibility, ramp improvements, ramp metering, park and ride intermodal opportunities, safety, variable message signs, and electronic toll collection.



KEMBLE WHITE, PHD, PG

Karst Support

Education:

PhD in Geology, University of Mississippi, 2006
 M.S. in Engineering Geology, University of Mississippi, 1997
 B.A. in Geology, University of Mississippi, 1995
 B.A. in Journalism, University of Mississippi, 1995

Registration/License:

Professional Geoscientist, Texas No. 3863, 2003
 USFWS 10(a)1(b) Scientific Permit TE 37416B (Central Texas Karst
 Invertebrates and Eurycea salamanders), 2015
 Karst Hydrology of the Edwards Aquifer, Western Kentucky University, 1999

BIO

Dr. White has specialized in land-use issues unique to the Central Texas growth corridor for more than 25 years. His trusted perspective on complicated karst due-diligence issues has resulted in a long list of repeat clients and high-profile projects. His primary focus is the Endangered Species Act and water quality regulations pertaining to caves, springs, and the Edwards aquifer. He helps his clients find the middle ground between the needs of resource protection and human population growth. Dr. White's specialties include regulatory issues surrounding endangered karst invertebrates and Eurycea salamanders, expert witness testimony, land use planning in environmentally sensitive areas, public outreach, preserve design, habitat conservation planning, Texas Commission on Environmental Quality (TCEQ) Geological Assessments and associated reports, City of Austin Environmental Assessments, and consulting on caves encountered during construction. He has a depth of experience with transportation projects.

Over the course of his career Dr. White has made a significant contribution to the state of Texas cave science and to the conservation of karst resources. His doctorate was on biospeleology, the study of caves and cave life. His research on Cicurina spp. cave spider genetics and the evolution of their habitat was published in Geology, the world's flagship peer-reviewed earth sciences journal. He has discovered many new locations for rare and endangered species and two new species have been named in his honor. His karst survey work has contributed to the establishment of thousands of acres of preserve land within the Edwards Aquifer recharge and contributing zones through land acquisitions programs, including the ESA Section 6 program. At the invitation of the U.S. Fish and Wildlife Service (USFWS), he served on the recovery team for the Bexar County endangered karst invertebrates from 2002 to 2013.

Dr. White was a primary author of the Williamson County Regional Habitat Conservation Plan. Since 2008 he has worked with the Williamson County Conservation Foundation and the USFWS to develop karst preserves to recover Williamson County's endangered karst invertebrates so they may be removed from the Endangered species list.

Dr. White has worked as a close advisor to Williamson County leadership on technical, regulatory, and policy issues during the listing process for the northern Edwards Aquifer salamanders. Since 2012, he has served on the technical working group for the Georgetown and Jollyville Plateau salamanders. His technical work and consulting experience were instrumental in developing the special 4(d) rule for the Georgetown salamander published by the USFWS in 2015.

RELEVANT PROJECT EXPERIENCE

Williamson County Conservation Foundation – Williamson County Regional Habitat Conservation Plan/Environmental Impact Statement (RHCP/EIS), *Williamson County, TX*

Dr. White co-authored the RHCP/EIS in support of an ESA 10(a) permit for incidental take of two endangered songbirds, and two endangered karst invertebrates, the Bone Cave harvestman and Coffin Cave mold beetle. Following approval, the RHCP evolved into one of the most successful RHCPs in the country. It has served as the primary mitigation vehicle for many Williamson County Road Bond projects including improvements to IH 35, SH 195, Ronald Reagan Boulevard, RM 620, O'Connor Road, and many others. Dr. White continues to provide implementation services on RHCP preserves including biological monitoring of dozens of caves and several springs on RHCP preserve land.

Williamson County – Cambria Cavern Environmental Services, *Round Rock, TX*

Dr. White provided comprehensive karst services to the Williamson County engineer following the collapse of a major sinkhole. He led the effort which included exploration and mapping of the cave, assisting with safety protocols, compliance and mitigation reporting to the TCEQ, collaborating with engineering consultants on the mitigation plan, providing construction inspection services, and responding to information requests from the County public information officer. The high-profile project was completed successfully despite intense media attention in a high litigation-potential situation.

TxDOT and the Central Texas Regional Mobility Authority – SH 45 Southwest, *Travis and Hays Counties, TX*

Dr. White provided a wide range of karst services on a controversial new roadway located in the Barton Springs recharge zone. The services included conducting a karst terrain feature survey, a TCEQ Geologic Assessment, endangered karst invertebrate due-diligence investigations, Barton Springs and Austin Blind salamander technical reports, and attending numerous meetings with the project team, local officials, and the public. Dr. White participated as a key member of the project karst technical working group along with a wide variety of state, local, and Federal officials. The project would include construction of approximately 3 miles of managed lanes between MoPac Expressway and FM 1626 through Travis and Hays Counties.

TxDOT – Mobility 35 Williams Drive project, *Georgetown, TX*

Dr. White coordinated karst environmental studies for a major improvements project to a Federal highway in sensitive karst terrain. Studies included components of a Texas Commission on Environmental Quality (TCEQ) geologic assessment, excavation and endangered karst invertebrate presence/absence investigations in a newly discovered cave, and presence/absence surveys for threatened Eurycea salamanders in a newly documented spring run. These karst studies supported the project NEPA documentation and Dr. White participated in the formal section 7 consultation for the project along with staff from the TxDOT Environmental Affairs Division, the Austin District, and the USFWS Austin ESFO. Due in part to the thoroughness of karst studies, this project passed the formal consultation completeness check in record time.

TxDOT – Mobility 35 (RM 2243 to RM 1431), Georgetown, TX

Dr. White coordinated a geophysical study and authored a Texas Commission on Environmental Quality (TCEQ) geologic assessment for the project that will cross over Inner Space Cavern, a cave system containing listed endangered species and also open for public cave tours. He worked with the geophysicist to layout electrical resistivity lines used to image karst features. The project will improve the RM 2243 and RM 1431 intersections with the interstate while reversing ramps along IH 35 southbound. Conducting geophysical studies in karst terrain is becoming more common for roadway projects, especially where projects are in the vicinity of caves known to contain listed species. The geologic assessment describes potential hydrological impacts to Inner Space Cavern and inventories potentially sensitive and manufactured recharge features, as well as discharge features present in the project area.

City of Georgetown – Southwest Bypass/Wolf Ranch Parkway, Georgetown, TX

Dr. White was sub-contracted through to provide karst services for an approximately 3-mile roadway. Dr. White conducted a TCEQ geologic assessment, an endangered karst invertebrate due-diligence study including a full presence/absence survey for a newly discovered cave and assisted with the project participation in the Williamson County RHCP. Dr. White also conducted the due-diligence studies required under the City of Georgetown Edwards Aquifer water quality ordinance that supports the USFWS special 4(d) rule for activities with the potential to harm the threatened Georgetown Salamander.

City of Georgetown – San Gabriel Park Phase 1 Karst Services, Georgetown, TX

Dr. White provided a series of karst services in support of a major parks improvement project which included ecological restoration of the historic San Gabriel Springs. Dr. White assisted in developing the project Endangered Species Act compliance strategy, informal coordination with the USFWS, conducting a USFWS presence/absence survey for Georgetown salamanders. Dr. White also assisting landscape architects in the ecological design and providing endangered species inspection services during the construction phase.

Williamson County – Pearson Ranch Road/SH 45 Interchange, Round Rock, TX

Dr. White conducted a Jollyville Plateau Salamander habitat assessment and impacts analysis for construction of a new intersection in close proximity to a site known to be occupied by JPS and partially within a designated critical habitat unit. Elements of the analysis included the presence of shallow groundwater and other habitat components and the influence of existing structures associated with SH 45. Dr. White's analysis assisted in enabling the project to proceed while avoiding impacts to both JPS and critical habitat.

Williamson County – O'Connor Drive Extension Project, Round Rock, TX

Dr. White conducted the TCEQ geologic assessment investigations and the endangered karst invertebrate due-diligence investigations for a new section of O'Connor Road, which now runs 1.5 miles between RM 620 and SH 45. The project was completed by negotiating private landowner concerns on the Robinson Ranch.

Upper Brushy Creek Water Control and Improvement District (UBCWCID) – Dam 8 Modernization Project, *Williamson County, TX*

This investigation was conducted in support of a dam modernization project at Ganzert Lake on the Robinson Ranch for Upper Brushy Creek Water Control and Improvement District (UBCWCID). Dr. White conducted JPS presence/ absence investigations and endangered karst invertebrate investigations. No salamanders or endangered invertebrates were located within the project area.

City of Round Rock and UBCWCID – Dam 101 Project, *Williamson County, TX*

The City of Round Rock and the UBCWCID are in the design phase of a proposed new dam on Lake Creek on the Robinson Ranch. Dr. White conducted JPS presence/absence investigations and endangered karst invertebrate investigations within and adjacent to the Dam footprint. No salamanders or endangered invertebrates were located.

UBCWCID – Dam 102 Project, *Williamson County, TX*

The UBCWCID is developing a conceptual design for a new dam on the Robinson Ranch in the Lake Creek Watershed to divert and/or detain floodwaters and mitigate flooding in downstream structures along Rattan, Lake, and Brushy Creeks. Dr. White conducted JPS presence/absence investigations and endangered karst invertebrate investigations within and adjacent to the Dam footprint. The project area occurs within the range of the JPS. No salamanders or endangered invertebrates were located.

TxDOT and Williamson County Road Bond Program – SH 195 Karst Investigations and Biological Assessment, *Williamson County, TX*

In support of an Environmental Assessment Re-Evaluation, Dr. White led karst feature excavations, habitat evaluations and endangered karst invertebrate presence and absence surveys for a major improvements project to SH 195 between IH 35 and the Bell county line. Two species of endangered invertebrate were determined to occur within the project limits and adverse effects evaluated. Dr. White participated extensively in the Section 7 Endangered Species Act consultation along with the Williamson County Road Bond project team and various elected officials. Dr. White also led the technical effort in identifying and acquiring suitable mitigation preserves.

Williamson County – Brushy Creek Regional Trail Phase V, *Round Rock, TX*

Dr. White conducted a TCEQ geologic assessment investigation and provided support services for the biological assessment required due to grant funding by TxDOT. Support services included presence and absence surveys following the USFWS survey protocol for Georgetown, Jollyville Plateau, and Salado Salamanders at springs within the proposed Brushy Creek Regional Trail footprint. Dr. White also assisted in an informal consultation with the USFWS Austin ESFO.



HEATHER BEATTY, PG
Edwards Aquifer Regulatory

Education:

M.S. in Geology; Texas Tech University, Lubbock, TX; 1992
B.S. in Geoscience; Texas Tech University, Lubbock, TX; 1990
Karst Hydrology of the Edwards Aquifer; Western Kentucky University; 1999

Registration/License:

Professional Geoscientist, Texas No. 1350

BIO

Ms. Beatty brings 23 years of experience with the Edwards Aquifer karst system and pollution prevention. Ms. Beatty is currently responsible for conducting geological assessments and karst void response for transportation and utility projects. Prior to these, she was the District Geologist with TxDOT (Austin District) and functioned as the stormwater quality subject matter expert (SME), often training transportation engineers in the permanent water quality calculation methods. She worked with a team of environmental scientists to NEPA clear transportation projects. Ms. Beatty prepared dozens of geologic assessments and water pollution abatement plans, including those in which she coordinated with consultant geologists and engineers who prepared documents. She was the point-of-contact for all planning, construction and maintenance matters that related to Edwards Aquifer compliance for the TxDOT Austin District, covering Williamson, Travis, and Hays Counties.

During more than 15 years in the Edwards Aquifer Protection Program (EAPP) at the Texas Commission on Environmental Quality, Ms. Beatty developed expertise in all aspects of water pollution abatement plans, sewage collection system plans, and hazardous material facility plans. She functioned as the technical expert in the EAPP after gaining experience in reviewing thousands of geologic assessments and plans for residential and commercial developments in Williamson, Travis, and Hays Counties. Ms. Beatty was responsible for reviewing and approving hundreds of cave closure plans. She conducted environmental compliance evaluations for those various construction projects as well as for permanent BMP compliance for completed projects.

As an adjunct professor, Ms. Beatty taught Environmental Regulations Overview and Physical Geology lecture and laboratory at Austin Community College. Additionally, she developed and taught a new course in Environmental Geology.

RELEVANT PROJECT EXPERIENCE

TxDOT Austin District – IH 35 (RM 2243 to RM 1431), Georgetown, TX

Ms. Beatty coordinated a 2019 geophysical study and authored a Texas Commission on Environmental Quality (TCEQ) geologic assessment for the project that will cross over Inner Space Cavern, a cave system containing listed endangered species and open for public cave tours. Ms. Beatty worked with the geophysicist to layout electrical resistivity lines used to image karst features. She used her TxDOT experience interpreting schematic

plans to identify project elements that could benefit from electrical resistivity imaging. Conducting geophysical studies in karst terrain is becoming more common for roadway projects, especially where projects are in the vicinity of caves known to contain listed species. In the geologic assessment she authored, Ms. Beatty described potential hydrological impacts to Inner Space Cavern. She also inventoried potentially sensitive and manmade recharge features, as well as spring seep present in the project area.

TxDOT Austin District – State Loop 1 (Mopac) Intersections, Austin, TX

Ms. Beatty functioned as the lead field geologist for the geophysical study of the La Crosse Avenue intersection and adjacent main lanes where construction encountered dozens of karst voids (at one of the grade-separation intersections). The geophysical study was required to characterize near surface bedrock conditions and identify potentially undetected karst features beneath those sections of the project where excavation and drilling revealed poor-quality rock. As a subcontractor, Ms. Beatty developed the work authorization language approved by TxDOT. She coordinated with the TxDOT Area Office in charge of the construction project with access issues for the geophysical survey. Conducting geophysical studies in karst terrain is becoming more common for roadway projects, especially where projects are likely to encounter a higher than normal density of voids. While employed by TxDOT earlier in the project, Ms. Beatty reviewed the TCEQ geologic assessment for the grade separation intersections project on the Edwards Aquifer recharge zone. As there was a concern with encountering karst voids during construction, she drafted void mitigation protocols and wrote a scope for additional geologic studies to examine potential impacts to nearby caves. Ms. Beatty also played an active role directing the design engineer on the contents of the water pollution abatement plan. During the construction phase, Ms. Beatty represented the TxDOT Austin District on stormwater compliance inspections conducted by the Barton Springs Edwards Aquifer Conservation District (BSEACD), and she coordinated agency inspections of approximately 30 subsurface voids that were encountered.

TxDOT Austin District – Mobility 35 Water Quality Program, Williamson County, TX

Ms. Beatty led an effort for the TxDOT Austin District's Mobility 35 program to proactively plan for permanent stormwater water quality best management practices (BMPs) for IH 35 projects in Williamson County. The coordination program she led was applicable to all IH 35 projects on the Edwards Aquifer recharge zone which coincided with all projects in Williamson County. At the start, Ms. Beatty advised engineers on individual schematic and design phase projects concerning stormwater BMP selection, drainage facility placement, sizing calculations, and design elements. As the effort continued, she identified a need for a new scope of work for schematic and design phase water quality deliverables based on a lack of water quality experience between the multiple design engineers. Ms. Beatty, being the water quality subject matter expert at TxDOT, asserted that water quality deliverables be separated from H&H reports (these requirements were in addition to those described in the TxDOT the hydraulic design manual and specific to compliance with the TCEQ Edwards Aquifer Rules).

TxDOT Austin District – SH 45SW Environmental Studies and Water Quality Coordination, Travis and Hays Counties, TX

Ms. Beatty actively contributed to the environmental studies, coordination with local experts, and the development of the water pollution abatement plan (WPAP) for the new roadway project on the Barton Springs Segment of the Edwards Aquifer recharge zone. She gained experience with multiple environmental issues during the planning phase of the controversial project, namely geologic assessment field methods, karst feature excavation coordination, protection of sensitive karst features, participation in a technical working group with local experts, technical review of water quality calculations, and providing environmental protection guidance to the design engineer. While chiefly related to compliance with the TCEQ Edwards

Aquifer protection program (EAPP), these issues have broad application to other roadway projects. Beginning her project involvement with geologic assessment field methods, Ms. Beatty accompanied geologists on their pedestrian survey of the 3.5-mile long roadway corridor. She and the other geologists inventoried hundreds of potentially sensitive karst features and reconciled them with documented features from an earlier survey. After the field survey, Ms. Beatty coordinated with TCEQ EAPP on the excavation of karst features. She prepared the TCEQ application that provided all the key elements the agency required to approve the work. In the schematic design phase, Ms. Beatty advised the TxDOT environmental and design project managers of TCEQ policies regarding impact avoidance to sensitive karst features. Specifically, she guided them with roadway alignment considerations as it pertained to the more major sensitive karst features. She used her experience from being a former long-time staff member of the TCEQ EAPP about an important subject that is not published in any agency guidance. Any new roadway project on the Edwards Aquifer regulated zones can benefit from this type of experience. Related to alignment considerations, Ms. Beatty coordinated with the Director of the TCEQ Waste Permits Division to obtain approval for drainage modifications to certain sensitive recharge features within the project limits. She effectively communicated the proposed protections for the features that, because of natural drainage modifications, were considered by the agency as underground injection wells. The coordination was approved after only one brief meeting to review her submittal. As the project moved past schematic and into the design phase, Ms. Beatty participated in about a dozen technical working group meetings with local experts (representing the City of Austin, the BSEACD, and Travis County). During these facilitated meetings, Ms. Beatty offered her expertise in aspects of environmental compliance particularly the protection of karst features during construction and design elements of permanent water quality controls. These are universal issues that can relate to roadway and other development projects on the Edwards Aquifer recharge zone. During the development of the WPAP, Ms. Beatty reviewed the water quality treatment approach and the associated water quality calculations. She provided instructive guidance that would aid in the review of the multiple BMPs in series approach. Ms. Beatty also provided environmental protection guidance to the design engineer. She assisted the engineer in the development of the environmental sequence of construction. During the construction phase, Ms. Beatty represented TxDOT on stormwater compliance inspections conducted by the BSEACD and was involved with environmental construction oversight on behalf of TxDOT.

Hays County – Road Bond Program (RM 3227/RM 150), Hays County, TX

Ms. Beatty completed geologic assessment reports for two related roadway improvement projects sponsored by Hays County. As a subcontractor, she identified the unique sinkhole terrain located near the RM 3237 and RM 150 intersection, a future roundabout configuration, and the importance of stormwater discharge quality. While there were no consequential geological findings for the intersection safety improvements along RM 3237, Ms. Beatty assisted the client with permanent stormwater BMP selection given the constraint of constructing within existing right of way.

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

FORM CIQ

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

Pape-Dawson Engineers, Inc.

2 Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information is being disclosed.

N/A

Name of Officer

4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

N/A

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

Yes No

5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

N/A

6 Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7 

Signature of vendor doing business with the governmental entity

12/29/2020

Date