

Request for Proposal # 2022-063

Pavement Analysis and Related Services

Prepared For TXShare, North Central Texas Council of Governments

Prepared by **Data Transfer Solutions, LLC (DTS)**
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Submitted
February 24, 2023



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February 24, 2023

North Central Texas Council of Governments
624 Six Flags Drive, Suite 100
Arlington, TX 76011

Dear North Central Texas Council of Governments Selection Committee:

Data Transfer Solutions, LLC (DTS) is pleased to present our proposal in response to the North Central Texas Council of Government's (NCTCOG) Request for Proposals for Pavement Analysis and Related Services (RFP #2022-063). DTS understands that the NCTCOG is interested in selecting a vendor to provide its member agencies with automated pavement data collection, GIS based mapping, bridge inspection, geodatabase design, implementation and integration with various asset management software systems, and to offer long term pavement preservation plans while examining historic and current analysis. To summarize our proposal, the DTS team has not only the capability to provide the vast majority of the required and optional services included in the RFP, we have extensive experience in doing so for NCTCOG clients since first being selected as a NCTCOG service provider in 2016.

A partial listing of DTS' Texas asset management clients includes Arlington, Argyle, Celina, Duncanville, Little Elm, Lewisville, Castle Hills, Plano, Hutchins, Sherman, Denison, Colleyville, Fort Worth, Trophy Club, San Antonio, Bexar County, Austin, Houston, New Braunfels, Fredericksburg, College Station, Brownsville, Williamson County, El Campo, Bastrop County and LBJ Infrastructure Group (TxDOT). Additional asset management clients include Arizona DOT; Colorado DOT; Minnesota DOT; New York State DOT; Rhode Island DOT; New Jersey DOT; Albuquerque, NM; Charlotte, NC; Jefferson County, CO and New York City, NY.

The DTS team consists of:

Data Transfer Solutions, LLC (DTS), formed in 2006, is an asset management solutions company and a wholly owned subsidiary of Atkins North America, Inc., that specializes in transportation planning, engineering, and GIS. DTS is headquartered in Orlando, FL with regional offices in **Plano, TX (DTS)**; Austin, TX (Atkins Engineering); San Antonio, TX (Atkins Engineering); Houston, TX (Atkins Engineering); Ft Collins, CO; Nashville, TN; and Aberdeen, NC. DTS has a **strong interest** in providing these services to the members of the NCTCOG and is **well-qualified** to provide these services. In the last 5 years, DTS has compiled asset data for over 100 asset management projects including videolog applications, pavement condition surveys and roadway geometrics, signs, pavement striping and markings, crosswalks, curb and gutter, sidewalks, manholes, inlets, guardrails, fire hydrants, and traffic signals. DTS is a Registered Engineering Firm by the State of Texas and **DTS' Mobile Asset Collection (MAC) vehicles have received independent inertial profiler certification from the Texas A&M Transportation Institute from 2015 thru 2023.**

Aerial Ambiance is a Small, Minority, Women-Owned (SMWBE) firm based out of Texas. Aerial Ambiance specializes in providing photogrammetry, bridge inspections, and Unmanned Aerial System (UAS) high-quality imaging solutions across various industries within both the private and public sectors. Aerial Ambiance's in-depth knowledge of providing high-definition data in hard-to-reach places and angles sets them apart from other service providers in the industry. Since 2020, DTS and Aerial Ambiance have been providing high-definition photogrammetry solutions in support of the City of Houston's pavement preservation and bridge inspection program.

DTS looks forward to continuing our long-term relationship with the NCTCOG. We confirm that our proposal shall remain valid for a minimum of 90 calendar days after the due date. For questions, please contact me at corporate headquarters which has a physical and mailing address of 482 Keller Rd., Suite 300, Orlando, FL 32810, (407) 375-3049 and donna.huey@atkinsglobal.com. As the President of DTS, I can coordinate contractual obligations for DTS.

Sincerely,

Donna M. Huey
President

ADDENDUM



ADDENDUM TO THE REQUEST FOR PROPOSALS Pavement Analysis and Related Services

ADDENDUM NO. 1

DATE ISSUED: February 14, 2023

**REQUEST FOR PROPOSALS NUMBER: NCT-2022-063
ORIGINAL RFP SUBMISSION DATE: February 21, 2023
REVISED RFP SUBMISSION DATE: February 24, 2023 (Revised)**

RFP NCT-2022-063, dated January 20, 2023, is hereby amended to incorporate in full text the following provisions:

Section 1.1: Purpose

Section 1.1, Paragraph Two is hereby struck and replaced with the following:

Qualified respondents must be able to conduct, instruct, and/or implement Pavement Analysis Analyses and/or Asset Management Inventory for publicly-maintained roadways, including arterial and collector streets, streets with concrete, asphalt, and/or dirt/gravel, and alleyways. Qualified Respondents must also be able to conduct surveys of sidewalk networks and ADA ramps, if applicable. Qualified firms are invited to submit proposals, based on the information provided in this RFP. NCTCOG intends to establish one or more contracts that will maximize the resources of all parties to most effectively meet the needs of NCTCOG and public sector entities of the TXShare Cooperative.

Section 4.5 Proposal Evaluation Criteria

Typographical Error – The “Description” field for Technical Proposal lists a total of “0%” as the maximum points. This is hereby corrected to 30% to match the data to the right in the ‘Points’ field.

Attachment A – Price Proposal

Service Category II – Asset Inventory: Unit modification from “each” to “lane mile”. Items 9, 10, 11, 13, and 14 are hereby so modified. Attachment A has been updated in Public Purchase as Attachment A Revised. Please utilize this document for your proposal purposes.

Questions and Answers

The following questions were submitted by potential proposers and are answered below. Questions are indicated by standard type and answers indicated by **bold-face type**.

Question #1

Must the vendors provide services using a van? What if we have an alternative type of collection, like using vehicles that are already on the road?

Answer 1: As long as your collection method meets the standard described within the RFP, it should not be a disqualifying factor.

Question #2

Mobilization is not anticipated in this RFP, isn't that correct?

Answer 2: That is correct – mobilization fees are not to be included in this offering.

Question #3

Don't activities in Service Category 3 constitute engineering services?

Answer 3: No, those do not.

Question #4

there are multiple service areas you can select which ones you're going to respond to and tabs B there's an executive summary. I would assume that would be an overarching, but some of the Tab D specifically technical proposal. Would there be a tab for each service area that one is proposing, or would there be a tab that covers all service areas that one is proposing on?

Answer 4: Please provide a single Attachment A for all service areas you are able to provide to. Please be advised that you may provide services wherever you are capable of doing so – but you are not obligated to service areas simply because you've listed them on your RFP response. For example, if your Firm cannot provide services today in Washington State, but you identify that you will service all 50 states because you anticipate expansion in the future – that is fine. You cannot be obligated to perform services in an area that you are not physically present in, but it may be a benefit to have that option during the multiple-year long term of the contract.

Question #5

In regards to Service Category 1, #1. Can you define what is meant by "geometrics"?

[Automatically and continuously measure pavement cracking, texture, rutting and geometrics. Equipment used for rut measurement shall be capable of measuring both wheel track ruts simultaneously.]

Answer 5: "Geometrics" refers to the dimensions and arrangements of roadway features, including, but not limited to, width, presence of curb, shoulders, and intersections.

Question #6

In regards to category 4, #28. After the bid is awarded, can the selected vendor(s) receive historical data on inventory date and pavement age?

Answer 6: Existing TxShare Member Entities who are former consumers of this project may elect to provide their historical data to any awarded firm that they select to provide services. The NCTCOG does not possess or maintain any data related to the delivery of Pavement Analysis services delivered to TxShare Member Entities under these contracts.

Question #7

In regards to category 7, #44. What is meant by point asset vs. linear asset?

1. [From Exhibit B in narrative: Generic asset types, allowing for any item within line of sight of the collection vehicle.
 - a. Above ground point asset
 - b. Above ground linear asset
 - c. At grade point asset
 - d. At grade linear asset]

Answer 7: A point asset exists in one location and does not extend to an additional location. An example would be a stop sign. A linear asset extends between multiple points. An example would be striping.

Question #8

Is a Texas engineering registration required to submit a proposal or is this something we can acquire after award?

Answer 8: Engineering services are not included as a part of this solicitation or any resulting Master Services Agreement.

Question #9

Is it possible to seek an extension of proposal submission timeline by a week?

Answer 9: NCTCOG will extend the proposal submission timeline to 2:00 PM CT, February 24, 2023.

Question #10

Does NCTCOG have a tangible project for any of the service categories?

Answer 10: The Pavement Analysis Services program allows TXShare-participating entities to choose from selected vendor/s to contract for pavement analysis services. This service has been provided by NCTCOG for more than five years and has been utilized by multiple member governments. NCTCOG itself will not procure services from the vendor/s.

Question #11

Can we have access to the recording of the Pre-Proposal Meeting from January 27th? It is currently saved on the NCTCOG SharePoint and is inaccessible to members outside of NCTCOG.

Answer 11: The recording can be sent to entities who request a copy of it. It is 400 megabytes in size – so it will have to send using FTP transfer.

Question #12

NCTCOG has provided RFP Attachment A, Pricing Proposal Form. The unit used for said Excel file is either Lane Mile, Linear Foot, Each, etc. These units can be unclear for agencies and vendors. The term lane miles does not correlate to "test miles" because for some functional classes, we would only collect one pass, while on others we would collect two passes. It is easier to come up with the number of test miles when working with the agency and finalizing a contract. In the previous contract, some vendors had a unit of test mile. Can we provide price per test mile rather than lane mile?

Answer 12: Please see the footnote 1. Lane miles are the selected choice of measurement.

Question #13

With regards to collecting assets, it is difficult to calculate cost based on a unit of "each." Most agencies do not know the number of assets (e.g., trees, curb ramp, etc.) at the start of a project. Typically, this is the first time they are doing an asset type inventory and we would not know the number of assets to finalize a contract with an agency. In the previous contract, some vendors had the unit of test mile for assets as well. Can we provide price per test mile rather than per each asset?

Answer 13: Please see revised Attachment A, which modifies some activities to use a unit of "lane miles" instead of "each."

Question #14

In RFP Exhibit B, Service Category #1, Item 5, the RFP states that pavement performance information such as rutting should have a minimum of seven sensors (include pricing for nine sensors as well) fatigue cracking, transverse cracking using a minimum of four sensors, and longitudinal cracking.


Most vendors use LCMS to automatically geo-tag, measure, detect, and quantify all key functional parameters of pavement in a single pass, including (but not limited to): cracking, rutting, texture, potholes, bleeding, shoving, raveling, and roughness. With regards to rutting, we would only use the LCMS system (two sensors to calculate rutting for each wheel track ruts. Similarly, for fatigue cracking, transverse cracking, and longitudinal cracking, we use our LCMS system. Please provide clarification.

Answer 14: If LCMS provides with two sensors output that is equivalent to output of the seven and four sensors described above, please document this in the proposal.

Craig Johnson
Senior Purchasing Manager

Proposers: Please acknowledge and return a copy of this Addendum with your proposal.

COMPANY NAME: Data Transfer Solutions, LLC

SIGNATURE: 

NOTE: Company name and signature must be the same as on the RFP documents.

TAB A COVER SHEET

TXShare

Your Public Sector Solutions Center

REQUEST FOR PROPOSALS
For
PAVEMENT ANALYSIS AND RELATED SERVICES
RFP # 2022-063

Sealed proposals will be accepted until 2:00 PM CT, Tuesday February 24, 2023, and then publicly opened and read aloud thereafter.

Data Transfer Solutions, LLC

Legal Name of Proposing Firm

Donna M. Huey

President

Contact Person

Title

(407) 382-5222

donna.huey@atkinsglobal.com

Telephone Number

E-Mail Address

482 S. Keller Road, Suite 300

Orlando, Florida

32810

Street Address of Principal Place of Business

City/State

Zip

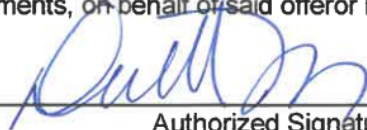
Complete Mailing Address

City/State

Zip

Acknowledgment of Addenda: #1 X #2 _____ #3 _____ #4 _____ #5 _____

By signing below, you hereby certify that the information contained in this proposal and any attachments is true and correct, and may be viewed as an accurate representation of proposed services to be provided by this organization. You agree that failure to submit all requested information may result in rejection of your company's proposal as non-responsive. You certify that no employee, board member, or agent of the North Central Texas Council of Governments has assisted in the preparation of this proposal. You acknowledge that you have read and understand the requirements and provisions of this solicitation and that the organization will comply with the regulations and other applicable local, state, and federal regulations and directives in the implementation of this contract. And furthermore that I certify that I am legally authorized to sign this offer and to submit it to the North Central Texas Council of Governments, on behalf of said offeror by authority of its governing body.



Authorized Signature

TAB B EXECUTIVE SUMMARY

Since being selected as a NCTCOG Service Provider on the original RFQ for Pavement Analysis Services in 2016, **Data Transfer Solutions, LLC (DTS)**, has completed projects for over **10 NCTCOG Member Agencies** and has provided **\$16,725.51** in administrative fees to the NCTCOG. DTS has a **proven record** of providing high-quality services for NCTCOG Member Agencies and has a **strong desire** to continue to be able to provide these services.

Formed in 2006, DTS is a transportation planning, engineering, GIS and asset management solutions company headquartered in Orlando. In the last 5 years, DTS has compiled asset data for over 100 asset management projects including videolog applications, pavement condition surveys and roadway geometrics, signs, manholes, inlets, guardrails, fire hydrants, sidewalks, signals and pavement markings, among many others. **DTS is a Registered Engineering Firm by the State of Texas and has Texas Professional Engineers on staff available for this contract.** DTS is a Business Unit within Atkins North America, Inc., a wholly owned subsidiary of SNC-Lavalin Group, Inc. The DTS team also includes **Aerial Ambiance**, a Texas SBE/WBE/MBE firm with strong a background in bridge condition assessments utilizing Unmanned Aerial Systems (UAS).

DTS is committed to timely and accurate performance for NCTCOG Member Agencies and has 5 Mobile Asset Collection (MAC) vehicles available for these projects. DTS is the only firm responding that provides the full lifecycle of asset management services in house. Our knowledge, expertise and experience cover the gamut from data collection and analysis through maintenance and ongoing management. DTS has rigorously tested equipment that is independently certified by the Texas A&M Transportation Institute (TTI) and International Cybernetics Corporation (ICC). The TTI certifications were obtained in 2015 to present thru 2023.

A partial listing of DTS' pavement or ROW data collection clients includes San Antonio, TX; Bexar County, TX; Houston, TX; Austin, TX; El Paso, TX; Fort Worth, TX; Amarillo, TX; Arlington, TX; Plano, TX; Galveston, TX; New Braunfels, TX; New York City, NY; Charlotte, NC; Indianapolis MPO, IN; Orlando, FL; Albuquerque, NM; Salt Lake City, UT; Knoxville, TN; New York State DOT; Arizona DOT; New Jersey DOT; Colorado DOT; Rhode Island DOT; Minnesota DOT; Delaware DOT and Florida DOT. Additionally, DTS has been selected as a service provider for pavement data collection services for the Houston Galveston Area Council Buy (HGAC) contract.

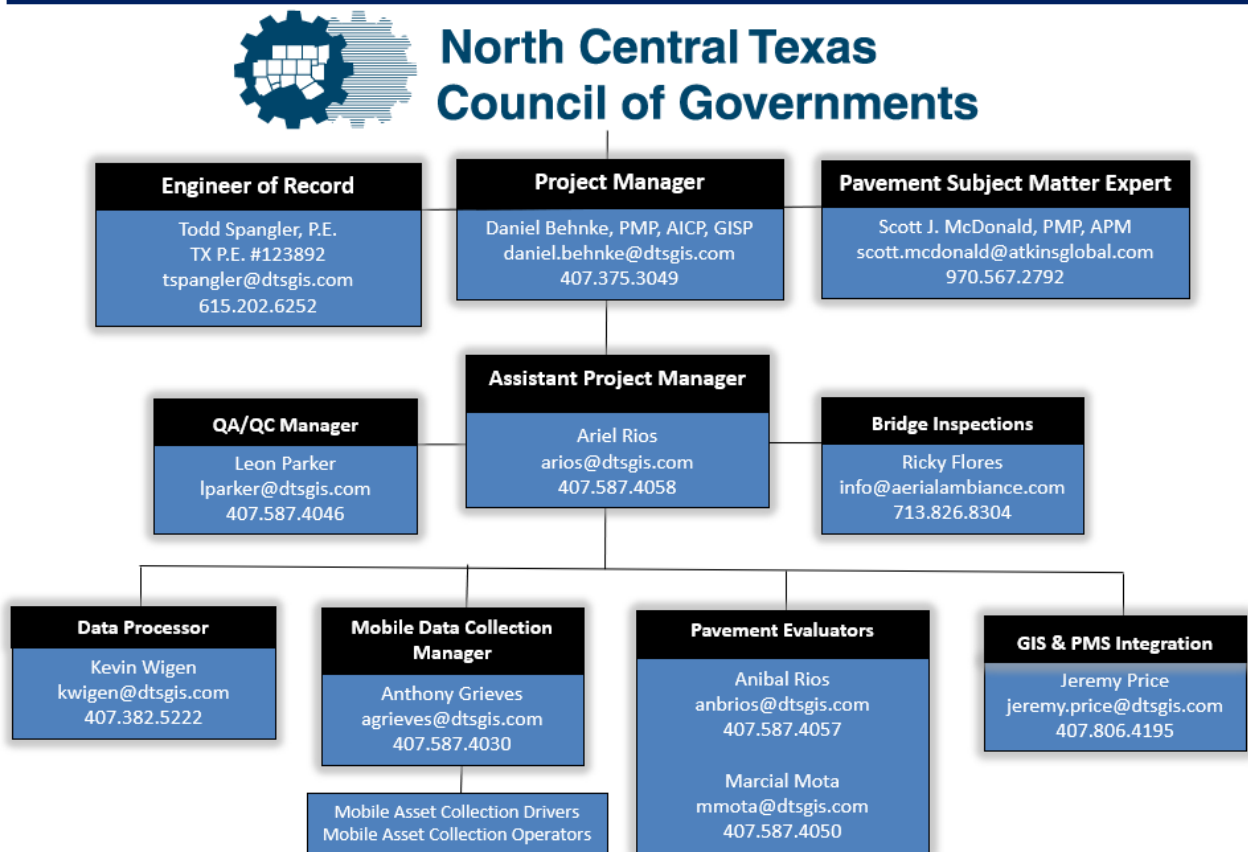
Our goal is to demonstrate that the DTS team employs an approach to mobile data collection survey and pavement management reporting that is **repeatable and defensible across survey years, is GIS-centric at its core and is a quantitative approach that relies upon standards and procedures that can be applied for pavement management optimization. All data will be formatted to meet the ASTM D6433 Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys standard for pavement condition index and the ASTM E1926 standard for international roughness index.** DTS routinely provides the required elements requested by the NCTCOG and will provide a transparent collection and analysis process focused on quantifiable, GIS-centric workflows.

As DTS has performed similar services in the past, we envision a role where we will continue to be part of a long-term solution in working with the NCTCOG to perform professional asset management services. As the DTS service line continues to evolve, DTS no longer offers in-house services for line item 6 (Friction Testing) and line item 7 (Ground Penetrating Radar), but if selected to continue being a NCTCOG Service Provider, DTS will commit to utilizing the services of other NCTCOG selected service providers to offer these services to NCTCOG Member Agencies.

TAB C EXPERIENCE & KEY PERSONNEL

Many of the same DTS team members that were a part of the 2016 NCTCOG RFQ DTS selection for Pavement Analysis Services remain as a part of the core DTS team and have worked with numerous NCTCOG Member Agencies on multiple cycles of pavement and asset data collection projects within that timeframe. All DTS team members, including managers and supervisors, who will be involved in any NCTCOG Member Agency projects are listed in the below organizational chart. (More in-depth individual resumes are provided in the Appendix.) When interfacing with any NCTCOG Member Agency, the NCTCOG logo in the below organizational chart can be replaced with the Member Agency in question in order to detail how the DTS team interfaces with any NCTCOG Member Agency.

PROJECT ORGANIZATION AND STAFFING CHART



DTS Team Organizational Chart (Individual resumes included in Appendix 1)

1. ***An overview and brief history of the Respondent, and a description of what uniquely qualifies the Respondent for this service.***

The DTS team will provide a safe and cost-effective collection and extraction methodology that will save time and money while meeting or exceeding client expectations on both time and budget.

DTS provides a transparent collection and analysis process focused on quantifiable, GIS-centric workflows. These workflows will be transferred to the NCTCOG Member Agencies so that the investment in this data can be leveraged for other purposes as well as into the future. The DTS team provides:

- **performance of all elements of work** - through our fleet of collection vehicles, internally- developed GIS-centric workflows and web-based data access tools
- **highly accurate data** – utilizing state plane coordinates, rigorously calibrated collection equipment and state-of-the-art data reduction techniques
- **proven, systems-compatible technology** – allowing Member Agencies to view, manipulate and analyze the data efficiently, accurately and with minimal subject-matter expertise.
- **economical solution** – providing a “collect once, exploit many times” solution. The approach allows for a single-pass collection of data utilizing multiple sensor technology, enabling NCTCOG Member Agencies to make informed management decisions from a “point-in-time” collection.
- **single-pass collection** – utilizing a complete view of the roadway, coupling images, inertial measurement, precise distance measurement and rigorous camera calibration that utilizes a “single heartbeat” to correlate all of these sensors into one single trajectory solution. This ensures a high level of accuracy and quality in the data.

DTS will provide all necessary field inspectors, vehicles, tools, equipment and traffic control (not needed) required to perform this work.

2. ***Texas and/or other state registrations. Relevant testing accreditations and equipment certifications.***

See the following certifications on the pages below

- **DTS Current TTI Certification**
- **Engineer of Record: Todd Spangler, P.E.**
- **Assistant Project Manager: Ariel Rios (Pavement Rater Certification)**
- **Bridge Inspections: Ricky Flakes (FAA Certification)**
- **Pavement Evaluators: Anibal Rios & Marcial Mota (Pavement Rater Certifications):**

DTS TTI Certification



Texas A&M Transportation Institute
The Texas A&M University System
3135 TAMU
College Station, TX 77843-3135
979-317-2315
<http://tti.tamu.edu>

TEX-1001-S PROFILER CERTIFICATION RESULTS

Profile Operator:	Brian Coffey
Wheel path(s) tested:	Left and right wheel paths
Surface types tested:	Hot-mix asphalt (HMA) and Portland cement concrete (PCC) sections
Test date:	07/06/2022
Test administered by:	E. Fernando and G. Harrison
Inertial profiler model:	IRISPRO
Inertial profiler serial #:	679
Inertial profiler VIN:	1FBZX2YM7KKB70731
Laser type:	LMI Gocator line lasers with footprint oriented at 45-degree angle
Filter type:	Butterworth band pass filter
Filter program:	Eval_TxCERT_9.09.Exe
Version #:	April 8, 2009
Comment(s):	
SUMMARY OF TEST RESULTS	
D-mix medium smooth	PASSED TxDOT Test Method Tex-1001-S
D-mix smooth	PASSED TxDOT Test Method Tex-1001-S
PFC	PASSED TxDOT Test Method Tex-1001-S
SMA	PASSED TxDOT Test Method Tex-1001-S
Transversely grooved (medium smooth) PCC	PASSED TxDOT Test Method Tex-1001-S
Transversely grooved (smooth) PCC	PASSED TxDOT Test Method Tex-1001-S
Longitudinally grooved PCC	PASSED TxDOT Test Method Tex-1001-S
OVERALL TEST RESULT	PASSED TEX-1001-S HMA/PCC1 CERTIFICATION

Engineer of Record: Todd Spangler



Assistant Project Manager: Ariel Rios (Pavement Rater Certification)



Bridge Inspections: Ricky Flakes (FAA Certification)



Pavement Evaluator: Anibal Rios (Pavement Rater Certification)





Pavement Evaluator: Marcial Mota (Pavement Rater Certification)





- 3. A description of services the Respondent has provided in the past five years that demonstrates the Respondent's capability to provide the proposed services. Include the nature of the services provided, scope of activities, and the organization for which the service was provided. Where possible, focus should be placed on relevant experience with governmental entities.**

The key DTS staff members proposed have been collecting data with mobile asset collection vehicles for well over 5 years and this experience has exceeded collection of over 150,000 miles of roadway and condition ratings on over 3,000,000 assets for over 100 jurisdictions.

DTS has worked with numerous agencies on pavement data collection services and below is a list of such clients and projects. The services provided for these agencies have been similar to those requested by the NCTCOG.

Pavement Asset Collection Clients			
Albuquerque, NM	Colleyville, TX	Indianapolis, IN	Rhode Island DOT
Amarillo, TX	Colorado DOT	Jefferson County, CO	Richland Hills, TX
Arlington, TX	Delaware DOT	Kingsport, TN	Rockwall, TX
Ascension Parish, LA	Denison, TX	Klamath Falls, OR	Salt Lake County, UT
Austin, TX	Dickinson, TX	Lakeland, FL	San Antonio, TX
Balcones Heights, TX	Duncanville, TX	Lewisville, TX	Seminole County, FL
Basalt, CO	El Paso, TX	Little Elm, TX	Sherman, TX
Bastrop County, TX	Farmington, NM	Mesquite, TX	South Lake Tahoe, CA
Beaufort County, SC	Fayetteville, NC	New Braunfels, TX	Southlake, TX
Bellaire, TX	Fulshear, TX	North Central Texas COG*	Stafford, TX
Bexar County, TX	Galveston, TX	Orlando, FL	Texarkana, TX
Brentwood, TN	Greenville, SC	Peoria, IL	Virginia Beach, VA
Brownsville, TX	Houston Galveston AC *	Pikes Peak Area COG, CO	Waller County, TX
Cedar Hill, TX	Houston, TX	Pitkin County, CO	West Palm Beach, FL
Charleston County, SC	Hutchins, TX	Plano, TX	Wickenburg, AZ
Charlotte, NC	Indianapolis MPO, IN	Renton, WA	Williamson County, TX

*On-call asset management contract vehicles with HGACbuy and NCTCOG SHARE

- 4. A summary listing of judgments or pending lawsuits or actions against; adverse contract actions, including termination(s), suspension, imposition of penalties, or other actions relating to failure to perform or deficiencies in fulfilling contractual obligations against Respondent. If applicable, include an explanation(s). If none, so state.**

The DTS team has no judgements, pending lawsuits, or actions against.

- 5. Provide information on any claim submitted by any client against the Respondent within the past two years related to the services provided by the Respondent or its key personnel. For purposes of this request, “claim” means a sum of money in dispute in excess of 5% of the Respondent’s fee for the services provided. If none, so state.**

The DTS team has no claims against.

TAB D TECHNICAL PROPOSAL

1. *Description of the services for which the Proposer is able to provide. Proposer must follow industry accepted practices for those same services they are able to provide.*

Our goal is to demonstrate to the NCTCOG that the DTS team employs an approach to mobile data collection survey and pavement management reporting that is repeatable and defensible across survey years, is GIS-centric at its core and is a quantitative approach that relies upon standards and procedures that can be applied for pavement management optimization. All data will be formatted to meet the ASTM D6433 standard for rating pavement. DTS will provide a transparent collection and analysis process focused on quantifiable, GIS-centric workflows. These workflows will be transferred to the Member Agencies so that the investment in this data can be leveraged for other purposes as well as into the future.

Planning and Organizing

Our first step in our project management approach is to develop the plan and indeed plan for a successful project execution. This starts with meeting with the client and collecting the requirements and defining the project scope. From there we will develop a detailed work breakdown structure. Our management team will define the activities and sequence them in a logical and efficient fashion providing the highest value to the NCTCOG member. The result of this will be a schedule that is achievable. Moreover, the plan will include a human resource plan, communication plan and risk management plan.

Scheduling

The schedule that is one of the outputs of the planning and organizational exercise is one of the most important documents for tracking, monitoring and controlling project performance.

It is comprised of the activity sequences, durations, resource requirements and constraints. Our proposed project manager and team of supporting personnel are particularly adept at managing scope to budget to ensure our clients receive the greatest value for the project. Strict schedule adherence is a cornerstone to any project. DTS will maintain a project management website that will serve as a centralized, online data repository for all project materials. The website will contain the scope of work, project schedule, personnel resources and all documents related to the status of the project. The progress of the data collection vehicle will be tracked and uploaded daily or weekly as a map and available on the project management website. This will also be updated on the master project schedule as the extraction and inspection progresses, so there will be no surprises in terms of schedule issues. This has proven to be a very useful tool for communicating information between team members, management, and personnel.

Controlling and Coordinating

During the execution phase of the project, planning updates and re-baselining are two important and on-going activities that are necessary to ensure a successful project.

Changes in activity durations (due to uncontrollable circumstances such as weather and mechanical failures), changes in resources or unanticipated risks can all influence the project's schedule. Our team will constantly monitor the project to identify these variances and work to develop the appropriate project management

responses. These responses can include change requests that if approved can modify the project plan and require re-baselining. During this phase of the project our management team will:

- direct and manage project execution,
- perform quality assurance,
- manage the project team,
- distribute Information,
- coordinate and manage stakeholders,
- control the project work,
- perform integrated change control,
- control scope, schedule and costs,
- report performance and
- manage risk.

Project Understanding and Approach:

Project Management

As a nationally diverse company, DTS has successfully implemented tools that assist our project managers by facilitating communication and the ability to manage resources for asset management projects across the country. DTS will provide engineering, planning and administrative services in conjunction with the pavement condition survey.

DTS will utilize our project management website to house project documents, schedules, project update information and project-critical items. DTS has found this to be a useful tool for tracking project status and informing our clients of progress. In addition to the project management website, weekly or bi-weekly meetings will be established for the project duration between the client project manager and DTS and will be led by DTS' proposed Project Manager Daniel Behnke, AICP PMP GISP. These meetings are typically employed for short durations to inform the client of project schedule, project team activities and any issues needing additional input. Additional project team update meetings are scheduled with staff on an as-needed basis.

DTS also provides monthly progress reports that reflect the status of work completed to date, work anticipated to be completed in the next reporting period, problems/obstacles identified during the period and outstanding issues. These reports are attached to the project management website.

Inventory of Agency Road Network and Pavement Condition Data Collection

DTS will begin the project by meeting with the Agency to discuss goals of the pavement inventory as well as any asset management software integration requirements. DTS will work with the Agency to get an approved methodology before beginning collection of the network. Next, DTS will mobilize one or more Mobile Asset Collection (MAC) vehicles to conduct a pavement condition inventory on the agency centerline miles requested. DTS proposes to use its MAC vehicle line scan camera with laser illumination and four right-of-way cameras to capture ROW images to be used during the pavement rating process. The ROW images can be used to assess condition for ratings on other above-ground infrastructure including but not limited to sidewalks, ADA ramps, roadway signs, curb and gutter, manhole covers, valves, guardrail, light poles, signals, pavement markings and pavement striping, etc.



DTS Mobile Asset Collection (MAC) Van

The DTS Mobile Asset Collection vehicles are equipped with:

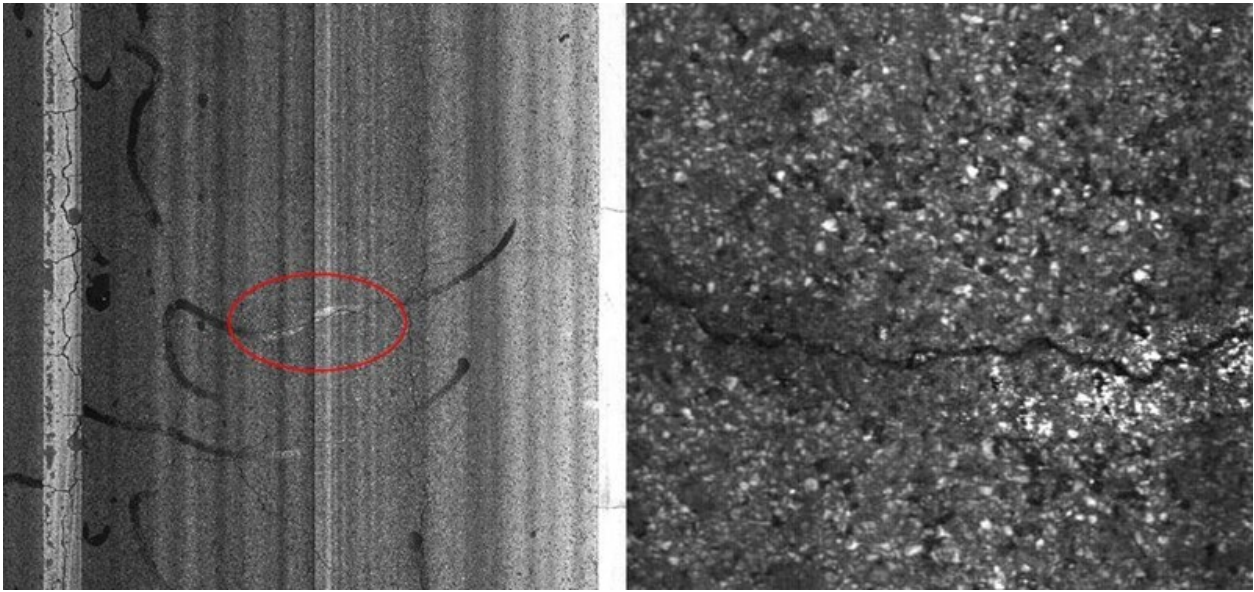
- **high-resolution right-of-way digital cameras (4)** – Allied Vision GigE Prosilica GX1920C, frame rate of 15 images per second and 1936 x 1456 color resolution
- **Laser 3D Crack Measurement System (LCMS-2) pavement imaging system** – collects high-definition 3D pavement images used to extract distress type severity and extent measurements.
- **ApplanixPOS220V inertial measuring unit (IMU)** – centimeter-level positioning of MAC van during collection
- **DMI equipment** – distance measuring instrument used for system integration
- **GPS equipment** – used for mapping level positioning of the vehicle, heading information and positional tagging of images. 2 positional units, 1 differential unit, providing sub-meter accuracy
- **Servers** – on board servers for storing data, processing images and storing profiler, GPS, DMI and IMU data
- **surface (road) profiler** – used for precise pavement ride and rut measurement

The MAC images and data collected will be defined in the data element delivery structure utilized by the Agency. The DTS MAC system collects all pavement and right-of-way images, IMU, DMI and profiler data concurrently. DTS will also provide digital images of all streets and roadways surveyed in a format compatible with Esri ArcGIS. These images are clipped at a distance of 12 feet and saved as industry-standard JPEGs. Our proposed solution involves the collection of images and subsequent processing of those images within a 24-hour time period. DTS relocates the images to an on-site server at the end of the collection day and then processes the images overnight to mitigate the risks associated with conflicting processes running on the same CPU during the collection process. Right-of-way photographs will be collected every 25 feet or more frequently and will provide image coverage along the roadway for any ROW assets and provide a quality assurance check of road surface condition.

Pavement Condition Assessment and Rating

DTS pavement imaging sensors are oriented from nadir (straight-down) to achieve the best perspective, laser-illuminated to ensure uniform image contrast and GIS-integrated to provide geospatial distress vectors (points, lines and polygons) that are loaded and verified using GIS.

- DTS will utilize a downward-facing, progressive line scan camera that provides high-resolution images (1mm pixel, 4,000 pixels wide, and ~12 feet width) of the pavement surface to clearly detect and quantify distresses.
- pavement surface imaging (JPEG format) will span, at a minimum, the data collection lane from left lane stripe to right lane stripe, and will provide 100% continuous pavement coverage
- image resolution will be such that all visual cracking distresses can be accurately identified and quantified
- images will have a minimum horizontal resolution of 4,000 pixels or better
- images will be synchronized with each local government's centerline file
- DTS will collect longitudinal profile and roughness data (IRI) to provide a ride condition index for each segment to be used in calculation of the segment PCI

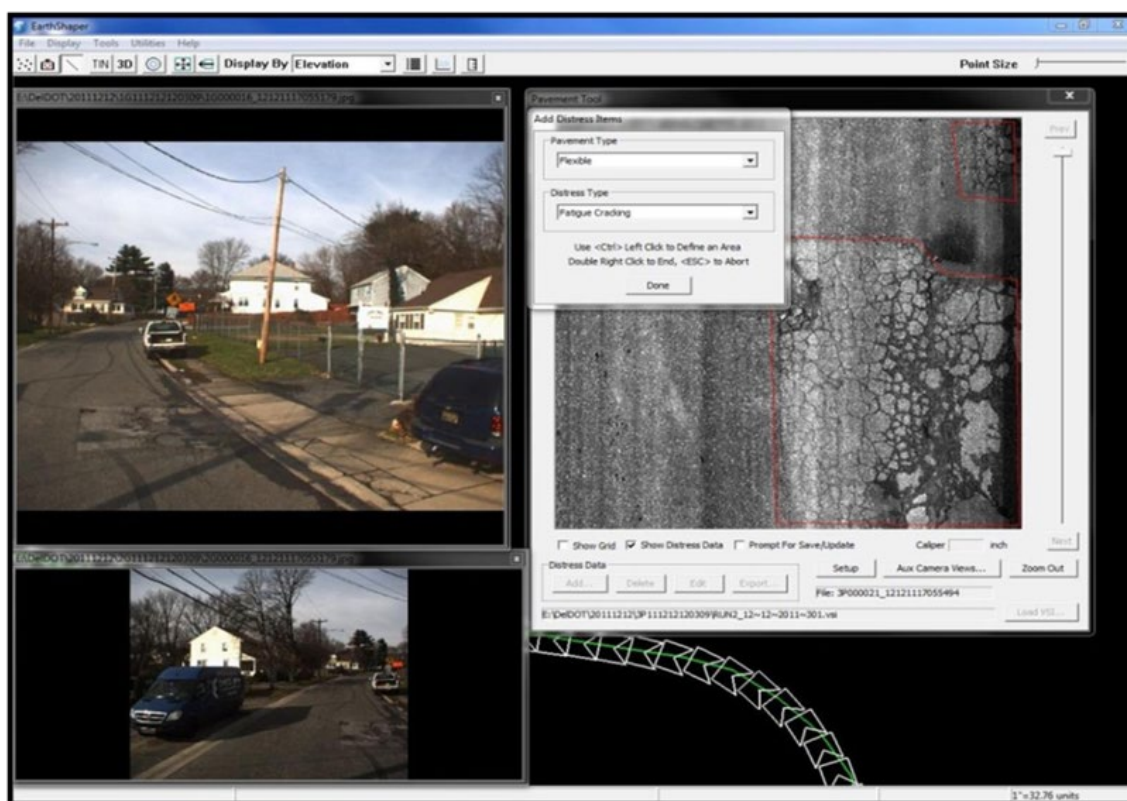


Original Image and Zoomed Image

Pavement Evaluation

DTS begins the pavement distress rating process concurrent with image collection. Once pavement image and distress mapping processing are complete for each collection day, DTS' experienced pavement evaluators review each street segment's images for a complete and thorough evaluation of the existing pavement condition per the ASTM D6433 concrete and asphalt pavement distress rating process including the following distresses: alligator cracking, longitudinal cracking, transverse cracking, raveling, flushing and patching. The EarthShaper software gives DTS a distinct advantage over competitive software packages because it removes the "black box" portion of pavement rating. All distress vectors can be viewed and edited through this workflow, resulting in a more accurate product for the NCTCOG and its members. It also adds another element to the QA/QC process, allowing for more accurate data review and confirmation through a streamlined data reduction workflow.

DTS has designed the EarthShaper asset data extraction software by optimizing the performance of visualization/QC of the roadway condition and inventory data. Moreover, the EarthShaper application allows for efficient data creation through the use of simple point, line and polygon vector tools. It is capable of producing direct visualizations of pavement distresses. Users can also assign condition inventory ratings to data inside of EarthShaper.



Pavement Condition Evaluation within EarthShaper™ software

The EarthShaper software is capable of accommodating any asset/attribute combination through a configurable data model. This model can be set up specifically for the Agency data models and is 100% Esri-integrated to streamline the data capture process into a GIS.

DTS is very experienced with collecting and reporting ASTM E950 and ASTM D6433 data. IRI (International Roughness Index) will be collected using equipment that meets ASTM standards. DTS utilizes a surface profiling system manufactured by International Cybernetics Corporation (ICC) with the required number of sensors for evaluating the smoothness of pavement. The Profiler uses infrared lasers and precision accelerometers to obtain accurate and precise profile measurements at speeds up to 65 mph.

DTS MAC technicians have been trained and certified by ICC for the operation of road profilers and imaging systems. The proposed MAC vehicles for this project have been certified by ICC. **Furthermore, DTS' MAC vehicle has received independent inertial profiler certification from the Texas A&M Transportation Institute from 2015 thru 2023.**

Pavement Management System Implementation

DTS will review each Agency's pavement management software and will successfully import the collected data into the system of record. The DTS team has a cadre of computer scientists on staff that work with all relational databases and spatial data formats in the marketplace and have successfully matched the data schema needed for data imports on over 100 projects. If the NCTCOG member agency does not have a pavement management

system, then DTS will work with the Agency to recommend various software and hardware requirements that best meet the individual agencies requirements.

Final Report for Pavement Condition

Once the Pavement Condition Index (PCI) has been calculated, DTS will provide the Agency a 5-year and 10-year pavement rehab/resurfacing/repair programs based on the Agency's pavement condition evaluation. These programs can be used to establish the Agency's annual maintenance budget. Our team can provide segment level pavement maintenance costs based on the Agency's maintenance practices. **The 5-year and 10-year work programs can be used for reporting budget needs or shortfalls to boards, councils and committees. DTS has performed this task for many municipal government staff members on past projects and is well-versed in presenting relevant information to local officials and constituents that support the proposed budget requests.**

A Final Pavement Condition Index Report and pavement preservation plan will be delivered for the project including: executive summary, project methodology and pavement data, street segment PCI, annual pavement maintenance program with recommendations for improvement, repair and treatment types and development of unit cost estimates, budget deferral analysis with goals and priorities and guidelines for selecting treatments with ranking criteria, exhibits showing PCI and street segment length, lanes and pavement type, exhibits illustrating streets to be maintained based on annual budget and maintenance activity and signed by a Professional Engineer.

DTS will deliver a final GIS shapefile containing collected pavement data, PCI value, recommended maintenance activities and cost information separate from the pavement management system modules. DTS will work with the Agency to implement map modules so that pavement condition and other data can be integrated, displayed, and accessed through the map interface in a format consistent with the Participant's horizontal and vertical control network system.

Training

DTS will provide the Agency staff with the training required to effectively use the pavement management tools presented in this proposal. DTS has an extensive background in training development and instructional design. Training development encompasses a variety of delivery formats: interactive computer-based training, interactive training, PowerPoint presentations, desktop training exercises, video scenarios with role-play and paper-based user manuals. Since DTS offers such a wide variety of training opportunities in various formats, we are able to take advantage of multiple learning styles. The Agency's personnel will benefit from this unique approach by making better use of time.

Data Collection and Extraction Methodology for Roadway Assets in the ROW

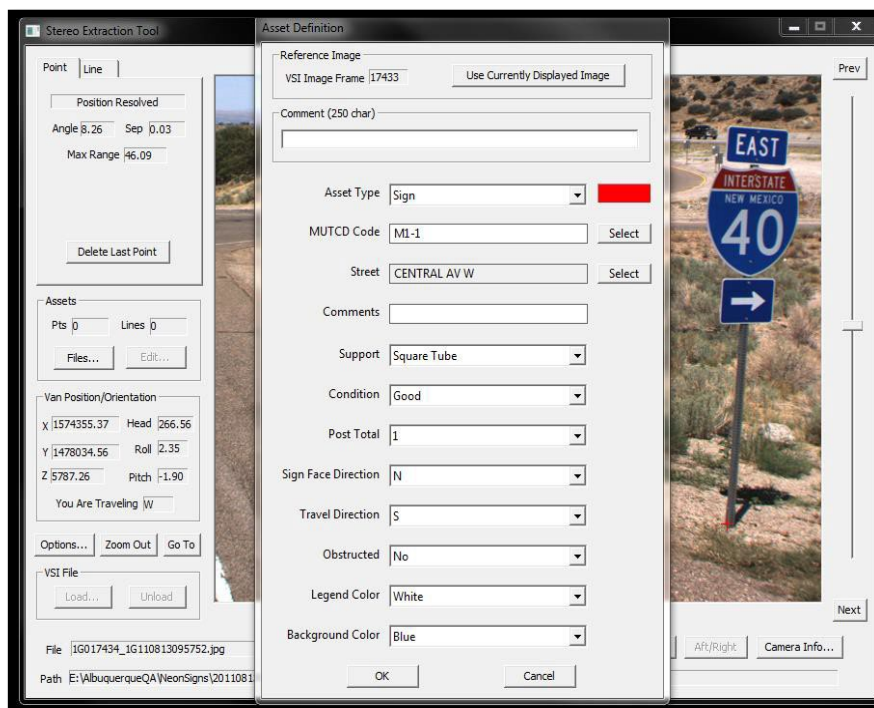
The Right-of-Way imagery and data models will be defined in the data element delivery structure required by the member agency of NCTCOG and will adhere to data standards for consumption into Esri ArcGIS and the Agency's asset management software. DTS understands that a member Agency may want to collect the following roadside assets: sidewalks, ADA ramps, roadway signs, curb and gutter, manhole covers, valves, signals, street lighting, pavement markings, pavement striping, shoulders, street trees, hot boxes, rumble strips, guardrails and fire hydrants.

Attribute Extraction

DTS' extraction team will set up and import the digital image log into the extraction and attribution software (EarthShaper) and proceed through each frame to identify the required assets on the photos.

DTS staff will use the image that best represents the roadside asset to locate it geographically. DTS will evaluate multiple images that depict a particular asset feature, and our staff will use the one that is the closest to the camera when the image was taken. This method increases the visibility of the asset and allows for a more accurate visual assessment. This also produces the best positional (coordinate) quality.

DTS utilizes its own EarthShaper software to perform feature extraction and attribution of asset data. **Since EarthShaper incorporates the use of modern GIS and database technologies, assets can be identified and mapped spatially as points, lines or polygons and the attributes are entered at the same time. The EarthShaper software is capable of accommodating ANY asset/attribute combination through a configurable data model.** This model can be set up specifically for the Member Agency's data models and is 100% Esri-integrated to streamline the data capture process into a GIS. The software also enables a high level of "workflow process continuity" by "fusing" the capabilities of the external sensors and GIS and database technologies in a singular system. This allows the DTS team to fully leverage the capabilities of each component in the most efficient manner possible and results in a high level of data quality, integrity and consistency.



Asset Extraction from ROW Imagery Utilizing EarthShaper™

2. Description of the Respondent's process for responding to an order for services.

Since 2016, anytime DTS receives an inquiry for services from an NCTCOG Member Agency, the first action DTS takes is to have a conversation with the member agency to verify if DTS can successfully complete the services needed by the agency in the timeframe requested by the agency. If not, DTS has recommended other NCTCOG service providers to fulfill those needs. If DTS is able to fulfill the needs of the member agency, our teams sit down

together to fill out the NCTCOG Pavement Analysis Services Request for Services document and begin the NCTCOG contract project.

3. *Description of any automated systems the Respondent utilizes to facilitate fulfillment of services under this RFP.*

DTS is continuously seeking methodologies to improve our services to our clients. In recent years, rapid advances in Artificial Intelligence and Machine Learning have opened possibilities to additional pavement ratings via advanced computer algorithms. Because of this, DTS is now able to offer our clients their preferred choice of pavement rating methodology. DTS will always continue to offer traditional Pavement Condition Index (PCI) ratings via the ASTM D-6433 Standards, but DTS is now also able to offer our clients a 100% pavement rating methodology via artificial intelligence. DTS will work with NCTCOG Member Agencies to determine their preferred pavement rating methodology.

DTS has extensive and unsurpassed pavement and asset management experience within the Metroplex region. DTS has performed previous pavement condition assessments for many NCTCOG Member Agencies and advances in technology are allowing the opportunity to move from a sampling methodology to 100% rating of the roads that are surveyed.

4. *Information showing the team's project understanding and approach for each work category being submitted; the project manager's experience with similar projects in the last five (5) years; similar project-related experience of the task leaders responsible for the major work categories in the last five (5) years; and other pertinent information. For each similar project referenced, identify either the project manager's or the task leader's specific role(s) and work contributed.*

As a certified planner, project manager, and GIS professional, DTS' Proposed Project Manager Daniel Behnke provides a unique skill set to the projects that he oversees. While strictly adhering to Project Management Institute (PMI) best practices for project management, Daniel also recognizes the importance of including all project stakeholders, consistent and constant project communications, project planning and scheduling, and accurate data creation and delivery. Daniel has an intimate knowledge of all facets of delivering a successful DTS pavement condition index project. Since his hiring at DTS in 2010, Daniel has both driven and operated the DTS MAC data collection vehicles. He has performed pavement rating and asset feature extraction, compiled pavement and asset data deliveries to clients, performed QA/QC oversight on projects, delivered final reports to clients, and presented final project results to multiple councils and elected officials. Daniel is an active member of the Urban and Regional Information Systems Association (URISA) and was named their Young GIS Professional of the Year in 2017.

Daniel has served as a DTS project manager on over 100 projects for DTS and has been responsible for overseeing the collection and processing of over 100,000 lane miles of LiDAR, photolog, positional IRI, rutting and pavement imaging data. In addition to general computer applications, he has experience with a variety of relevant processing and extraction software packages such as RoadMatrix, VUEWorks®, Cartegraph, MicroPAVER, StreetSaver, Trident Analyst and EarthShaper™. **Daniel will oversee every aspect of the project and will act as a liaison between NCTCOG, its agencies and the DTS team.** He will delegate the appropriate duties to the Local Project Collection Team, and will assist in the communication between the departments. Daniel will coordinate project scheduling, data collection, data surveys and data delivery, and he will troubleshoot project-related issues to ensure customer

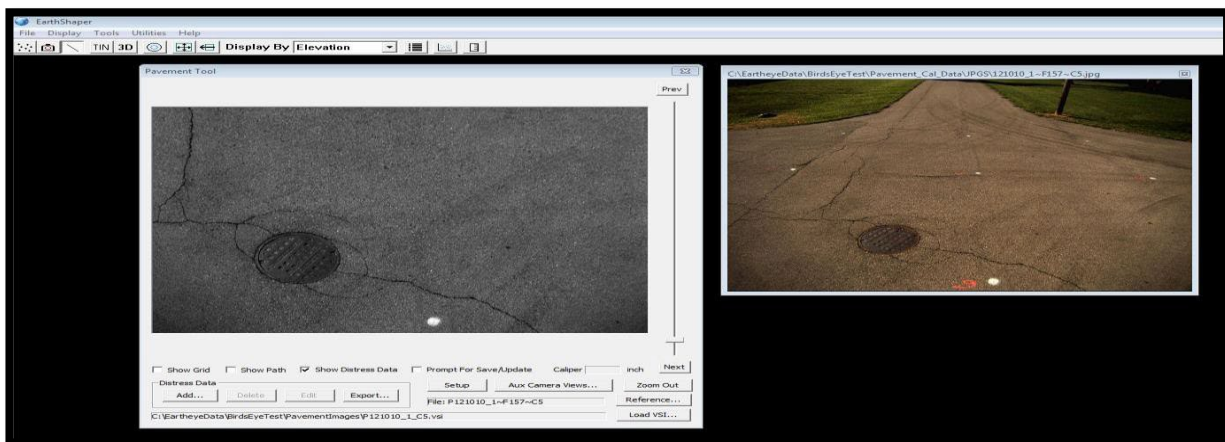
satisfaction as well as monitor the project timeline and quality adherence process. He will be responsible for ensuring data meets specification of NCTCOG member agencies.

Over the last 5 years Daniel has managed numerous similar pavement management projects for DTS including the City of San Antonio, TX; City of Houston, TX; City of Arlington, TX; City of Fort Worth, TX; City of Duncanville, TX; City of Castle Hills, TX and Town of Little Elm, TX. Daniel managed the pavement data collection and pavement condition index project for the Chicago Metropolitan Agency for Planning (CMAP). This project required data collection and coordination over a 7-county region with 284 individual government jurisdictions.

The key DTS staff members as outlined and proposed in the provided organizational chart have been working together and collecting data with mobile asset collection vehicles for over 5 years. This experience has exceeded collection of over 150,000 miles of roadway and condition ratings on over 3,000,000 assets including pavement imagery and mobile LiDAR for over 100 jurisdictions.

5. Description of the team's Quality Assurance/Quality Control procedures including what is standard practice for all stages of the project. The Contractor will be responsible for providing a quality control procedure to ensure that the pavement condition data is accurate and reproducible. The QC procedure will also verify that the data is accurately converted to shapefile and excel format and organized in a clear and concise manner.

DTS has a proven Quality Assurance/Quality Control procedure for all MAC data collection projects. DTS' QC procedures begin with our MAC collection process. For NCTCOG clients, a MAC calibration site is already established that consists of 10 point locations nailed, painted and surveyed in a location easily accessible. This calibration site is recorded in the four cardinal directions at the beginning and end of each collection day.



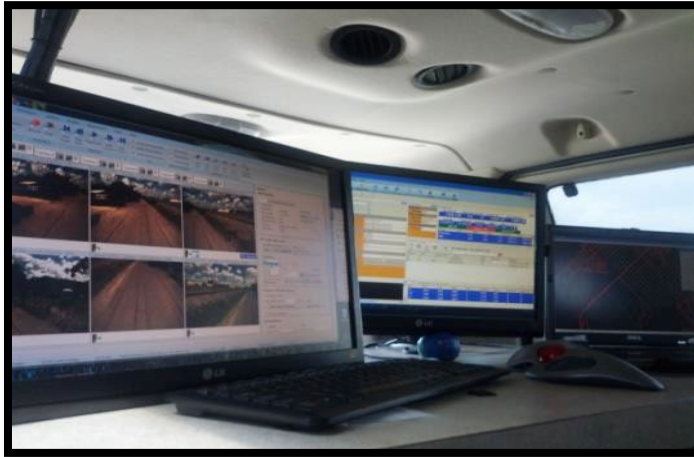
Calibration Site Checked Daily to Ensure the Accuracy of Collection

The MAC technician will check each camera's exposure rate, image quality and GPS and IMU operation to ensure the MAC system is recording the image, GPS, DMI, and IMU data correctly and that the GPS location is within the stated project tolerance. Each collection day's calibration collection will be documented in the MAC collection log book along with the date, location, technician and driver names, and any technical or collection issues observed during the collection day and DMI calibration runs.

DTS maintains a Microsoft Access database of any collection or other project issues. All project team personnel

including NCTCOG personnel will have access to the database to log comments, check the status of issues and have one central repository to track issues and resolutions.

During image collection, the MAC technician reviews the images collected on-screen as they are collected and any issue with image clarity requires the collection run to end and the image quality issue to be resolved.



On board Real-time Verification of Equipment and Collection Operating Correctly

Once resolved, the collection run begins from the beginning for the road segment collected. The MAC technician also monitors GPS reception during collection. If GPS reception is lost (measured using PDOP – positional dilution of precision), the MAC technician stops the collection and resolves the GPS reception issue. Collection begins again once the GPS reception issue is resolved. All issues resulting in the collection run being stopped will be recorded in the MAC collection log book along with the resolution.

Below are examples of Algorithm processing, the reporting process, and the policies used to ensure the highest accuracy of data being collected.

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The screenshot displays the 'Process Files In Multiple Directories' window of the DTS software. The interface is divided into several sections:

- Top Bar:** Includes tabs for 'Process Files In Multiple Directories' and 'Process Files In Directory'. Below these are 'Reports' and 'Graph' tabs.
- Report Section:** Contains dropdowns for 'Report' (Interval Report), 'Style' (General), and 'Units' (Miles). It also has buttons for 'Clear Output Directory', 'Output File Ext' (set to .bit), 'Print Report', 'Display Report', 'Print Display', 'Add Rpt Type to File Name', 'Add Wavelength', and 'File Suffix'.
- Input/Output Section:** Features 'Input PPF File', 'Output PPF File', 'Load', and 'Save' buttons. A 'Configuration File' path is shown as 'C:\NCCMDR\WINREPORT\WORKSTATION.INI'.
- Navigation Tabs:** A row of tabs includes 'Interval', 'Rpt Hdr', 'PI Param', 'Gps/KML', 'Image', 'Texture', 'Slog', 'Control', 'PI/Roll Bar', 'Adv Opt', 'Format', 'Hdr Lbls', 'Rut Opt', and 'SurPro'.
- Interval Reporting Options:**
 - IRI:** Includes 'Avg/HCS' (Avg IRI), 'Scale' (in/mi), 'IRI MA Len' (25.00), and 'Tolerance' (126.72).
 - Rutting:** Includes 'Type' (No Neg Rut), 'Algorithm' (Default), and a checkbox for 'Use Old Print Format'.
 - Faulting:** Includes checkboxes for 'Expanded Fault Data', 'NEDOT Format', 'Max Fault', and 'Write Fault File'. It also has a 'Wheel Path' dropdown (Right) and 'Range Interval' (0.10) and 'Min. Height' (0.10) fields.
- Filter Options:**
 - Checkboxes for 'Apply 250mm Mov Avg', 'Use Elev File Format', 'DOS Filter', and 'Reverse Filter'.
 - Fields for 'Short Wavelength' (0.40), 'Long Wavelength' (300.00), and 'Moving Avg' (1).
 - 'Filter Type' dropdown (BW High Pass) and 'Max Delta Profile' (0.250).
 - Buttons for 'Add Leads to Profile', 'Lead In Dist' (299.87), 'Lead Out Dist' (299.87), and 'Append Leads to Profile List'.
- Report Controls:**
 - Checkboxes for 'Section Control', 'Roughness Control', 'Interval Control', 'Interval Reset', 'New Section on RefAdd', 'Use Speed File', 'Error Summary', 'Include Error Status', and 'Include RghOff Data'.
 - Fields for 'Interval' (0.100) and 'Spd Limit' (15.0).
- Event Options:**
 - Checkboxes for 'Add Section End', 'Use Offset from File', and 'Edit Mode'.
- Profile Interval Ctrl:**
 - Fields for 'Interval' (1.00) and 'Moving Avg' (1.00).
- Profile Stats:**
 - Checkboxes for 'Standard Dev', 'Mean', and 'RMS'.
- Bottom Left List:** A list of checkboxes for 'DMI', 'IRI', 'Rutting', 'Ride Number', 'Faulting', 'Speed', 'Texture', 'GPS', and 'RCI'. 'IRI', 'Rutting', 'Ride Number', 'Faulting', 'Speed', 'Texture', 'GPS', and 'RCI' are checked.

DTS employs an originator/checker procedure for processed and compiled data where the project engineer (originator) provides a qualified project QC checker to review and check processed and compiled data. The QC checker reviews calibration/correlation data and imagery for data anomalies, inconsistent pavement data, false positives (incorrect distress) on pavement distress vectors, and quality of post processed MAC imagery. The project manager, engineer and QC checker determine if any errors found require a run to be recollected and processed or reprocessed and reviewed again.

DTS' MAC crews perform daily vehicle and equipment checks. These checks include recording average ambient temperature, tire pressure, tire wear, brake system operation, headlights and signal checks, GPS reception and imaging system clarity. MAC logs are recorded by the MAC operator for each day of data/image collection. Log sheets are emailed to the project engineer and provided to the project QC checker for review and use while reviewing processed data anomalies or errors.

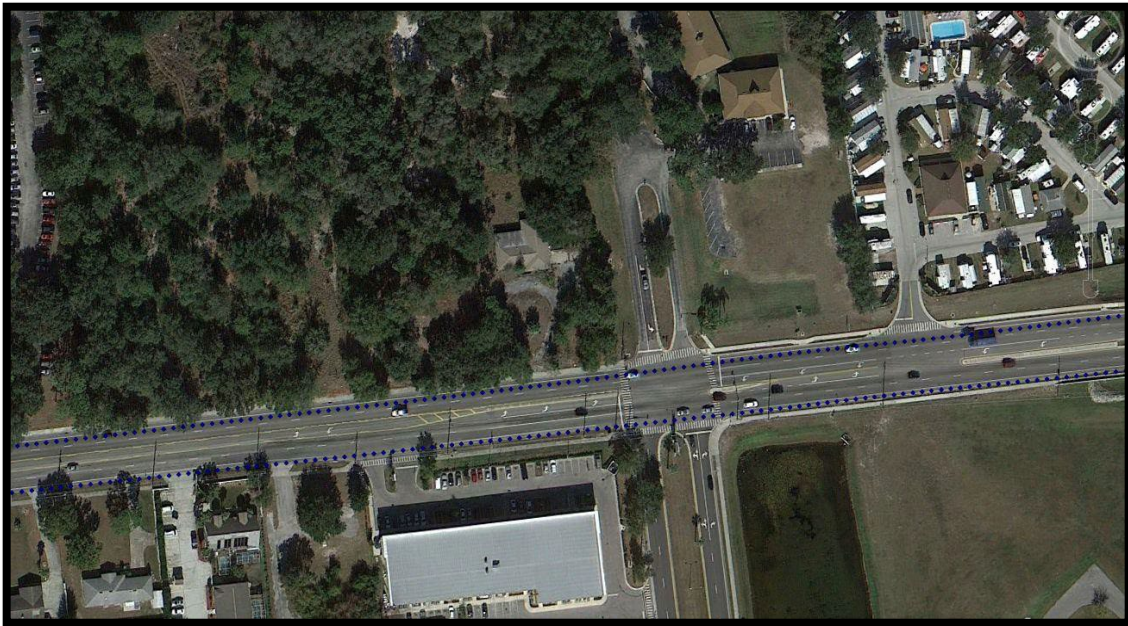
DTS' MAC LCMS system is certified annually by International Cybernetic Corporation for laser repeatability and accuracy. Each DTS MAC operator has also received LCMS collection training by International Cybernetic Corporation staff.

DTS utilizes Earthshaper (explained in the section 1 Description of Services section) for viewing captured images, creating distress records and a QA/QC of what exists by taking the distress data and providing GIS maps against aerial imagery.



Distress Mapping for Bexar County, TX

As an innovative approach to QC, DTS will perform a network accuracy check visually by creating Google Earth-compatible KML files of the processed image points and visually assessing where point locations fall in the images. This will be used as a secondary quality check to assess if any collected points appear to be outside the acceptable project specifications (not located near lane of travel).



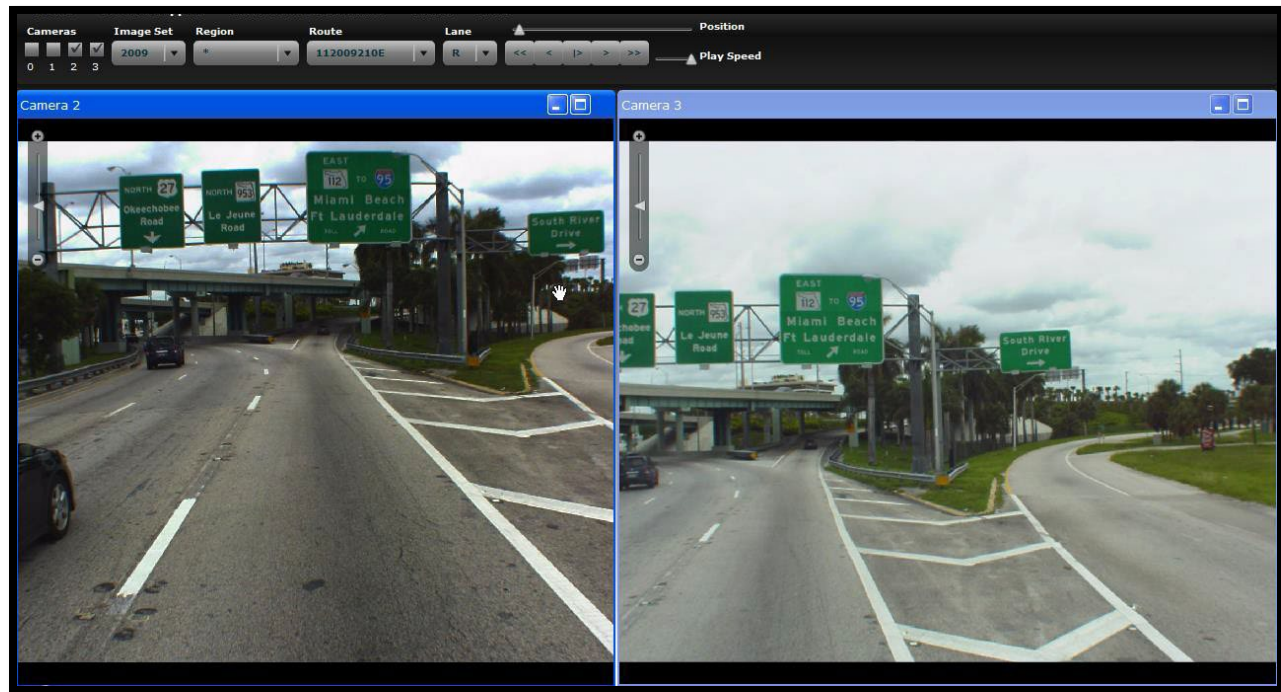
Example of GPS Tracks from MAC Vehicle

DTS will QC each road segment to verify images are sequential and spaced at calibrated distances and will verify each hard drive delivery for file format, naming and structure prior to each delivery to the client project manager. Any road segment found to not be collected in full length, in both directions or missing segments will be recollected and delivered.

The MAC system is capable of collecting all right-of-way images and pavement data concurrently. The MAC vehicles are outfitted with high-definition cameras that are utilized to take pictures along the right-of-way while traveling at highway speeds.

The collected images are clipped at a distance of approximately 15 feet for both forward and oblique- facing directions and the images are geo-referenced and saved as industry-standard JPEGs. The DTS team relocates the images to an on-site server at the end of the collection day and then processes the images overnight to ensure completeness within the data set. All right-of-way images will provide relative accuracy measurements of <1-foot and absolute accuracies to <1-meter.

Images – For this project, the DTS Mobile Asset Collection (MAC) vehicle will collect right-of-way roadside asset inventories. The vehicle will be configured to collect high definition images (1936 x 1456 pixel resolution) of the road right-of-way while traveling at highway speeds. There is no need for traffic control while the MAC vehicles are collecting ROW or pavement data.



Sample Images from the MAC vehicles

Image Quality – DTS will collect imagery during daylight hours only, with no rain, smoke, fog or other visibility obstructions. DTS uses automatic shutter adjustments to allow for on-the-fly image brightening or darkening to avoid poor image quality from sunlight, overcast or shadows. Any road segment that exhibits low image quality due to lighting will be recollected.

GPS – Satellite signal reception will be monitored during the calibration cycle and project collection. Any collection run that does not maintain a minimum of 4 satellite signals will be recollected. Project accuracies cannot be maintained with less than 4 satellite signals during collection. All road segments with fewer than 4 satellite signals during collection will be recollected until a minimum of 4 satellite signals is obtained. It should be noted that additional GPS base stations may be required in urban canyon areas or areas of low GPS reception.

Collection Coverage – DTS utilizes the GPS location of each image collected to create a GPS track of the collection route. These GPS tracks are then compared to the project collection routes in an Esri GIS format to verify all routes have been collected and collection coverage is complete. MAC imagery is collected at intervals of approximately 15 feet to ensure complete coverage and overlap of roadside features.

Prior to all interim and final submittals to the client project manager, DTS will perform a quality assurance review. A DTS representative will review all quality control memorandums and checks with the DTS project manager and project quality control officer. This step assures the NCTCOG that members of DTS have followed all of our stated quality control procedures outlined in this response and our Quality Assurance/Quality Control manual.

6. Any assumptions made in responding to the requirements.

DTS is not making any assumptions outside of the scope of services listed by NCTCOG for the above referenced RFP for pavement analysis services and related services.

7. Any exceptions to the requirements. If there are no exceptions, Respondent shall explicitly state that no exceptions are taken to any part of this RFP. Offer must be in compliance with stated term and conditions unless NCTCOG accepts identified exceptions of the Respondent.

DTS is not taking any exceptions to the RFP as presented by NCTCOG.

8. Any special features or services the Respondent is proposing in response to the requirements that are included within the pricing provided.

Our goal is to demonstrate that the DTS team employs an approach to mobile data collection survey and pavement management reporting that is repeatable and defensible across survey years, is GIS-centric at its core and is a quantitative approach that relies upon standards and procedures that can be applied for pavement management optimization. All data will be formatted to meet the ASTM D6433 Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys standard for pavement condition index and the ASTM E1926 standard for international roughness index. DTS routinely provides the required elements requested by the NCTCOG and will provide a transparent collection and analysis process focused on quantifiable, GIS-centric workflows.

As DTS has performed similar services in the past, we envision a role where we will continue to be part of a long-term solution in working with the NCTCOG to perform professional asset management services. As the DTS service line continues to evolve, DTS no longer offers in-house services for line item 6 (Friction Testing) and line item 7 (Ground Penetrating Radar), but if selected to continue being a NCTCOG Service Provider, DTS will commit to utilizing the services of other NCTCOG selected service providers to offer these services to NCTCOG Member Agencies.

Contact Persons include:

1. **Bid Process:** Daniel Behnke, AICP, PMP GISP, Daniel.Behnke@dtsgis.com 407.375.3049
2. **Contracting Process:** Donna Huey Donna.Huey@atkinsglobal.com 407.382.5222
3. **Contract Administration:** Daniel Behnke, AICP, PMP GISP, Daniel.Behnke@dtsgis.com 407.375.3049

TAB E REFERENCES

Reference #1	
Project Name and Location:	City of Arlington, Texas 101 W. Abram Street, Arlington, TX 76010
Project Manager:	Ariel Rios
Services Provided:	Pavement Data Collection and Integration.
Description of the project:	Following the successful completion of a similar project in 2014 through 2016 the City of Arlington once again contracted with DTS, this time through the NCTCOG contract, to obtain mobile collection of pavement condition data for more than 3,000 lane miles of roadways. The pavement information was integrated into the City's existing Cartograph pavement management system.
Client name and Contact:	Leah Jackson, Information Services Coordinator Tel. (817) 459-6561 Leah.Jackson@arlingtontx.gov
History of accomplishing services within established time and budget:	DTS has contracted with the City of Arlington since 2014 and has completed each cycle of the project on time and within budget.

Reference #2	
Project Name and Location:	Pavement Management Analysis City of Southlake, Public Works Department 1400 Main Street, Southlake, TX 76092
Project Manager:	Daniel Behnke
Services Provided:	Pavement Management Analysis for asphalt and concrete roadways.
Description of the project:	Mobile collection of approximately 432 lane miles of roadway for pavement assessment and 282 lane miles of roadway for right-of-way (ROW) asset inventory.
Client name and Contact:	Zayne Huff Tel. (817) 748-8098 zhuff@ci.southlake.tx.us
History of accomplishing services within established time and budget:	Client quote: DTS immediately stood out as a "customer-first" company and promptly worked with the city to become a partner. Due to quick professional service and communication, along with plenty of hands-on involvement, the City has been very pleased with our experience and would recommend them to any entity looking to improve their pavement management analysis.

Reference #3	
Project Name and Location:	City of Houston, Texas 611 Walker Street, Suite #1606 Houston, TX 77002
Project Manager:	Daniel Behnke (2015) Ariel Rios (2017-2022)
Services Provided:	Pavement Condition Survey and Management Information System.
Description of the project:	This third network-wide pavement and right-of-way data project for the City of Houston included mobile collection of 6,149 centerline miles of roads for the City's pavement data and street assets, including curb and gutter, sidewalks, sidewalk ramps and sidewalk obstructions.
Client name and Contact:	Raj Shah, System Consultant & IT Projects Tel. (813) 395-2500 Raj.Shah@houstontx.gov
History of accomplishing services within established time and budget:	DTS performed three (3) pavement and right-of-way asset data collections for the City of Houston. Each iteration of the project has been completed on-time and within the project budget.

TAB F PROPOSAL PRICING

RFP 2022-063 Pavement Analysis and Related Services

Attachment A (per Exhibit D) - Pricing Proposal Form

Proposed prices shall include all field inspectors, vehicles, tools, equipment, traffic control, contractor maintenance, and customer service support necessary to provide the desired services. Respondents must not include mobilization fees in their pricing and may not include them in any contract(s) that result from this RFP.

If a respondent elects to submit a percentage discount off their catalog pricing for any or all of their services, the corresponding price for each numbered activity listed in Attachment A must account for the proposed discount listed in Exhibit C. If you are not proposing a percentage-discount, please use your established list price for each for each numbered pavement analysis and related services activity.

[Example: If your catalog price is \$100 per unit, and you indicate a 5% discount from catalog pricing in Exhibit C, your pricing form in Attachment A should reflect a unit price of \$95.

Conversely, if your catalog price is \$100 per unit, and you indicate a 0% discount or N/A in Exhibit C, your pricing form in Attachment A should reflect a unit price of \$100.]

Service Category #1: Pavement Data Collection										
			Provide Price Per Tiered Group				A	B	C=AxB	
Activity #	Activity Description	Unit	Unit Base (\$)	Cost	Unit Cost (\$) 0-200 Lane Miles	Unit Cost (\$) 201-700 Lane Miles	Unit Cost (\$) 700+ Lane Miles	Total Units	Agreed Upon Cost (\$)/Unit	Total Agreed Upon Cost (\$)
1	Automatically and continuously measure pavement cracking, texture, rutting and geometrics. Equipment used for rut measurement shall be capable of measuring both wheel track ruts simultaneously.	Lane Mile ¹			70	70	70			0
2	Collect pavement surface distress and structural condition information through automated means for all Participant-owned roadways.	Lane Mile ¹			30	30	30			0
3	Provide a customized digital condition rating system to collect user defined severity/extent based pavement distresses and pertinent roadway attributes to accommodate a standardized approach to collecting data	Lump Sum	2000							0
4	Collect dual-wheel path roughness data to International Roughness Index standards.	Lane Mile ¹			5	5	5			0
5	Collect pavement performance information that includes rutting using a minimum of seven (7) sensors (include pricing for nine (9) sensors as well), fatigue cracking, transverse cracking using a minimum of four (4) sensors, and longitudinal cracking	Lane Mile ¹			5	5	5			0
6	Perform friction testing	Lane Mile ¹			N/A	N/A	N/A			0
7	Measure lane striping reflectivity quality	Lane Mile ¹			50	50	50			0
Service Category #2: Assest Inventory										
			Provide Price Per Tiered Group				A	B	C=AxB	
Activity #	Activity Description	Unit	Unit Base (\$)	Cost	Unit Cost (\$) 0-200 Lane Miles	Unit Cost (\$) 201-700 Lane Miles	Unit Cost (\$) 700+ Lane Miles	Total Units	Agreed Upon Cost (\$)/Unit	Total Agreed Upon Cost (\$)
8	Collect sidewalk data to include location, length, width, location in relation to curb and if greenspaces exist between curb and sidewalk, and sidewalk condition to create shape (.shp) files for incorporation into the Participant’s GIS system, if applicable	Lane Mile ¹			40	40	40			0
9	Collect sidewalk Barrier Free Ramp data to include location, configuration, presence of truncated domes or other detectable warning feature, and condition and create shape (.shp) files for incorporation into the Participant’s GIS system, if applicable	Lane Mile 1	30							0
10	Collect roadway sign data to include type and location and create shape (.shp) files for incorporation into the Participant’s GIS system, if applicable.	Lane Mile 1	40							0
11	Collect photos of Barrier Free Ramps, sidewalks, curb condition, drive approach, and/or roadway signs inventoried under items 8, 9, and 10 above.	Lane Mile 1	1							0
12	Collect location of curb and gutter and create shape (.shp) files for incorporation into the Participant’s GIS system, if applicable.	Linear Feet	0.01							0
13	Collect location and type of visible in-pavement features such as valves, manhole covers, etc. and create shape (.shp) files for incorporation into the Participant’s GIS system, if applicable.	Lane Mile 1	25							0
14	Collect locations of trees, including height and spread	Lane Mile 1	40							0
15	Collect bike lane locations, including width, length, and associated signage and striping.	Linear Feet	0.01							0
16	Utilize Ground Penetrating Radar for relocating utilities (for maintenance plans).	Linear Feet	N/A							0
17	Collect data on location and surface condition of bridge approaches	Each	1000							0
18	Collect information on bridge deck condition	Each	3950							0
19	Perform Parking Lot Pavement Condition Assessment (Thru-Travel Lanes) w/ Inventory, Attribute, & Geodatabase Development	Square Yard	1							0
20 (a-v) below:	Right of Way Assets Database Development (GPS & Camera Configuration):									
20a	Sign & Support Database Development	Each	1000							0
20b	Markings & Striping Database Development	Each	2500							0
20c	Traffic Signals/ Flashers and Controllers Database Development	Each	2500							0
20d	Street Lights Database Development	Each	2500							0
20e	Drop Inlets Database Development	Each	1000							0
20f	Drivepads Database Development	Each	2500							0
20g	Bridges Database Development	Each	1000							0
20h	Speed Humps Database Development	Each	2500							0
20i	Street Furniture Database Development	Each	2500							0
20j	Cattle Guards Database Development	Each	1000							0
20k	Guardrails & Roadside Pedestrian Fence Database Development	Each	2500							0
20l	Culverts and Ditches Database Development	Each	2500							0
20m	Cabinets Database Development	Each	2500							0

20n	Utility Poles Database Development	Each	2500						0	
20o	Fire Hydrant Database Development	Each	2500						0	
20p	Medians Database Development	Each	2000						0	
20q	Valves Database Development	Each	1000						0	
20r	Manhole Covers Database Development	Each	1000						0	
20s	Trees Database Development	Each	1000						0	
20t	Catch Basins/ Drainage Inlets from Master Drainage Plan Database Development	Each	1000						0	
20u	Sidewalk Database Development	Each	1000						0	
20v	Curb & Gutter Database Development	Each	1000						0	
Service Category #3: Pavement Management Analysis										
			Provide Price Per Tiered Group					A	B	C=AxB
Activity #	Activity Description	Unit	Unit Base (\$)	Cost	Unit Cost (\$) 0-200 Lane Miles	Unit Cost (\$) 201-700 Lane Miles	Unit Cost (\$) 700+ Lane Miles	Total Units	Agreed Upon Cost (\$)/Unit	Total Agreed Upon Cost (\$)
21	Calculate the International Roughness Index (IRI)for each road segment in accordance with ASTM E1926. Provide results compatible with the Participant’s GIS database, if applicable.	Lane Mile ¹			5	5	5			0
22	Calculate a Pavement Condition Index (PCI) score for each road segment using an approved pavement management system and in accordance with ASTM D6433 or ASTM E3303. Provide results compatible with the Participant’s GIS database, if applicable.	Lane Mile ¹			5	5	5			0
23	With input from Participant’s staff, devise a weighing system taking into account PCI, IRI, average daily traffic for thoroughfares (traffic count raw data provided by Participant), public safety emergency routes, and apply this 0-100 numeric index to the roadway information collected for the entire jurisdiction. Provide results compatible with the Participant’s GIS database, if applicable. Cost includes base cost plus lane mile unit cost.	Lane Mile ¹	5000		1	1	1			0
24	Estimate the annual budget required to meet the long-term goals regarding desired pavement condition levels. Cost includes base cost plus lane mile unit cost.	Each Participant	5000		1	1	1			0
25	Create a five year and ten year pavement rehabilitation plan with input from Participant’s staff. Cost includes base cost plus lane mile unit cost.	Each Participant	5000		1	1	1			0
26	Recommend the computer hardware and software needed for successful implementation, potentially including recommendations for licenses of pavement management system software and other geodatabase software as needed.	Each Participant	1000							0
27	Train Participant staff and provide assistance to the Public Works and IT Department as needed for the use of data collected through the fully automated system. (20 person maximum per class)	Day	2500							0
Service Category #4: Electronic Products										
			Provide Price Per Tiered Group					A	B	C=AxB
Activity #	Activity Description	Unit	Unit Base (\$)	Cost	Unit Cost (\$) 0-200 Lane Miles	Unit Cost (\$) 201-700 Lane Miles	Unit Cost (\$) 700+ Lane Miles	Total Units	Agreed Upon Cost (\$)/Unit	Total Agreed Upon Cost (\$)
28	Roadway information that shall be collected and provided to the Participant at a minimum includes items a. through i. in Exhibit B	Lane Mile ¹			5	5	5			0
29	Collect digital images at 25-foot intervals of the road surface condition and link to a geodatabase (minimum forward facing imagery).	Lane Mile ¹			1	1	1			0
30	Load assessment data for all Participant-maintained pavements into a pavement management system required by local government Participant(s), if applicable. (Example: MicroPaver). The assessment data shall include visual observations, photographs and measurements collected by instrumentation. Cost includes base cost plus lane mile unit cost.	Each Participant	2000		1	1	1			0
31	Implement map module so that pavement condition and other data can be integrated, displayed, and accessed through the map interface in a format consistent with the Participant’s horizontal and vertical control network system, if applicable. Cost includes base cost plus lane mile unit cost.	Each Participant	2000		1	1	1			0
32	Provide to the Participant the pavement condition data in a pavement management system database approved by Participant. Coordinate with the Participant’s IT department to provide pavement condition data in a format compatible with the Participant’s Environmental Systems Research Institute (ESRI) GIS database, if applicable. Cost includes base cost plus lane mile unit cost.	Each Participant	2000		1	1	1			0
33	Provide asset management tools or systems (not just collection) (i.e., 15-year plan about how to fix or repair assets). Cost includes base cost plus lane mile unit cost.	Each Participant	2000		1	1	1			0
Service Category #5: Pavement Structural Analysis										
			Provide Price Per Tiered Group					A	B	C=AxB
Activity #	Activity Description	Unit	Unit Base (\$)	Cost	Unit Cost (\$) 0-200 Lane Miles	Unit Cost (\$) 201-700 Lane Miles	Unit Cost (\$) 700+ Lane Miles	Total Units	Agreed Upon Cost (\$)/Unit	Total Agreed Upon Cost (\$)
34	Collect and analyze pavement structural condition information through the use of a falling weight deflectometer in accordance with industry standards on designated participant-owned roadways.	**								0
35	Collect and analyze pavement structural condition information through the use of Ground Penetrating Radar (GPR) in accordance with industry standards on designated participant-owned roadways.	**								0
36	Collect and analyze pavement structural condition information through the use of pavement cores in accordance with industry standards on designated participant-owned roadways (traffic control included) ²	**								0
Service Category #6: GIS Related Services										
			Provide Price Per Tiered Group					A	B	C=AxB

Activity #	Activity Description	Unit	Unit Base Cost (\$)	Unit Cost (\$) 0-200 Lane Miles	Unit Cost (\$) 201-700 Lane Miles	Unit Cost (\$) 700+ Lane Miles	Total Units	Agreed Upon Cost (\$)/Unit	Total Agreed Upon Cost (\$)
37	GIS Clean-Up Services	Each Participant	2000						0
38	GIS Support Services	Each Participant	2000						0
39	GIS Remote Training Sessions from IMS GIS Manager/ Expert (2-Hour Sessions)	Each Participant	2000						0
Service Category #7: Value Added Services									
			Provide Price Per Tiered Group				A	B	C=AxB
Activity #	Activity Description	Unit	Unit Base Cost (\$)	Unit Cost (\$) 0-200 Lane Miles	Unit Cost (\$) 201-700 Lane Miles	Unit Cost (\$) 700+ Lane Miles	Total Units	Agreed Upon Cost (\$)/Unit	Total Agreed Upon Cost (\$)
40	Full Written Final Report- Firm shall prepare and submit a written project report summarizing the work performed, dates of collection, methodology, and results.	Each Participant	5000						0
41	Project Presentation- Firm shall prepare and present a written project report summarizing the work performed, dates of collection, methodology, and results to the Participant’s legislative body.	Each Participant	5000						0
42	Provide Curb Ramp and ADA/Barrier Free Ramp Compliance Survey	Each Participant	5000						0
43	Stand-alone field operation for collection of asset inventory only, with different levels of position accuracy and abilities to use data for attribute registration and conditions. Cost includes base cost plus lane mile unit cost. a. Photogrammetry b. Mobile Lidar	Lane Mile ¹	2000	50	50	50			0
44	Generic asset types, allowing for any item within line of sight of the collection vehicle. Asset types include items a. through d. in Exhibit B. Cost includes base cost plus lane mile unit cost.	Lane Mile ¹	2000	25	25	25			0
45	Provide consultancy services to develop linework in GIS for missing sidewalks in order to quantify and identify on a map	Hour	150						0
				TOTAL					0

¹ Lane mile is to be defined as a mile traveled as

- 1. A single pass on alleyways
- 2. A centered single pass on residential streets
- 3. Includes the outside lane in each direction for collectors and arterials (2 total).

²Spacing for pavement cores to be negotiated with each participant.

**** The awarded Contractor(s) shall provide all necessary field inspectors, vehicles, tools, equipment, traffic control and other services required to perform this work. No engineering services are available under this contact. Any activities that Participant and/or Contractor deem to require the service(s) of an engineer must be procured separately and are the sole responsibility of that party.”**

TAB G REQUIRED ATTACHMENTS

**ATTACHMENT I:
INSTRUCTIONS FOR PROPOSALS COMPLIANCE AND SUBMITTAL**

Compliance with the Solicitation

Submissions must be in strict compliance with this solicitation. Failure to comply with all provisions of the solicitation may result in disqualification.

Acknowledgment of Insurance Requirements

By signing its submission, Offeror acknowledges that it has read and understands the insurance requirements for the submission. Offeror also understands that the evidence of required insurance may be requested to be submitted within ten (10) working days following notification of its offer being accepted; otherwise, NCTCOG may rescind its acceptance of the Offeror's proposals. The insurance requirements are outlined in Section 6.04.

Name of Organization/Contractor(s):

Data Transfer Solutions, LLC

Signature of Authorized Representative:



Date: February 24, 2023

**ATTACHMENT II:
CERTIFICATIONS OF OFFEROR**

Name of Organization/Contractor(s):

Data Transfer Solutions, LLC

Signature of Authorized Representative:

A handwritten signature in blue ink, appearing to read "Dutton", is written over a horizontal line.

Date: February 24, 2023

**ATTACHMENT III:
CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

This certification is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 93, Government-wide Debarment and Suspension, for the Department of Agriculture (7 CFR Part 3017), Department of Labor (29 CFR Part 98), Department of Education (34 CFR Parts 85, 668, 682), Department of Health and Human Services (45 CFR Part 76).

The undersigned certifies, to the best of his or her knowledge and belief, that both it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency;
2. Have not within a three-year period preceding this contract been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction, violation of federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false Proposals, or receiving stolen property;
3. Are not presently indicated for or otherwise criminally or civilly charged by a government entity with commission of any of the offense enumerated in Paragraph (2) of this certification; and,
4. Have not within a three-year period preceding this contract had one or more public transactions terminated for cause or default.

Where the prospective recipient of federal assistance funds is unable to certify to any of the qualifications in this certification, such prospective recipient shall attach an explanation to this certification form.

Name of Organization/Contractor(s):

Data Transfer Solutions, LLC

Signature of Authorized Representative:



Date: February 24, 2023

ATTACHMENT IV: RESTRICTIONS ON LOBBYING

Section 319 of Public Law 101-121 prohibits recipients of federal contracts, grants, and loans exceeding \$100,000 at any tier under a federal contract from using appropriated funds for lobbying the Executive or Legislative Branches of the federal government in connection with a specific contract, grant, or loan. Section 319 also requires each person who requests or receives a federal contract or grant in excess of \$100,000 to disclose lobbying.

No appropriated funds may be expended by the recipient of a federal contract, loan, or cooperative agreement to pay any person for influencing or attempting to influence an officer or employee of any federal executive department or agency as well as any independent regulatory commission or government corporation, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered federal actions: the awarding of any federal contract, the making of any federal grant, the making of any federal loan the entering into of any cooperative agreement and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

As a recipient of a federal grant exceeding \$100,000, NCTCOG requires its subcontractors of that grant to file a certification, set forth in Appendix B.1, that neither the agency nor its employees have made, or will make, any payment prohibited by the preceding paragraph.

Subcontractors are also required to file with NCTCOG a disclosure form, set forth in Appendix B.2, if the subcontractor or its employees have made or have agreed to make any payment using nonappropriated funds (to include profits from any federal action), which would be prohibited if paid for with appropriated funds.

**LOBBYING CERTIFICATION
FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS**

The undersigned certifies, to the best of his or her knowledge or belief, that:

1. No federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an officer or employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal loan, the entering into of any cooperative Contract, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative contract; and
2. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, and or cooperative contract, the undersigned shall complete and submit Standard Form – LLL, “Disclosure Form to Report Lobbying”, in accordance with the instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers and that all sub-recipients shall certify accordingly.

Name of Organization/Contractor(s):

Data Transfer Solutions, LLC

Signature of Authorized Representative:



Date: February 24, 2023

**ATTACHMENT V:
DRUG-FREE WORKPLACE CERTIFICATION**

The Data Transfer Solutions, LLC (company name) will provide a Drug Free Work Place in compliance with the Drug Free Work Place Act of 1988. The unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited on the premises of the Data Transfer Solutions, LLC (company name) or any of its facilities. Any employee who violates this prohibition will be subject to disciplinary action up to and including termination. All employees, as a condition of employment, will comply with this policy.

CERTIFICATION REGARDING DRUG-FREE WORKPLACE

This certification is required by the Federal Regulations Implementing Sections 5151-5160 of the Drug-Free Workplace Act, 41 U.S.C. 701, for the Department of Agriculture (7 CFR Part 3017), Department of Labor (29 CFR Part 98), Department of Education (34 CFR Parts 85, 668 and 682), Department of Health and Human Services (45 CFR Part 76).

The undersigned subcontractor certifies it will provide a drug-free workplace by:

Publishing a policy Proposal notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace and specifying the consequences of any such action by an employee;

Establishing an ongoing drug-free awareness program to inform employees of the dangers of drug abuse in the workplace, the subcontractor's policy of maintaining a drug-free workplace, the availability of counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed on employees for drug violations in the workplace;

Providing each employee with a copy of the subcontractor's policy Proposal;

Notifying the employees in the subcontractor's policy Proposal that as a condition of employment under this subcontract, employees shall abide by the terms of the policy Proposal and notifying the subcontractor in writing within five days after any conviction for a violation by the employee of a criminal drug abuse statute in the workplace;

Notifying the Board within ten (10) days of the subcontractor's receipt of a notice of a conviction of any employee; and,

Taking appropriate personnel action against an employee convicted of violating a criminal drug statute or requires such employee to participate in a drug abuse assistance or rehabilitation program.

Name of Organization/Contractor(s):

Data Transfer Solutions, LLC

Signature of Authorized Representative:



Date: February 24, 2023

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 176.005(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.

Data Transfer Solutions, LLC

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.

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.

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.

The Vendor has no employment or other business relationship with the local government officer, or family member of the officer, as described by section 176.003(a)(2)(A)

The Vendor has no family relationship with the local government officer.

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

February 21, 2023

Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed;

or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

**ATTACHMENT VI:
CERTIFICATION REGARDING DISCLOSURE OF CONFLICT OF INTEREST**

The undersigned certifies that, to the best of his or her knowledge or belief, that:

"No employee of the contractor, no member of the contractor's governing board or body, and no person who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of this contract shall participate in any decision relating to this contract which affects his/her personal pecuniary interest.

Executives and employees of contractor shall be particularly aware of the varying degrees of influence that can be exerted by personal friends and associates and, in administering the contract, shall exercise due diligence to avoid situations which give rise to an assertion that favorable treatment is being granted to friends and associates. When it is in the public interest for the contractor to conduct business with a friend or associate of an executive or employee of the contractor, an elected official in the area or a member of the North Central Texas Council of Governments, a permanent record of the transaction shall be retained.

Any executive or employee of the contractor, an elected official in the area or a member of the NCTCOG, shall not solicit or accept money or any other consideration from a third person, for the performance of an act reimbursed in whole or part by contractor or Department. Supplies, tools, materials, equipment or services purchased with contract funds shall be used solely for purposes allowed under this contract. No member of the NCTCOG shall cast a vote on the provision of services by that member (or any organization which that member represents) or vote on any matter which would provide a direct or indirect financial benefit to the member or any business or organization which the member directly represents".

No officer, employee or paid consultant of the contractor is a member of the NCTCOG.

No officer, manager or paid consultant of the contractor is married to a member of the NCTCOG.

No member of NCTCOG directly owns, controls or has interest in the contractor.

The contractor has disclosed any interest, fact, or circumstance that does or may present a potential conflict of interest.

No member of the NCTCOG receives compensation from the contractor for lobbying activities as defined in Chapter 305 of the Texas Government Code.

Should the contractor fail to abide by the foregoing covenants and affirmations regarding conflict of interest, the contractor shall not be entitled to the recovery of any costs or expenses incurred in relation to the contract and shall immediately refund to the North Central Texas Council of Governments any fees or expenses that may have been paid under this contract and shall further be liable for any other costs incurred or damages sustained by the NCTCOG as it relates to this contract.

Name of Organization/Contractor(s):

Data Transfer Solutions, LLC

Signature of Authorized Representative:



Date: February 24, 2023

**ATTACHMENT VII:
CERTIFICATION OF FAIR BUSINESS PRACTICES**

That the submitter has not been found guilty of unfair business practices in a judicial or state agency administrative proceeding during the preceding year. The submitter further affirms that no officer of the submitter has served as an officer of any company found guilty of unfair business practices in a judicial or state agency administrative during the preceding year.

Name of Organization/Contractor(s):

Data Transfer Solutions, LLC

Signature of Authorized Representative:



Date: February 24, 2023

**ATTACHMENT VIII:
CERTIFICATION OF GOOD STANDING
TEXAS CORPORATE FRANCHISE TAX CERTIFICATION**

Pursuant to Article 2.45, Texas Business Corporation Act, state agencies may not contract with for profit corporations that are delinquent in making state franchise tax payments. The following certification that the corporation entering into this offer is current in its franchise taxes must be signed by the individual authorized on Form 2031, Corporate Board of Directors Resolution, to sign the contract for the corporation.

The undersigned authorized representative of the corporation making the offer herein certified that the following indicated Proposal is true and correct and that the undersigned understands that making a false Proposal is a material breach of contract and is grounds for contract cancellation.

Indicate the certification that applies to your corporation:

 X The Corporation is a for-profit corporation and certifies that it is not delinquent in its franchise tax payments to the State of Texas.

_____ The Corporation is a non-profit corporation or is otherwise not subject to payment of franchise taxes to the State of Texas.

Type of Business (if not corporation):

☐ Sole Proprietor

☐ Partnership

☐ Other

Pursuant to Article 2.45, Texas Business Corporation Act, the North Central Texas Council of Governments reserves the right to request information regarding state franchise tax payments.

Donna M. Huey
(Printed/Typed Name, Title of Authorized Representative)

Signature

Date: February 24, 2023

OFFEROR

**ATTACHMENT IX:
HISTORICALLY UNDERUTILIZED BUSINESSES, MINORITY OR WOMEN-OWNED OR DISADVANTAGE
BUSINESS ENTERPRISES**

Historically Underutilized Businesses (HUBs), minority or women-owned or disadvantaged businesses enterprises (M/W/DBE) are encouraged to participate in the solicitation process. Representatives from HUB companies should identify themselves and submit a copy of their certification.

NCTCOG recognizes the certifications of both the State of Texas Program and the North Central Texas Regional Certification Agency. Companies seeking information concerning HUB certification are urged to contact:

State of Texas HUB Program
Texas Comptroller of Public Accounts
Lyndon B. Johnson State Office Building
111 East 17th Street
Austin, Texas 78774
(512) 463-6958
<http://www.window.state.tx.us/procurement/prog/hub/>

Local businesses seeking M/W/DBE certification should contact:

North Central Texas Regional Certification Agency
624 Six Flags Drive, Suite 100
Arlington, TX 76011
(817) 640-0606
<http://www.nctrca.org/certification.html>

Submitter must include a copy of its minority certification documentation as part of this solicitation.

If your company is already certified, attach a copy of your certification to this form and return with your proposal.

Indicate all that apply:

n/a Minority-Owned Business Enterprise

n/a Women-Owned Business Enterprise

n/a Disadvantaged Business Enterprise

ATTEST TO Attachments of Certification:

Authorized Signature

Donna M. Huev

Typed Name

Date

Subscribed and sworn to before me this 24 day of February (month), 2023

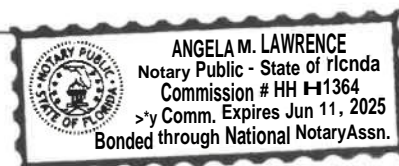
Orlando (city) in Orange County, FL (state).

Notary Public in and for Orange (County),

State of Florida

Commission expires: _____

SEAL



MBE SUBCONTRACTOR

**ATTACHMENT IX:
HISTORICALLY UNDERUTILIZED BUSINESSES, MINORITY OR WOMEN-OWNED OR DISADVANTAGED
BUSINESS ENTERPRISES**

Historically Underutilized Businesses (HUBs), minority or women-owned or disadvantaged businesses enterprises (M/W/DBE) are encouraged to participate in the solicitation process. Representatives from HUB companies should identify themselves and submit a copy of their certification.

NCTCOG recognizes the certifications of both the State of Texas Program and the North Central Texas Regional Certification Agency. Companies seeking information concerning HUB certification are urged to contact:

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624 Six Flags Drive, Suite 100
Arlington, TX 76011
(817) 640-0606
<http://www.nctrca.org/certification.html>

Submitter must include a copy of its minority certification documentation as part of this solicitation.

If your company is already certified, attach a copy of your certification to this form and return with your proposal.

Indicate all that apply:

☒ x Minority-Owned Business Enterprise
☒ x Women-Owned Business Enterprise
☒ x Disadvantaged Business Enterprise

ATTEST TO Attachments of Certification:

Shantia Flakes
Authorized Signature

Shantia Flakes 02-16-23
Typed Name Date

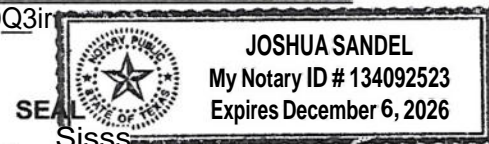
Subscribed and sworn to before me this 16th day of February (month), 2023

Caress (city), Harris (county), Texas (state).

Notary Public in and for Harris (County),

State of Texas

Commission expires: Dec. 6, 2026



SEAL
Siss

Joshua Sandel



Sylvester Turner,
Mayor

CITY OF HOUSTON

Office of Business Opportunity



Aerial Ambiance

is duly certified as a

Minority Business Enterprise (MBE)

Certified Categories:

Certification Number: 20-10-13626

NAICS 541922: PHOTOGRAPHERS SPECIALIZING IN AERIAL PHOTOGRAPHY

Director of Office of Business Opportunity

Note: This certificate is the property of the City of Houston Office of Business Opportunity, and may be revoked should the above named firm graduate from the MWDBE program or the firm's certification is no longer active. In addition, this certificate is valid only in conjunction with the firm's active listing in the City of Houston's Directory of certified MBE, WBE, SBE, PDBE, ACDBE and DBE firms via the following weblink: <https://houston.mwdbe.com/?TN=houston>.



Sylvester Turner,
Mayor

CITY OF HOUSTON

Office of Business Opportunity



Aerial Ambiance

is duly certified as a

Women Business Enterprise (WBE)

Certified Categories:

Certification Number: 20-10-13626

NAICS 541922: PHOTOGRAPHERS SPECIALIZING IN AERIAL PHOTOGRAPHY

Director of Office of Business Opportunity

Note: This certificate is the property of the City of Houston Office of Business Opportunity, and may be revoked should the above named firm graduate from the MWDBE program or the firm's certification is no longer active. In addition, this certificate is valid only in conjunction with the firm's active listing in the City of Houston's Directory of certified MBE, WBE, SBE, PDBE, ACDBE and DBE firms via the following weblink: <https://houston.mwdbe.com/?TN=houston>.



Sylvester Turner,
Mayor

CITY OF HOUSTON

Office of Business Opportunity



Aerial Ambiance

is duly certified as a

Small Business Enterprise (SBE)

Certified Categories:

Certification Number: 20-10-13626S

NAICS 541922: PHOTOGRAPHERS SPECIALIZING IN AERIAL PHOTOGRAPHY

Director of Office of Business Opportunity

Note: This certificate is the property of the City of Houston Office of Business Opportunity, and may be revoked should the above named firm graduate from the MWDBE program or the firm's certification is no longer active. In addition, this certificate is valid only in conjunction with the firm's active listing in the City of Houston's Directory of certified MBE, WBE, SBE, PDBE, ACDBE and DBE firms via the following weblink: <https://houston.mwdbe.com/?TN=houston>.

**ATTACHMENT X
ATTESTATION OF CONTRACTS NULLIFYING ACTIVITY**

The following provisions are mandated by Federal and/or State of Texas law. Failure to certify to the following will result in disqualification of consideration for contract. Entities or agencies that are not able to comply with the following will be ineligible for consideration of contract award.

**PROHIBITED TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
CERTIFICATION**

This Contract is subject to the Public Law 115-232, Section 889, and 2 Code of Federal Regulations (CFR) Part 200, including §200.216 and §200.471, for prohibition on certain telecommunications and video surveillance or equipment.

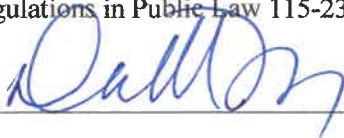
Public Law 115-232, Section 889, identifies that restricted telecommunications and video surveillance equipment or services (e.g. phones, internet, video surveillance, cloud servers) include the following:

- A) Telecommunications equipment that is produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliates of such entities).
- B) Video surveillance and telecommunications equipment produced by Hytera Communications Corporations, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliates of such entities).
- C) Telecommunications or video surveillance services used by such entities or using such equipment.
- D) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, Director of the National Intelligence, or the Director of the Federal Bureau of Investigation reasonably believes to be an entity owned or controlled by the government of a covered foreign country.

The entity identified below, through its authorized representative, hereby certifies that no funds under this Contract will be obligated or expended to procure or obtain telecommunication or video surveillance services or equipment or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as a critical technology as part of any system prohibited by 2 CFR §200.216 and §200.471, or applicable provisions in Public Law 115-232 Section 889.

☒ The Contractor or Subrecipient hereby certifies that it does comply with the requirements of 2 CFR §200.216 and §200.471, or applicable regulations in Public Law 115-232 Section 889.

SIGNATURE OF AUTHORIZED PERSON:



NAME OF AUTHORIZED PERSON:

Donna M. Huey

NAME OF COMPANY:

Data Transfer Solutions, LLC

DATE:

February 24, 2023

-OR-

☐ The Contractor or Subrecipient hereby certifies that it cannot comply with the requirements of 2 CFR §200.216 and §200.471, or applicable regulations in Public Law 115-232 Section 889.

SIGNATURE OF AUTHORIZED PERSON:

NAME OF AUTHORIZED PERSON:

NAME OF COMPANY:

DATE:

BOYCOTTING OF CERTAIN ENERGY COMPANIES

This contract is subject to the Texas Local Government Code chapter 809, Subtitle A, Title 8, prohibiting contracts with companies who boycott certain energy companies.

TLGC chapter Code chapter 809, Subtitle A, Title 8, identifies that “boycott energy company” means, without an ordinary business purpose, refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company:

- I. engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuel-based energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law; and
- II. does business with a company described by paragraph (I).

The entity identified below, through its authorized representative, hereby certifies that they do not boycott energy companies, and that they will not boycott energy companies during the term of the contract as prohibited by Chapter 809, Subtitle A, Title 8 of the Texas Local Government Code.

☒ The Contractor or Subrecipient hereby certifies that it does comply with the requirements of Chapter 809, Subtitle A, Title 8.

SIGNATURE OF AUTHORIZED PERSON:

NAME OF AUTHORIZED PERSON:

NAME OF COMPANY:

DATE:



Donna M. Huey

Data Transfer Solutions, LLC

February 24, 2023

-OR-

☐ The Contractor or Subrecipient hereby certifies that it cannot comply with the requirements of Chapter 809, Subtitle A, Title 8.

SIGNATURE OF AUTHORIZED PERSON:

NAME OF AUTHORIZED PERSON:

NAME OF COMPANY:

DATE:

DISCRIMINATION AGAINST FIREARMS ENTITIES OR FIREARMS TRADE ASSOCIATIONS

This contract is subject to the Texas Local Government Code chapter 2274, Subtitle F, Title 10, prohibiting contracts with companies who discriminate against firearm and ammunition industries.

TLGC chapter 2274, Subtitle F, Title 10, identifies that "discrimination against a firearm entity or firearm trade association" includes the following:

- A) means, with respect to the entity or association, to:
- I. refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; and
 - II. refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or
 - III. terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association.
- B) An exception to this provision excludes the following:
- I. contracts with a sole-source provider; or
 - II. the government entity does not receive bids from companies who can provide written verification.

The entity identified below, through its authorized representative, hereby certifies that they have no practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and that they will not discriminate during the term of the contract against a firearm entity or firearm trade association as prohibited by Chapter 2274, Subtitle F, Title 10 of the Texas Local Government Code.

☒ The Contractor or Subrecipient hereby certifies that it does comply with the requirements of Chapter 2274, Subtitle F, Title 10.

SIGNATURE OF AUTHORIZED PERSON:

NAME OF AUTHORIZED PERSON:

NAME OF COMPANY:

DATE:



Donna M. Huey

Data Transfer Solutions, LLC

February 24, 2023

-OR-

☐ The Contractor or Subrecipient hereby certifies that it cannot comply with the requirements of Chapter 2274, Subtitle F, Title 10.

SIGNATURE OF AUTHORIZED PERSON:

NAME OF AUTHORIZED PERSON:

NAME OF COMPANY:

DATE:

APPENDIX 1: RESUMES

Daniel Behnke, AICP, PMP, GISP

Project Manager



Mr. Behnke is the Director of Asset Management Operations at Data Transfer Solutions. He has 17 years [August 23, 2004] of public and private sector experience with Geographic Information Systems (GIS) utilizing Esri's ArcGIS software and GPS as well as DeLorme and Trimble applications. Prior to becoming the Director of Asset Management Operations, Mr. Behnke collected and processed data for approximately 20,000 roadway miles including pavement distress, rutting, roadway geometry and right-of-way assets as well as validating and verifying roadway distresses. Mr. Behnke is proficient in all types of data processing workstation hardware and software for automated data collection. He previously served on the Vanguard Cabinet of the Urban and Regional Information Systems Association (URISA).

RELEVANT PROJECT EXPERIENCE

Road Rating Services, Delaware DOT. Project Manager/QA/QC Manager. Mr. Behnke performed QA/QC services for this annual Statewide Road Rating Service. DTS utilized Mobile Asset Collection vehicle pavement and right-of-way cameras to perform a pavement distress survey of the State's 11,800 miles of maintained roads. DTS utilized MAC images to perform the State's pavement surface condition assessment with the DeIDOT pavement distress dictionary including IRI and rut values. DTS provided all right-of-way images collected for use in the State's video log application per highway section and milepost reference. Delivery of pavement data was through a geodatabase which DeIDOT uploaded to the State's pavement management system. Mr. Behnke supported this project as a Senior GIS Analyst, and he was responsible for delivering an Esri geodatabase of 54,970 trees, 29,497 light poles, 24,741 non-compliant mailboxes, 17,440 headwalls, 11,260 fences, 2,162 signal poles and 1,299 bridge railings along with their corresponding geo-referenced images.

Pavement Data Collection for the Pavement Management Information System, City of Austin, Texas. Mr. Behnke was the Project Manager of this 4-year annual contract with the City of Austin to collect 50% of the City's network yearly and to provide automated crack distress information and ride quality measurements. Distress data was delivered in the Long Term Pavement Performance (LTPP) Distress Rating format for distress, extent and severity definitions.

Pavement Condition Survey, City of El Campo, Texas. Project Manager. Data Transfer Solutions used a Mobile Asset Collection vehicle to collect information on 90 centerline miles of City-maintained streets. The objective of the effort was to obtain digital and video data of pavement condition. Mr. Behnke supervised the DTS pavement evaluators who went through the collected imagery and extracted the required distress data and asset information using the EarthShaper™ pavement analysis tool. City roads were analyzed for distress presence, type, severity and extent. Extracted pavement distress data was then imported into the selected asset management software. ASTM D6433 Pavement Condition Index values were then calculated for each road segment.

Pavement Management Services, City of Lewisville, Texas. Project Manager. The DTS Mobile Asset Collection (MAC) system was employed to capture pavement imagery for use in pavement rating for the City of Lewisville's street

Total years of experience

17

Years with firm

10

Education

M.P.A., Public Administration, University of Central Florida, 2009

B.A., Geography, University of Wisconsin, 2004

Certifications

American Institute of Certified Planners, Certificate Number: 27959
 Certified GIS Professional, Certificate Number: 23000
 Certified Project Management Professional, Certificate Number: 1975390

Software

VUEWorks Asset Management
 Esri's ArcGis
 GPS



Daniel Behnke

Project Manager

network and alleys. As the Director of Operations, Mr. Behnke reviewed the quality of the pavement rating process to ensure internal standards were met prior to client delivery. The final pavement deliverables were imported into MicroPAVER.

GASB Pavement Condition Survey & Ratings, City of West Palm Beach, Florida. Project Manager. Data Transfer Solutions used a Mobile Asset Collection vehicle to collect information on 513 lane miles of City-maintained streets and alleys. The objective of the effort was to obtain digital and video data of pavement condition as well as pavement markings locations and conditions. DTS pavement evaluators went through the collected imagery and extracted the required distress data and asset information using the EarthShaper™ pavement analysis tool. City roads were analyzed for distress presence, type, severity and extent. Extracted pavement distress data was then imported into VUEWorks® asset management software. ASTM D6433 Pavement Condition Index values were calculated for each road segment using VUEWorks.

Pavement Management System Development, Indianapolis Metropolitan Planning Organization. Project Manager. DTS provided pavement professional services to collect, process and deliver pavement condition data for selected roadways within the Indianapolis Metropolitan Planning Organization's (MPO) planning area. The primary goal of the project was to collect data that provided comparative pavement condition measures of roadways being considered for rehabilitation or reconstruction.

Pavement Management Information System (PMIS – Next G), City of Houston, Texas. Project Manager. Data Transfer Solutions provided pavement professional services and the collection of street assets including curb and gutter, sidewalks, sidewalk ramps and sidewalk obstructions. The pavement survey and rating was performed for 1,231 centerline miles of major streets and 4,918 centerline miles of local streets. DTS imported condition rating information into StreetSaver Plus. DTS was subsequently selected by the City for a second similar contract.

Statewide Pavement Rating, Colorado DOT. QA/QC Manager. This project involved the collection of roadway condition data and images for all State-maintained highways for HPMS (Highway Performance Monitoring System) reporting. The number of miles of data/image collection for CDOT was approximately 12,000 miles annually. An additional 7,000 miles of second direction 2-lane roads were collected for roadway images only as an additional option. International Roughness Index (IRI) was collected using Federal Highway Administration approved equipment that met ASTM E950 standards. Inertial profilers were used that met the requirements of and were operated in accordance with AASHTO Standards M 328, R 57-10, R 56-10 and R43M/R43-7. Rutting was collected for both the left and right wheel paths to the hundredth of an inch. Average rut depths over each tenth-mile segment were reported, for left wheel path, right wheel path and combined average. DTS provided CDOT an asset data dictionary that contained all HPMS roadway features and attributes through the Stereo Extraction Tool.

Pavement, Signs, Sidewalk and ADA Collection/Assessment, City of Lakeland, Florida. QA/QC Manager The City of Lakeland chose Data Transfer Solutions to perform several asset management-oriented services including pavement data collection and assessment, traffic sign data collection and assessment, sidewalk data collection and visual condition assessment and ADA ramp data collection. Pavement distresses were catalogued for the City's 780 lane miles of roadway.

Todd Spangler, PE, IAM

Engineer of Record

Mr. Spangler is the Business Development Manager for Data Transfer Solutions where he supports both asset management collection projects and VUEWorks® asset management software implementations. Mr. Spangler's 26 years of professional experience encompass serving as a project engineer, city engineer, municipal stormwater coordinator, municipal water/sewer manager and director of engineering. He assisted in founding the Tennessee Stormwater Association and served as its first president, spearheading collaboration between local utilities and the state that received recognition from the Environmental Protection Agency as an innovative approach to stakeholder involvement in the permitting process. Mr. Spangler is also a long-term member of both the American Water Works Association and the Water Environment Federation. He brings critical real-world local government experience for enterprise asset management.

Mr. Spangler's project experience includes:

FL Local Municipal, City of Largo, Florida – VUEWorks Implementation. DTS was contracted by the City to implement VUEWorks enterprise wide across all departments. As the lead implementer and assistance project manager, Mr. Spangler worked with the various departments to configure VUEWorks for their unique asset classes, varied workflows, forms, and condition methodologies. VUEWork's ability to server across various departments was key to the successful implementation for the City.

CA Local Municipal, City of South Lake Tahoe, California – VUEWorks Implementation. DTS performed asset collection and extraction services on approximately 260 centerline miles of roadways, then used that information as one of the bases of the Public Works Department's new VUEWorks asset management system. The City is using VUEWorks for work management as well as asset management. Mr. Spangler set up the search pages for the City's implementation.

City of Plano, Texas – Pavement Management Services

Mr. Spangler was the Engineer of Record for this project which included automated data collection for street pavement and alley condition surveys, condition evaluation and preparation of a budget analysis and maintenance optimization for the City's approximately 542-centerline mile pavement network. The predominate concrete pavement network was evaluated in accordance with the ASTM D6433 standard.

North Tarrant Express Mobility Partners 3 – Pavement Condition Survey

DTS recently completed this project encompassing 173 lane miles of this Texas expressway. The project involved data collection using a Mobile Asset Collection vehicle, 100% rating of pavement, Pavement Condition Index score development, rutting, ride quality and friction testing. As a Pavement Engineer for the project, Mr. Spangler was the Engineer of Record.

City of Houston, Texas – Pavement Management Information System (PMIS – Next G).

Data Transfer Solutions provided pavement professional services and the collection of street assets including curb and gutter, sidewalks, sidewalk ramps and sidewalk obstructions. The pavement survey and rating was performed for 1,231 centerline miles of major streets and 4,918 centerline miles of



Total years of experience

26

Years with firm

7

Education

B.S., Civil and Environmental Engineering, Tennessee Technological University, 1997

Registrations/licenses

Professional Engineer
Florida 80095, 2015
South Carolina 33668, 2016
Tennessee 106500, 2001
Texas 123892, 2016

Certifications

Institute of Asset Management Certification

Honors and awards

President's Award, Tennessee Storm Water Association, 2009

Professional affiliations

National Society of Professional Engineers
American Public Works Association
American Water Works Association, Asset Management Sub-Committee

Software

VUEWorks Asset Management



Todd Spangler, PE

Engineer of Record

local streets. DTS imported condition rating information into StreetSaver Plus. Mr. Spangler was the Engineering Liaison for the project, and DTS was subsequently selected by the City for a second similar contract.

City of West Palm Beach, Florida – GASB Pavement Condition Survey & Ratings. Data Transfer Solutions used a Mobile Asset Collection vehicle to collect information on 513 lane miles of City-maintained streets and alleys. The objective of the effort was to obtain digital and video data of pavement condition as well as pavement markings locations and conditions. DTS pavement evaluators went through the collected imagery and extracted the required distress data and asset information using the EarthShaper™ pavement analysis tool. City roads were analyzed for distress presence, type, severity and extent. ASTM D6433 Pavement Condition Index values were calculated for each road segment using VUEWorks. Mr. Spangler was the Engineering Liaison for the project.

City of Arlington, Texas – Pavement Data Collection and Integration

The City selected DTS to obtain pavement condition data for its more than 3,000 lane miles of roadways. DTS used one of our Mobile Asset Collection (MAC) vehicles to collect the pavement data. Approximately 1/3 of the City's total roadway mileage was collected each year for a three-year period. The pavement information was integrated into the City's pavement management system. Mr. Spangler was the Engineering Liaison for the project. DTS was subsequently selected by the City for a second similar project.

MA Local Municipal. City of Framingham, Massachusetts – VUEWorks Implementation. DTS was contracted by the City to ensure that Framingham's basic configuration and reporting needs were accommodated by the Public Works Department's VUEWorks asset management system. As the Project Manager, Mr. Spangler worked with City staff in the Highway & Solid Waste, Wastewater, Pump Stations and Water Distribution divisions to review workflows, configure the system and develop multiple reports including those focused on costs and schedules. Mr. Spangler served as the Implementation Specialist for the project.

TX Local County. Williamson County, Texas – VUEWorks Implementation. Williamson County retained DTS to perform its VUEWorks asset management and work management software implementation for the Public Works Department. Mr. Spangler served as the Project Manager for the first phase of the project, and he oversaw the kickoff meeting, workflow workshops, data migration, software configuration and initial training efforts for the implementation.

TX Local Municipal. City of Duncanville, Texas – VUEWorks Implementation. The Duncanville Public Works Department chose VUEWorks as its asset management system. As the Implementation Specialist for the project, Mr. Spangler configured the system and worked with City staff to ensure it met their needs. Mr. Spangler also trained City staff on usage of the Budget Forecasting and Projects modules for pavement management. Additionally, he assisted the Public Works Department with its Pavement Management Program presentation to the City Council.

Scott J. McDonald, PMP, APM

Pavement Subject Matter Expert

Mr. McDonald has 26 years of experience in the planning and management of technology-based asset management solutions, development and execution of technical training programs, project budget development and financial management, staff leadership, and client support. He is an acknowledged technical expert in the use and support of U.S. Army Corps of Engineers (USACE)-developed Sustainment Management Systems (SMS) products, including BUILDER™ and PAVER™. Scott has provided PAVER™ pavement management system implementation assistance and infrastructure asset management support and training for a variety of Federal, state, municipal, and higher education clients, including the US Air Force (USAF), the US Navy (USN), The FBI Academy, The City of Rio Rancho, NM, The County of San Diego, CA, and NASA.

Scott spent 12 years with the University of Illinois at Urbana-Champaign as Director of the Technical Assistance Center. During that time, Scott was co-located at the USACE Construction Engineering Research Laboratory where he interfaced with the PAVER and BUILDER development teams. Once joining Atkins, Scott was involved in securing a Cooperative Research and Development Agreement (CRADA) with USACE CERL as a formal BUILDER development, training, and implementation partner. Scott also provides software support and training to the American Public Works Association's (APWA) PAVER™ user community and has implemented the PAVER™ pavement management system for hundreds of thousands of miles of airfield and road/parking lot network pavement throughout the U.S. and abroad. As a part of Scott's relationship with the APWA, Scott conducts on location and seminar style training courses and speaks at conferences around the country throughout the year.

RELEVANT PROJECT EXPERIENCE

Pavement Management System Implementation – FBI Academy, Quantico, VA. Project Manager – Directed the efforts of a team of people including GIS Analysts, Civil Engineers, and Pavement Inspectors to accomplish a full PAVER based pavement management system implementation. Maps were created in collaboration with installation personnel, inventory data were verified, inspection data collected following ASTM protocols, and reports prepared including condition reports and long-range work plan recommendations.

PAVER/Pavement Management System Implementation Assistance – Naval Air Weapons Station China Lake, Ridgecrest, CA. Project Manager – Provided training and technical direction on the implementation of the PAVER software system. Worked with installation personnel to develop inventory verification, ASTM compliant inspection data collection practices, lifecycle modeling, and work planning processes designed to increase pavement management efficiency at the installation.

PAVER/Pavement Management System Implementation Assistance – US Air Force Academy (USAF), Colorado Springs, CO. Project Manager – Worked directly with 10 CES staff to initiate an implementation of the PAVER system for the USAFA pavement network. This involved software training, manual inspection data collection walk through, and work with management to develop work plans with the ability to efficiently extract and analyze data.

Support and Training Specialist, American Public Works Association (APWA) PAVER™ Support Center. Director - Working (ongoing) with the APWA to provide full help-desk support to over 400 subscriber organizations to the PAVER™ sustainment



Total years of experience

26

Years with firm

7

Education

Ph.D. Candidate Northcentral University, 2023 Engineering and technology Management

M.B.A., Albany State University, 1998

B.S., Computer Science, Albany State University, 1995

Certifications

Project Management Professional (PMP), Project Management Institute (PMI), 2695816, 2019 (exp. 2023)
Accredited Pavement Manager (APM), The International Pavement Management Association, B-00000005, 2013 (exp. 2025)

Memberships

American Public Works Association (APWA)
Society of American Military Engineers (SAME)
International Pavement Management Association (IPMA)

Software

Sustainment Management Systems, series including PAVER™, ROOFER™, RAILER™, and BUILDER™
ArcVIEW
Microsoft SQL

Professional development

Area of research interest: Barriers to technology transfer within the field of facility asset management.



Scott J. McDonald, PMP, APM

Pavement SME

management system. Mr. McDonald provides troubleshooting and support services via phone and email to the software user community on demand. Additionally, Scott travels regularly and trains organizations on the use of the PAVER system and works directly with the US Army Corps development team to assist with version testing and updating.

PAVER/Pavement Management System Implementation – The Boeing Company, Seattle, WA. Project Manager/Technical Lead – Collaborated with Boeing to implement a pavement management system for their airfields in Washington State. Worked with Boeing staff to initiate a database, develop an inspection data process, taught and supported local staff of the use of lifecycle modeling and scenario planning.

Pavement Management System Update and Inspection Data Collection, City of Brighton, CO. Project Manager – Responsible for guiding the updating of the City's PAVER™ database and coordinating the inspection data collection effort for ~150 centerline miles of roadways (arterial, collector, residential). Once the inspection data was collected, QC checks were performed on the data set. Finally, Inspection and Work Plan reports were generated to inform the City's pavement management planning efforts.

PAVER™ Training, Management System Update, and Inspection Data Collection, City of Cape Girardeau, MO. Project Manager/Technical Lead – Responsible for guiding a team of six inspectors to refresh inspection data for over 450 centerline miles of City roads. Following the inspection, Mr. McDonald was responsible for uploading the inspection data into the City's main PAVER database and providing QC on both the data collection effort and the final database. Following the inspection update, Mr. McDonald provided training for City personnel on the use of the PAVER™ system including developing long range work plan scenarios to assist the City with planning and budgeting.

PAVER™ Training, Management System Update, and Inspection Data Collection, City of Rio Rancho, NM. Project Manager – Over the course of a three-year period, Mr. McDonald provided training and implementation assistance to the City during the initial implementation phase. This included training City inspectors to collect inspection data in house. Once the City completed its initial inspection data collection cycle, they retained Atkins to refresh its inspection data and provide work planning training to City management. Mr. McDonald was responsible for directing the efforts of six inspectors, providing QC of the process and data, and training City staff upon the conclusion of the data collection effort.

Pavement Management Services, Horry County, South Carolina. Project manager for software training and asset management system consulting. Provided Horry County with training to enable county staff to utilize their PAVER software and data and provide inspectors with ASTM D-6433-11 standard guidelines for conducting inspections. Training also included working with GIS staff to integrate GIS maps with the PAVER database, and work planning guidance for management using GIS as a work plan results presentation tool.

PAVER Training, Largo, Florida. Project manager for software training and asset management system consulting. Provided city pavement management staff with a comprehensive training course. Modules in the course included inventory process, inspection practices, cost and life-cycle modeling, and work planning. Also assisted the city in validating data in the existing database.

Ariel Rios

Assistant Project Manager



Mr. Rios is a Project Manager and Pavement Engineer at Data Transfer Solutions where he manages pavement data and right-of-way asset collection projects. Additionally, he is proficient in EarthShaper™ asset extraction software and ArcMap, and he also has a working knowledge of SOLIDWORKS, Mathcad, NX and Pro/ENGINEER software. Mr. Rios is active in both the American Society of Mechanical Engineers and the Society of Hispanic Professional Engineers, including participation in volunteer projects.

RELEVANT PROJECT EXPERIENCE

Pavement Condition Survey, City of Houston, Texas. In its second multi-year contract with the City of Houston, DTS is using its fleet of Mobile Asset Collection vehicles to collect pavement and other assets along 1,231 centerline miles of major streets and 4,918 centerline miles of local streets for the City of Houston. DTS is providing the City with a pavement condition survey and a videologger allowing pavement management personnel to take a virtual drive along City streets. DTS will also prepare final reports for the City for pavement condition evaluation including reporting on IRI, PCI and related data. Mr. Rios is the Project Manager for the project.

Residential Pavement Inventory & Condition Assessment, City of Indianapolis, Indiana. DTS provided a pavement condition survey and sidewalk and ADA ramp inventory for the City of Indianapolis. DTS collected all local roads within the City's network which was approximately 2,209 centerline miles. DTS utilized its fleet of Mobile Asset Collection vehicles to collect the ROW and pavement condition survey. DTS also worked with the City to establish attribute criteria for the City's sidewalk and ADA ramp inventory. Previously, DTS collected the City's 1,100 centerline miles of thoroughfares rating both pavement and sidewalks and ADA ramps. Mr. Rios was a Pavement Engineer.

Pavement Management Data Collection Services, Seminole County, Florida. For a second contract with Seminole County, DTS is using Mobile Asset Collection vehicles to acquire sub-meter accurate imagery of the County's 870 centerline miles of pavement in accordance with the ASTM D6433 standard. Approximately 1/3 of the network is being collected each year. Following the rating of pavement by experienced personnel, DTS will deliver a MicroPAVER database update and a GIS feature class file. Mr. Rios is the Project Manager.

Pavement Condition Survey, Cobb County, Georgia. Mr. Rios is the Project Manager for Data Transfer Solutions' second pavement condition survey contract for the County. The project includes software implementation, network database development, automated data collection for pavement condition surveys, budget analysis and maintenance optimization for the County's thoroughfares which total approximately 610 centerline miles. The pavement condition survey was conducted per the ASTM D6433 standard, and the data will be imported into Cartegraph at the completion of the project.

Pavement Data Collection and PCI Rating, City of Cincinnati, Ohio. The City of Cincinnati contracted with Data Transfer Solutions to perform pavement collection and determine PCI ratings for its 930 centerline miles of City-maintained roadways.

Total years of experience

8

Years with firm

8

Education

B.S., Mechanical Engineering,
University of Central Florida, 2013

Certifications

Texas Department of Transportation
(TxDOT) Certifications
PMIS Visual Rater Cert Flex PV. CON
111
PMIS Visual Rater Cert Conc PV.
CON 110

Software

EarthShaper™
ArcMap,
SOLIDWORKS,
Mathcad, NX
Pro/ENGINEER



Ariel Rios

Assistant Project Manager

DTS is rating the pavement per the ASTM D6433 standard and will integrate the data with the City's pavement management system. Mr. Rios is serving as the Project Manager for these services.

Pavement Management Services, City of Plano, Texas. Mr. Rios serves as the Project Manager for this project which includes automated data collection for street pavement and alley condition surveys, condition evaluation and preparation of a budget analysis and maintenance optimization for the City's approximately 542-centerline mile pavement network. The predominate concrete pavement network will be evaluated in accordance with the ASTM D6433 standards.

Pavement Condition Survey, Lubbock County, Texas. As a subcontractor to Half Associates, Inc., DTS provided a pavement condition survey for the County. The services provided included centerline review, route planning, image collection of pavement assets, pavement evaluation per the ASTM D6433 standard and a final report. Mr. Rios was a Pavement Engineer working on the project.

Pavement Condition Survey and ROW Asset Inventory, City of Lewisville, Texas. The City of Lewisville selected DTS to conduct a pavement condition assessment of 120 miles of roadways and alleys within the City. DTS used a Mobile Asset Collection (MAC) vehicle to collect imagery from which pavement analysts performed the condition assessment. The project also included the collection of two types of right-of-way assets – traffic signs and streetlights. Mr. Rios was the Project Manager for this contract.

Sidewalk Inventory and Analysis, City of Texarkana, Texas. DTS used a Mobile Asset Collection vehicle to collect sidewalk and ramp condition information on the Texarkana MPO road network. The objective of the effort was to obtain digital and video data of the sidewalk condition. The project included a public participation and stakeholder involvement as well. DTS also prepared a final sidewalk and ramp inventory which categorized the sidewalks by condition (good, fair, poor). Mr. Rios was a Sidewalk Rater on the project.

Pavement Condition Survey, North Tarrant Express Mobility Partners 3. DTS is performing this project encompassing 173 lane miles of this Texas expressway. The project involves data collection using a Mobile Asset Collection vehicle, 100% rating of pavement, Pavement Condition Index score development, rutting, ride quality and friction testing. The pavement rating is being performed in conformance with Texas Department of Transportation standards. Mr. Rios is the Project Manager for this pavement project.

Pavement Condition Survey and Right-of-Way Asset Inventory, Harris County, Texas. Utilizing its fleet of MAC vehicles, DTS collected 12,888 miles of roadway for Harris County, the county in which Houston is located. DTS provided the County with its first pavement condition survey as well as an inventory of sidewalks and ADA ramps. DTS prepared final reports for each of the four precincts within the County for pavement condition evaluation including reporting on IRI, PCI and related data. Mr. Rios served as the Project Manager.

Leon Parker

QA/QC Manager

Mr. Parker is a Quality Assurance/Quality Control Manager at Data Transfer Solutions. Mr. Parker has 7 years of experience at DTS where he has served in a number of asset data positions including project collection technician, asset management specialist and production manager. His previous hands-on experience as a Mobile Asset Collection technician at DTS gives him a complete understanding of the asset data from collection through database finalization.

RELEVANT PROJECT EXPERIENCE

Pavement Condition Assessment, Brevard County, Florida. Data Transfer Solutions provided pavement condition assessment services to Brevard County. These services include using Mobile Asset Collection (MAC) vehicles to collect geo-referenced data for the County's 1,120 centerline miles of roadway, pavement analysis and calculations, maintenance and repair strategy recommendations, condition forecasting, budget forecasting and recommendations for appropriate pavement management software. Mr. Parker was responsible for QA/QC of the project database prior to its delivery to the client.

Pavement Condition Survey and Right-of-Way Asset Inventory, Harris County, Texas. Utilizing its fleet of MAC vehicles, DTS collected 12,888 miles of roadway for Harris County, the county in which Houston is located. DTS provided the County with its first pavement condition survey as well as an inventory of sidewalks and ADA ramps. DTS prepared final reports for each of the four precincts within the County for pavement condition evaluation including reporting on IRI, PCI and related data. Mr. Parker served as the QA/QC manager for the right-of-way assets.

Right-of-Way Imagery Collection, Asset Extraction and Inventory, City of Topeka, Kansas. DTS utilized its fleet of Mobile Asset Collection vehicles to provide a pavement condition survey on the City's 1,600 lane mile network which also included collection of 166 miles of alleys. DTS provided a pavement condition survey per the ASTM D6433 methodology and delivered a final report including data on IRI, PCI and related data. Mr. Parker was the QA/QC Manager in charge of delivering asset data for project.

Pavement, Signs, Bridges, Barriers, Attenuators, Driveways, Illumination Structures, Striping and Marking Inventories, Central Texas Regional Mobility Authority. DTS has completed two automated data collection cycles for the Central Texas Regional Mobility Authority (CTRMA). Each project has consisted of collecting all lanes of roads maintained by CTRMA. CTRMA maintains approximately 432 lane miles of roadway for pavement assessment and 282 lane miles of roadway for right-of-way (ROW) asset inventory. The pavement condition portion of the project required DTS to collect CTRMA's network with a vehicle certified by the Texas A&M Transportation Institute for that purpose. Additionally, the pavement condition survey was completed per the TxDOT PMIS system scoring criteria. DTS staff included TxDOT certified pavement raters. The ROW asset inventory included several assets: bridges barriers, stand-alone attenuators, pavement striping, graphics and markers, driveways traffic signs and illumination structures. As the QA/QC Manager for these projects, Mr. Parker ensured the accuracy of project data deliverables.



Total years of experience

9

Years with firm

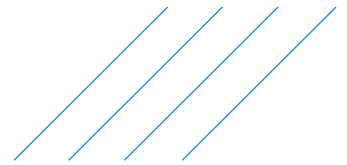
7

Education

B.S., Criminal Justice, University of Central Florida, 2011



AERIAL AMBIANCE



Ricky Flakes

Bridge Inspections

Mr. Flakes is a highly skilled Drone Pilot with extensive experience in capturing high-quality aerial imaging solutions across various industries within private and public sectors. Proven ability to efficiently and effectively execute drone data collection in hard-to-reach areas safely and on schedule while adhering to all FAA regulations.

RELEVANT PROJECT EXPERIENCE

Operations Manager / Drone Pilot
City of Houston - Houston, Texas

Project: Traffic Drainage and Operations Aerial Mapping, Imageries & Condition Data Collection Utilizing Unmanned Aerial System (UAS)

Lead Drone Pilot responsible for capturing drone imagery data for the Public Works and Engineering Department for the City of Houston. Main activities include but are not limited to the following:

- Create Pre-Flight Checklists to ensure safety of all personnel, bystanders and equipment on site
- Responsible for all flight planning and FAA coordination
- Obtain all necessary waivers for any flight locations in restricted airspace from the FAA or the Control Tower
- Collect aerial imagery data with high quality UAS equipment and capture video data in 4k-quality resolution
- Create Orthomosaic maps by utilizing the drone's GPS location to capture geo-referenced imagery data
- Perform asset condition maintenance assessments specific to client needs
- Download and extract all data to a secure cloud-based platform to the end user

Bridges:

Collect imagery data and 4k quality resolution videos along side bridges to inspect and ensure that bridge conditions are acceptable and metal beam guards are present and in good condition. Operate the UAS along a safe path on the upper side of the bridge to ensure that bridge clearance sign dimensions are visible and capture visual defects. Collect imagery data of joints under bridge for condition assessment.

Waste Water Operations:

Collect imagery data over manhole covers to access missing lids visibly damaged, covers or soil depressions within a 30 ft radius of manhole cover. Operate the UAS along the upper and lower side of the aerial pipe to assess for any visible damage or signs of leakage in the pipes. The UAS will also fly around the aerial pipe supports to search for damage of shifting in the structure. Once

Total years of experience

20

Years with firm

7

Education

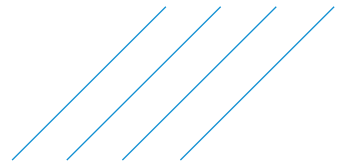
Associates Degree of Science
Houston Community College
Part 107, Federal Aviation License
King School Commercial Drone
Certificate

Certifications

FAA Remote Pilot Certification
Certificate Number: 3994844

Ricky Flakes

Drone Pilot /Bridge Inspector



completed, the PIC will fly around the general area to look for signs of soil depression or cave ins.

Drinking Water Operations:

Collect imagery data along the below listed assets to observe visual damage, rust, holes, leaks, roof damage and damage to fence perimeters.

- Ground Storage Tanks / Elevated Storage Tanks
- Chemical Tanks
- Well Sites
- Building Roof Tops
- Basins
- Backwash Tanks
- Valve Vaults
- Facility Perimeter Fence
- East Water Purification (Offsite Land Applications)
- EWPP 1, 3 and 3 Forebays
- Southeast Purification Plant Onsite Monofill & Onsite Lagoon

Storm Water Operations:

Collect imagery data and 4k-quality resolution videos over and alongside each Ditch/Basin at various locations.

Lead Drone Pilot responsible for capturing the drone imagery data for numerous departments throughout the City of Houston for the following projects:

Houston Area Community Development Projects:

- Waterproofing and Design Engineering
- Dale Carnegie
- New Hope Avenue J
- Law Harrington
- Green Oaks
- Gala at McGregor
- Mckee City
- Memorial Drive
- Heritage Senior
- The Citadel
- Temenos Place
- Connect South

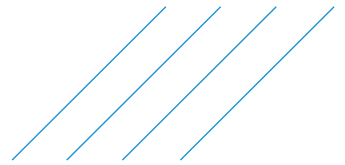
Operations Manager / Drone Pilot Texas Department of Transportation, Houston, Texas

Lead Drone Pilot responsible for capturing the drone imagery data for Grand Parkway 99 highway and conducted progress monitoring services that included the following activities:

- Coordinated all flight planning activities, FAA approvals and produced Pre-

Ricky Flakes

Drone Pilot /Bridge Inspector



Flight Checklists

- Obtained all necessary waivers for any flight locations in restricted airspace from the FAA or the Control Tower
- Collected aerial imagery data with high quality UAS equipment to inspect and document critical components of bridge support and truss structures
- Collected video data in 4k-quality resolution to access visual defects in hard-to-reach areas
- Created Orthomosaic maps by utilizing the drone's GPS location to capture geo-referenced imagery data
- Performed asset condition maintenance assessments specific to client needs
- Downloaded and extracted all data to a secure cloud-based platform to the end user



Kevin Wigen

Data Processor

Mr. Wigen is responsible for processing all data that comes out of DTS' Mobile Asset Collection vehicles. His role includes verifying the accuracy and integrity of all data collected, ensuring that it meets the quality standards of each project. Mr. Wigen has over nine years of experience with DTS and is an expert on DTS' proprietary EarthShaper™ software.

RELEVANT PROJECT EXPERIENCE

Professional Pavement Management Services, City of San Antonio, Texas. DTS provided a variety of pavement management services to the City including pavement condition assessment and maintenance of the City's pavement inventory. DTS used Mobile Asset Collection (MAC) vehicles to collect the pavement data. Following collection, automated pavement distress extraction occurred followed by verification / modification by trained pavement extractors, with pavement distress types based on the ASTM D6433 standard. DTS also collected rut and roughness data. DTS also analyzed the existing degradation curves and calculated revised curves to reflect actual measured performance. Deliverables included a geodatabase, a videologger application to load images for a particular location and 3-year and 5-year Pavement Preservation Plans. Mr. Wigen was the Data Processor.

Pavement and ROW Data Collection Services, City of Fort Worth, Texas. DTS provided professional pavement management services to the City including collecting pavement data and conducting condition assessments for right-of-way assets including sidewalks, ramps, signals, pavement markings, pavement striping, light poles and traffic signs. Mr. Wigen served as the Data Processor for the project.

Pavement Condition Survey and Right-of-Way Asset Inventory, Harris County, Texas. Utilizing its fleet of MAC vehicles, DTS collected 12,888 miles of roadway for Harris County, the county in which Houston is located. DTS provided the County with its first pavement condition survey as well as an inventory of sidewalks and ADA ramps. DTS prepared final reports for each of the four precincts within the County for pavement condition evaluation including reporting on IRI, PCI and related data. Mr. Wigen was the Data Processor on this project.

Pavement Management Information System, City of Houston, Texas. Mr. Wigen was the Data Processor for the City of Houston Pavement Management Information System – Next Gen (PMIS-Next G) project which, in addition to pavement data collection and analysis, included the extraction of right-of-way assets including curb and gutter, sidewalks, ramps, sidewalk obstructions and drainage features. DTS Mobile Asset Collection vehicles collected pavement and ROW data on 12,500 miles of major streets and local streets. DTS was subsequently selected by the City of Houston to perform similar services over a multi-year period, and Mr. Wigen once again served as the Data Processor.

Pavement Data Collection and Integration, City of Arlington, Texas. Mr. Wigen served as the Data Processor for the City's pavement condition assessment of its more than 3,000 lane miles of roadways. Following collection, automated pavement distress extraction occurred followed by verification / modification by trained pavement extractors. Pavement distress types were based on the ASTM D6433



Total years of experience

9

Years with firm

9

Education

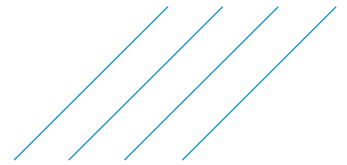
A.S., Supervisory Management,
Lakeshore Technical College, 2007

Software

EarthShaper™

Kevin Wigen

Data Processor



standard. DTS also collected rut and roughness data. The pavement information was integrated into the City's Cartegraph pavement management system. DTS analyzed the existing degradation curves and calculated revised curves to reflect actual measured performance.

Pavement Management Services, City of Plano, Texas. Mr. Wigen served as the Data Processor for this project which included automated data collection for street pavement and alley condition surveys, condition evaluation and preparation of a budget analysis and maintenance optimization for the City's approximately 542-centerline mile pavement network. The predominate concrete pavement network was evaluated in accordance with the ASTM D6433 standards.

Pavement, Signs, Bridges, Barriers, Attenuators, Driveways, Illumination Structures, Striping and Marking Inventories, Central Texas Regional Mobility Authority. DTS has completed two automated data collection cycles for the Central Texas Regional Mobility Authority (CTRMA). Each project has consisted of collecting all lanes of roads maintained by CTRMA. CTRMA maintains approximately 432 lane miles of roadway for pavement assessment and 282 lane miles of roadway for right-of-way (ROW) asset inventory. The pavement condition portion of the project required DTS to collect CTRMA's network with a vehicle certified by the Texas A&M Transportation Institute for that purpose. Additionally, the pavement condition survey was completed per the TxDOT PMIS system scoring criteria. DTS staff included TxDOT certified pavement raters. The ROW asset inventory included several assets: bridges barriers, stand-alone attenuators, pavement striping, graphics and markers, driveways traffic signs and illumination structures. Mr. Wigen was the Data Processor for these projects.

Pavement Management and ROW Survey, City of Orlando, Florida. For two separate contracts, the City contracted with DTS to collect pavement data for approximately 825 lane miles of City roadways including about 55 miles of brick surface streets. DTS used Mobile Asset Collection (MAC) vehicles to collect pavement and right-of-way asset data from which Pavement Condition Index and other relevant information was extracted. Mr. Wigen was the Data Processor for both projects.

Pavement Condition Rating and Sidewalk and ADA Ramp Inventory and Analysis, City of Greenville, South Carolina. Mr. Wigen served as the Data Processor for this project involving the collection of roadway condition data and images for all City-maintained roadways. The project also involved data collection and processing for approximately 265 miles of sidewalks which was gathered utilizing a DTS field sidewalk application. The collected sidewalk and ramp data included faulting, cracking, spalling, surface width, spalling, ramp slope, gutter slope, can vehicles block ramp, push button heights and more.

Pavement Condition Survey, Cobb County, Georgia. Mr. Wigen served as the Data Processor for this project which included software implementation, network database development, automated data collection for pavement condition surveys, budget analysis and maintenance optimization for the City's thoroughfares which were approximately 610 centerline miles. The pavement condition survey was conducted per the ASTM D6433 and data imported into Cartegraph. DTS is currently performing a second similar project for the County, and Mr. Wigen is also the Data Processor for this second contract.



Anthony Greives

Mobile Data Collection Manager

Mr. Greives has been on the Data Transfer Solutions team since 2015, and he has worked in several different positions during this time period. At DTS, his positions have included Mobile Asset Collection (MAC) vehicle operator, pavement analyst and LiDAR analyst. He became the Data Collection Manager in 2020 and now oversees all data collection conducted via the firm's Mobile Asset Collection (MAC) fleet and addresses any issues that may arise with equipment.

Mr. Greives experience includes

Street Data Collection and Pavement Management Program Update, City of Houston, Texas. Subsequent to successful completion by DTS of the similar 3-year City of Houston Pavement Management Information System (PMIS-Next G) project, the firm was selected by the City to carry out the 4-year Street Collection and Pavement Management Program Update. For all major and local streets in the City, DTS is performing a pavement survey, rating the pavement, determining the pavement width and geocoding the data. The mileage collected includes more than 1,200 centerline miles of major streets and 4,900 centerline miles of local streets. As the Data Collection Manager for the project, Mr. Greives ensures that there are no issues with the vehicles from the DTS Mobile Asset Collection fleet involved on the project.

Pavement and Asset Data Collection Services, Harris County, Texas. For the 12,888 lane miles of roadways maintained by Harris County, the third most populous county in the nation, DTS performed a variety of road asset services. DTS used several asset collection vehicles to capture pavement and right-of-way images to assist the County with maintaining its transportation assets. During the project, DTS provided pavement modeling, maintenance and rehabilitation updates and reports and also provided a sidewalk inventory including locations, photos, width and condition rating. Mr. Greives was the Asset Collection Manager for the project.

Pavement Data Collection and PCI Rating, City of Cincinnati, Ohio. The City of Cincinnati contracted with Data Transfer Solutions to perform pavement collection and determine PCI ratings for its 930 centerline miles of City-maintained roadways. DTS is rating the pavement per the ASTM D6433 standard and will integrate the data with the City's pavement management system. Mr. Greives is serving as the Asset Collection Manager for the project.

Consulting Services for Roadway Inventory & Evaluations, Rockdale County, Georgia. Data Transfer Solutions is currently collecting pavement data for the 480 centerline miles of roadway maintained by Rockdale County in accordance with the ASTM D6433 methodology. When complete, a Pavement Condition Index will be calculated for each segment, and the data will be incorporated into the County's pavement management system. DTS will also recommend maintenance activities for the system. Mr. Greives is the Asset Collection Manager for the project.

Pavement and Right-of-Way Asset Surveys, City of Roanoke, Virginia. The City contracted with DTS to perform pavement services in accordance with the ASTM D6433 standard on its 1,110 centerline miles of streets. Additionally, as part of the services, DTS provided right-of-way asset surveys of the City's pavement striping, sidewalks and ADA ramps. Mr. Greives served as the Asset Collection Manager.

Total years of experience

7

Years with firm

7

Education

Computer Repair and Networking



Member of the SNC-Lavalin Group

Anibal Rios

Pavement Evaluator

Mr. Rios is a Project Engineer at Data Transfer Solutions. Mr. Rios has strong experience working with pavement and right-of-way assets for clients across the nation. He is proficient in rating assets, performing quality control activities, importing data into pavement management software, preparing pavement condition reports and developing scenarios to ensure that clients can receive the maximum benefit in their operations and maintenance budgets. Mr. Rios is familiar with PAVER, Cartegraph, EarthShaper™, StreetSaver and ArcMap software. Additionally, Mr. Rios often uses VUEWorks® asset management software to assist clients with their scenarios.

Mr. Rios experience includes

Pavement Management and ROW Survey, City of Orlando, Florida. The City contracted with DTS to collect pavement data for approximately 825 lane miles of City roadways including about 55 miles of brick surface streets. DTS used Mobile Asset Collection (MAC) vehicles to collect pavement and right-of-way asset data from which Pavement Condition Index and other relevant information was extracted. Mr. Rios was the Project Engineer for the first phase of the project.

Pavement Condition Index Update, City of Peoria, Illinois. For this project, DTS was tasked with collecting pavement data, determining the Pavement Condition Index and providing an updated PAVER street database to the City. As the Project Engineer, Mr. Rios performed quality control activities, imported the data into PAVER and prepared reports for the project.

Pavement Management Data Collection Services, Seminole County, Florida. The County contracted with DTS to provide road surface testing for an updated survey of the surface and structural condition of approximately 870 centerline miles. DTS collected the data using Mobile Asset Collection vehicles and provided information to Seminole County in accordance with the ASTM D-6433 standard. Mr. Rios served as the Project Engineer for the 2017, 2018 and 2019 collections, and as such he was in charge of QA/QC, importing the data into MicroPAVER, developing pavement management scenarios and writing the final reports. He also assisted with the 2020 and 2021 collections in a subsequent contract with the County.

Pavement, Signs, Sidewalk & ADA Collection / Assessment, City of Lakeland, Florida. The City selected DTS to perform asset management services including pavement data collection and assessment, traffic sign data collection and assessment, sidewalk data collection and visual condition assessment and ADA ramp data collection. DTS uploaded the identified distress type data with corresponding severities and extents into a database, and then calculated each segment's Pavement Condition Index value for maintenance and budget planning. Mr. Rios served as the Project Engineer.

Pavement Analysis Services, City of Mesquite, Texas. DTS was contracted by the City of Mesquite to prepare a pavement assessment for the City's 1,251 lane miles of roadway. The services included pavement data collection and condition rating, as well as sidewalk data collection. As part of his role as the Project Engineer, Mr. Rios developed five-year and ten-year pavement rehabilitation plans for the City.



Total years of experience

7

Years with firm

7

Education

B.S., Industrial Engineering,
University of Central Florida, 2014

Certifications

Texas Department of Transportation
(TxDOT) Certifications
PMIS Visual Rater Cert Conc PV.
CON 110
PMIS Visual Rater Cert Flex PV. CON
111

Software

PAVER,
Cartegraph
EarthShaper™
StreetSaver
ArcMap
VUEWorks® asset management
software



Anibal Rios

Pavement Evaluator

Pavement Condition Survey and Right-of-Way Asset Inventory, Harris County, Texas. Utilizing its fleet of MAC vehicles, DTS collected 12,888 miles of roadway for Harris County, the county in which Houston is located. DTS provided the County with its first pavement condition survey as well as an inventory of sidewalks and ADA ramps. DTS prepared final reports for each of the four precincts within the County for pavement condition evaluation including reporting on IRI, PCI and related data. Mr. Rios was a Pavement Engineer on this project.

Pavement Data Collection, Colorado DOT. Mr. Rios served as a Pavement Rater for this project involving the collection of roadway condition data and images for all State-maintained highways for HPMS (Highway Performance Monitoring System) reporting. The number of miles of data/image collection for CDOT was approximately 12,000 miles annually. An additional 7,000 miles of second direction 2-lane roads were collected for roadway images only as an additional option. International Roughness Index (IRI) was collected using Federal Highway Administration approved equipment that met ASTM E950 standards. DTS provided CDOT an asset data dictionary that contained all HPMS roadway features and attributes through the Stereo Extraction Tool.

Pavement Management Data Collection Services, Pickens County, South Carolina. The County contracted with DTS to provide road surface testing for an updated survey of the surface and condition of approximately 870 centerline miles. DTS collected the data using Mobile Asset Collection vehicles and provided information to the County in accordance with ASTM D6433. Mr. Rios served as the Project Engineer, and as such he was in charge of QA/QC, importing the data into MicroPAVER, developing pavement management scenarios and writing the final reports.

Pavement Condition Rating and Sidewalk and ADA Ramp Inventory and Analysis, City of Greenville, South Carolina. Mr. Rios served as a pavement rater for this project involving the collection of roadway condition data and images for all City-maintained roadways. The City has approximately 265 miles of sidewalks and Mr. Rios also assisted with the QA/QC review of the collected sidewalk data which was gathered utilizing the DTS field sidewalk application. The collected sidewalk and ramp data includes faulting, cracking, spalling, surface width, spalling, ramp slope, gutter slope, can vehicles block ramp, push button heights, etc.

Pavement Condition Index Update, City of Durham, North Carolina. For this project, DTS was tasked with collecting pavement data, determining Pavement Condition Index and providing an updated PAVER street database to the City. As the Project Engineer, Mr. Rios performed quality control activities, imported the data into PAVER and prepared reports for the project.

Pavement Management Services, City of Charlotte, North Carolina. DTS was contracted by the City of Charlotte to prepare a pavement assessment for the City's 5,000 lane miles of roadway. The services included pavement data collection and condition rating, as well as ROW data collection. As the Project Engineer, Mr. Rios developed five-year and ten-year pavement rehabilitation plans for the City and led the PAVER imports.

Pavement Condition Assessment, City of West Jordan, Utah. Pavement Engineer. Data Transfer Solutions provided pavement condition assessment services to the City of West Jordan. These services include using Mobile Asset Collection (MAC) vehicles to collect geo-referenced data for the City's 724 centerline miles of roadway and pavement analysis and calculations.



Member of the SNC-Lavalin Group

Marcial Mota

Pavement Evaluator

Mr. Mota is a Pavement Engineer on the Data Transfer Solutions Mobile Asset Collection and Extraction Team. Mr. Mota has four years of experience in rating pavement, performing Quality Assurance and Quality Control of pavement distresses, performing PCI calculations, writing pavement reports and importing pavement data into a variety of pavement management software. He is proficient in EarthShaper™, AutoCAD, MicroStation, SAS, MicroPAVER and ArcMap. Mr. Mota is a member of the Society of Hispanic Professional Engineers.

RELEVANT PROJECT EXPERIENCE

Pavement Management Data Collection Services, Seminole County, Florida. For Seminole County, DTS used Mobile Asset Collection vehicles to acquire sub-meter accurate imagery of the County's 870 centerline miles of pavement in accordance with the ASTM D6433 standard. Approximately 1/3 of the network was collected each year. Following the rating of pavement by experienced personnel, DTS delivered a MicroPAVER database update and a GIS feature class file. Upon the completion of the first project on which Mr. Mota was a Pavement Engineer, DTS was awarded a subsequent project to perform the services for another 3-year period. Mr. Mota was the Project Engineer for the 2020 and 2021 collections.

Asset Management Services, Bexar County, Texas. Data Transfer Solutions collected roadway asset data related to the County's traffic infrastructure. This latest project, one of several similar projects for the County dating back to 2008, included a sign inventory as well as a pavement condition assessment of 2,400 miles of paved roads. A Mobile Asset Collection vehicle captured digital pavement imagery as well as street level images of traffic signs for use in asset extraction. DTS GIS staff then extracted signs from the imagery collected. The final delivery consisted of an Esri geodatabase comprised of industry standard JPGs, with geo-referenced information linked to the County's asset management system. Mr. Mota was a Pavement Engineer on the project.

Pavement Condition Survey, North Tarrant Express Mobility Partners 3. DTS recently completed this project encompassing 173 lane miles of this Texas expressway. The project involved data collection using a Mobile Asset Collection vehicle, 100% rating of pavement, Pavement Condition Index score development, rutting, ride quality and friction testing. As a Pavement Engineer for the project, Mr. Mota rated pavement in conformance with Texas Department of Transportation standards.

Professional Pavement Management Services, City of San Antonio, Texas. DTS provided a variety of pavement management services to the City including pavement condition assessment and maintenance of the City's pavement inventory. DTS used Mobile Asset Collection (MAC) vehicles to collect the pavement data. Following collection, automated pavement distress extraction occurred followed by verification / modification by trained pavement extractors, with pavement distress types based on the ASTM D6433 standard. DTS also collected rut and roughness data. DTS also analyzed the existing degradation curves and calculated revised curves to reflect actual measured performance. Deliverables included a geodatabase, a videologger application to load images for a particular location and



Total years of experience

4

Years with firm

4

Education

M.S., Civil Engineering, University of Central Florida, 2017

B.S., Civil Engineering, Universidad Iberoamericana, 2010

Certifications

Texas Department of Transportation (TxDOT) Certifications
PMIS Visual Rater Cert Flex PV. CON 111
PMIS Visual Rater Cert Conc PV. CON 110

Software

EarthShaper™
AutoCAD
MicroStation
SAS
MicroPAVER
ArcMap



Marcial Mota

Pavement Evaluator

3-year and 5-year Pavement Preservation Plans. Mr. Mota served as a Pavement Engineer.

Pavement Data Collection Services, City of Plano, Texas. Data Transfer Solutions is currently collecting and rating pavement information for the City of Plano. The project involves more than 500 lane miles of collection and rating. As a Pavement Engineer on the project, Mr. Mota is rating pavement and will assist with the final report.

Pavement Management System, City of Laredo, Texas. The City of Laredo selected Data Transfer Solutions to provide professional engineering services to the City. The scope of the project included the development of a fully functioning pavement management system for the City's road network to include verification of the existing road inventory, performing pavement distress surveys for more than 1,500 lane miles and evaluating, recommending and implementing an appropriate pavement management software program. Mr. Mota was a Pavement Engineer on the project team, and accordingly he assisted with a variety of activities including pavement rating and quality assurance / quality control.

Pavement Condition Rating, City of Charlotte, North Carolina. In our second pavement condition collection and rating project performed for the 17th most populous municipality in the nation, DTS captured roadway data and pavement images using Mobile Asset Collection vehicles. The pavement images were used for pavement condition analysis using the ITRE methodology. Other assets collected by DTS for the City's more than 2,500-centerline mile network were sidewalks, curb and curb type, average width of street per segment and presence of pavement striping. Mr. Mota served in a Quality Assurance / Quality Control capacity for this project.

Pavement Condition Survey, City of Durham, North Carolina. The City chose DTS to perform this field survey of the pavement condition of the network of 720 miles of paved City-maintained streets in accordance with the ASTM D6433 standard. In addition, DTS collected data regarding pavement width, type of curb and gutter and depth of gutter pan to the City's specifications. All results were uploaded into the City's MicroPAVER pavement management system. Mr. Mota was a Pavement Engineer for the project.

Pavement Management Data Collection Services, Pickens County, South Carolina. The County contracted with DTS to provide road surface testing for an updated survey of the surface and condition of approximately 870 centerline miles. DTS collected the data using Mobile Asset Collection vehicles and provided information to Pickens County in accordance with the ASTM D6433 standard. Mr. Marcial was a Pavement Engineer on the project.

Pavement Condition Survey, Cobb County, Georgia. Mr. Marcial served as a Pavement Evaluator for this project which included software implementation, network database development, automated data collection for pavement condition surveys, budget analysis and maintenance optimization for the City's thoroughfares which were approximately 610 centerline miles. The pavement condition survey was conducted per the ASTM D6433 standard, and the data was imported into Cartograph. Subsequent to this project, the City once again contracted with the firm to perform a follow-up survey of all County-maintained roadways, and Mr. Mota is serving as a Pavement Engineer.

Jeremy Price

GIS Expert and Data Integration

Mr. Price is a GIS Analyst at Data Transfer Solutions. With a background in GIS, he helps to coordinate Mobile Asset Collection (MAC) projects and serves as the Project Quality Manager on many projects. He works directly with multiple teams within DTS, as well as directly with clients regarding their geospatial needs and deliverables within projects.

RELEVANT PROJECT EXPERIENCE

Pavement Condition Assessment, City of West Jordan, Utah. Data Transfer Solutions provided pavement condition assessment services to the City of West Jordan. These services included using Mobile Asset Collection (MAC) vehicles to collect geo-referenced data for the City's 724 centerline miles of roadway and pavement analysis and calculations. Mr. Price served as the GIS Analyst and Project Quality Manager for the project.

Pavement Management Data Collection Services, Seminole County, Florida. For Seminole County, DTS used Mobile Asset Collection vehicles to acquire sub-meter accurate imagery of the County's 870 centerline miles of pavement in accordance with the ASTM D6433 standard. Approximately 1/3 of the network was collected each year. Following the rating of pavement by experienced personnel, DTS delivered a MicroPAVER database update and a GIS feature class file. Upon the completion of the project, DTS was awarded a subsequent project to perform the services for another 3-year period. Mr. Price served as the GIS Analyst for the initial project, and he has the same role for the current project.

Pavement Condition Assessment, Brevard County, Florida. Data Transfer Solutions provided pavement condition assessment services to Brevard County. These services included using Mobile Asset Collection vehicles to collect geo-referenced data for the County's 1,120 centerline miles of roadway, pavement analysis and calculations, maintenance and repair strategy recommendations, condition forecasting, budget forecasting and recommendations for appropriate pavement management software. Mr. Price served as the GIS Analyst for the project.

Pavement Condition Survey and Right-of-Way Asset Inventory, Harris County, Texas. Utilizing its fleet of MAC vehicles, DTS collected 12,888 miles of roadway for Harris County, the county in which Houston is located. DTS provided the County with its first pavement condition survey as well as an inventory of sidewalks and ADA ramps. DTS prepared final reports for each of the four precincts within the County for pavement condition evaluation including reporting on IRI, PCI and related data. Mr. Price served as the GIS Analyst for the project.

Right-of-Way Imagery Collection, Asset Extraction, and Inventory, Franklin County, Ohio. DTS utilized its fleet of Mobile Asset Collection vehicles to provide right-of-way assets on the City's 543 lane mile network. DTS provided a spatial geodatabase of assets including images and conditions. DTS also preparing a videologger of all the images taken from the MAC vehicles for the project. Mr. Price was the GIS Analyst and the Project Quality Manager for the project.



Total years of experience

6

Years with firm

3

Education

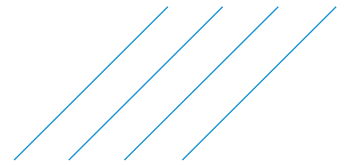
B.S., Environmental Science/
Environmental Management,
University of West Florida, 2014

Certifications

Geographic Information Systems
Certificate, University of West Florida,
2014
Project Quality Manager (PQM) Silver
Certificate, 2020

Jeremy Price

GIS Expert and Data Integration



Pavement Condition Survey, City of Houston, Texas. In its second multi-year contract with the City of Houston, DTS is using its fleet of Mobile Asset Collection vehicles to collect pavement and other assets along 1,231 centerline miles of major streets and 4,918 centerline miles of local streets for the City of Houston. DTS is providing the City with a pavement condition survey and a videologger allowing pavement management personnel to take a virtual drive along City streets. DTS will also prepare final reports for the City for pavement condition evaluation including reporting on IRI, PCI and related data. Mr. Price is the GIS Analyst for the project.

Aerial Mapping, Imageries & Condition Data Collection Utilizing Unmanned Aerial System (UAS), City of Houston, Texas. The City selected the Data Transfer Solutions team to provide UAS services with high-resolution georeferenced deliverables in TIFF and KMZ formats. The services include exploratory survey and mapping, condition rating and emergency response assessment along with cloud storage. Services are being provided in compliance with condition rating systems provided by the City for ditches, bridges and wastewater assets among others. Mr. Price is the Lead Technician on the project.