FARMERS BRANCH

RESOLUTION NO. 2024-188

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FARMERS BRANCH, TEXAS, AWARDING CONTRACT TO THE STREETSCAN USA, INC. FOR A PAVEMENT CONDITION INDEX AND ASSET DATA COLLECTION SYSTEM FOR $89,295.00 AS A SERVICE; AUTHORIZING THE CITY MANAGER TO EXECUTE THE CONTRACT AND PROVIDE FOR PAYMENTS ON THE CITY'S BEHALF; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City desires to contract for street pavement assessment services, to process and analyze the survey data, to determine a numerical Pavement Condition Index, to have the capability to visualize and manage the data in a web-based GIS application, and the potential for collecting and rating data for city maintained street signs and pavement markings; and

WHEREAS, after undergoing a competitive bidding process, Bid No. 25-03, and having received, opened, reviewed and scored the proposals for the project, Publie Works Administration recommends awarding StreetScan USA, Inc. the professional services contract for pavement condition index and asset data collection based on the proposal evaluation criteria set forth in the bid tabulation for (FY 2024-2026); and

WHEREAS, the City Council has determined that it would be in the public interest to enter a contract in accordance with the foregoing recommendation.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FARMERS BRANCH, TEXAS, THAT:

SECTION 1. The City Manager is hereby authorized to (a) award the professional services contract to, and authorize services from StreetScan USA, Inc. for the annual services (FY 2024-2025) of pavement condition survey and asset data collection in an amount not to exceed $89,295 as set forth in Exhibit "A" ("Professional Services Agreement"), attached hereto and incorporated herein by reference; (b) subject to the availability of current funds, make additional expenditures in excess of the foregoing "not to exceed amount" at the price set forth in the RFP Response if such additional purchases are reasonable and necessary to complete work relating to the pavement conditions survey and asset data collection based on the proposal evaluation criteria during FY 2024-2025; and (c) to execute other documents as the City Manager determines to be reasonable and necessary and in compliance with state law and city policies.

SECTION 2. This resolution shall become effective immediately from and after its passage.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF FARMERS BRANCH, TEXAS, THIS 21 **DAY OF JANUARY 2025.**

ATTEST:

Stacy Henderson, City Secretary

APPROVED:

Terry Lynne, Mayor

APPROVED AS TO FORM:

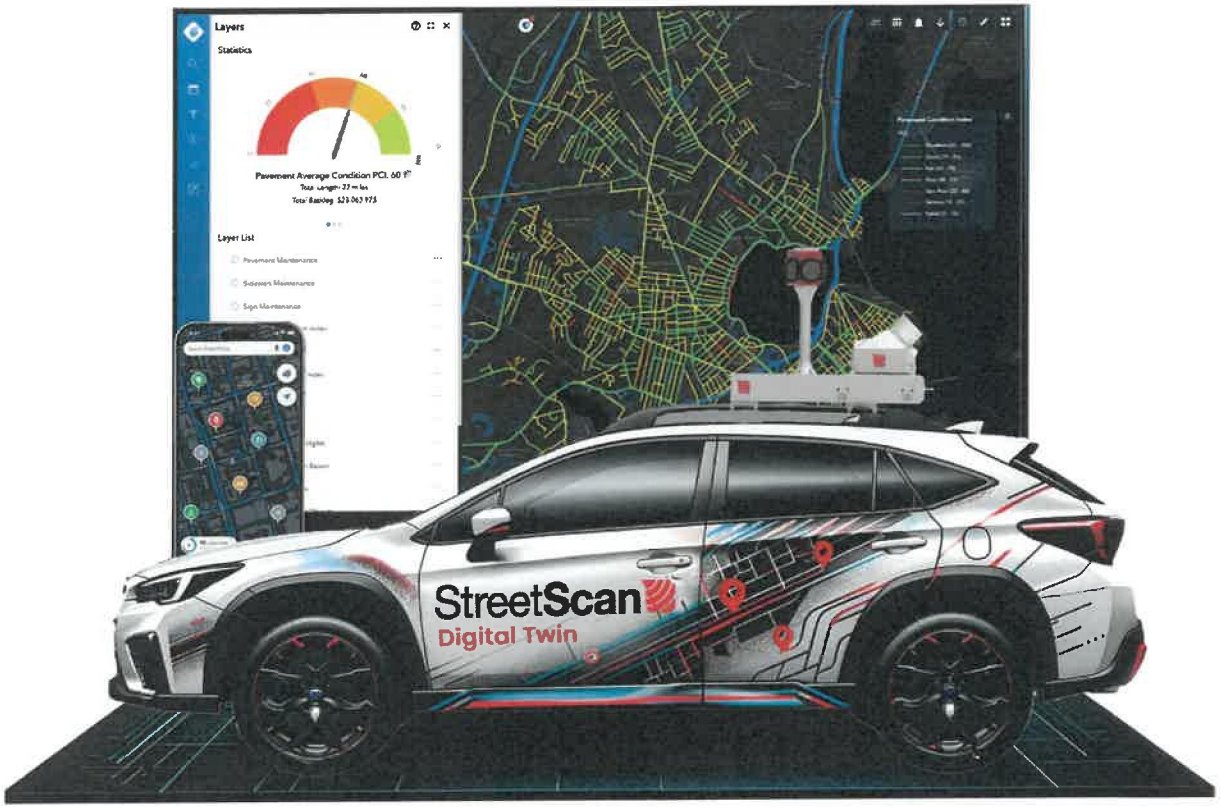
Nicole A. Cox

Whitt Wyatt, City Attorney

[sr 12.26.2024]

StreetScan | streetlogix

POWERED BY citylogix



REQUEST FOR PROPOSALS 25-04

PAVEMENT CONDITION SURVEY AND ASSET DATA COLLETION

City of Farmers Branch, TX

November 18, 2024

Docusign Envelope ID: D8777A0A-3C0F-4BB4-8B82-22BFA6F90D03

Form 1: Acknowledgement of Addenda

The Proposer acknowledges receipt of the following Addenda to the solicitation:

Addendum Number	Date
Addendum 1	November 14, 2024
Addendum 2	November 13, 2024
Addendum 3	November 13, 2024

This Proposal reflects our best estimates, and/or actual costs as of this date, and conforms to the requirements provided in the City Proposal package. By submitting this Proposal, the Proposer grants the City the right to examine, as the basis for pricing that will permit an adequate evaluation of the proposed price, books, records, documents, and other types of factual information, if specifically referenced or included in the Proposal. The City shall have the right to make such investigations as deemed necessary to determine the ability of the Proposer to perform the services required. Upon request by the City, the Proposer shall furnish and certify all such supporting data and information that the City may request to demonstrate the Proposer's qualifications.

The Proposer also agrees that the price to the City, including profit or fee, may be, at the option of the City, adjusted to reduce the price to the City to the extent that the price was based on inaccurate, incomplete, or non-current data supplied by the Proposer.

This response is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation. This Proposal is not submitted in conformity with any agreement or understanding with any Proposer to submit a false or sham Proposal. Proposer has not sought by collusion to submit a falsetto to obtain for itself or any other Proposer, an advantage over any other Proposer or over the City of Farmers Branch.

In submitting this Proposal, the undersigned agrees that no Proposal may be withdrawn for a period of six (6) months after the date of receipt of Proposals, and that all Proposals shall be valid for this entire period, subject to cost adjustment as identified, unless advance written consent for such withdrawal is granted by the City.

Please check the appropriate box: ☑Corporation ☐Partnership ☐Sole Proprietor ☐Unincorporated

Include either ☐Social Security or ☑Federal Tax Identification Number: 933866466

Name of Firm StreetScan USA Inc.	Phone 617-399-8236
Address 605 Salem Street, Wakefield MA 01880	Fax
Type or Print Name and Title of Qualified Proposer Jon-Erik Dillon, CEO and President	**Attest:**
Signature of Qualified Proposer: DocuSigned by: Jon Erik Dillon 53656F61F0694AF... Date: November 14, 2024	**Corporate Seal**

Docusign Envelope ID: D8777A0A-3C0F-4BB4-8B82-22BFA6F90D03

Form 2: Declaration

The undersigned, as Proposer, declares that the only persons/entities interested in this Proposal are those named herein, that no other person/entity has any interest in this Proposal or in the Contract for services to which this Proposal pertains, that this Proposal is made without connection or arrangement with any other person/entity and that this Proposal is in every aspect fair, in good faith, and without collusion or fraud.

The Proposer further declares that he has complied in every respect with all requirements of this Request for Proposals, that he has read all attachments and has satisfied himself fully relative to all matters and conditions with respect to the services to which the Proposal pertains.

The Proposer states that this Proposal is based upon the Request for Proposal documents and attachments.

StreetScan USA Inc.
Firm/Corporation

605 Salem Street, Wakefield MA 01880
Address

Jon-Erik Dillon
Name

DocuSigned by:
Jon Erik Dillon
53656F61F0694AF...
Signature

CEO and President
Title

November 14, 2024
Submittal Date

Form 3: Non-Collusion Affidavit

STATE OF Florida : **COUNTY OF:** Broward

I state that I am the CEO and President of StreetScan USA Inc. (Name of firm) and that I am authorized to make this affidavit on behalf of said firm, and its owners, directors, and officers. I am the person responsible in said firm for the price(s) and the amount of this Response.

I state that:

1. The price(s) and amount of this Response have been arrived at independently and without consultation, communication or agreement with any other contractor, Proposer or potential Proposer.

2. Neither the price(s) nor the amount of the Response, and neither the approximate price(s) nor approximate amount of this response, have been disclosed to any other firm or person who is a Proposer or potential Proposer, and they will not be disclosed before opening.

3. No attempt has been made or will be made to induce any firm or person to refrain from responding on this agreement, or to submit a Response higher than this Response, or to submit any intentionally high or noncompetitive Response or other form of complementary Response.

4. The Response of said firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive Response.

5. _StreetScan USA Inc. (name of firm), its affiliates, subsidiaries, officers, directors and employees are not currently under investigation by any governmental agency and have not in the last five (5) years been convicted or found liable for any act prohibited by state or federal law in any jurisdiction, involving conspiracy or collusion with respect to proposing on any public contract, except as follows:

I state that StreetScan USA Inc. (Name of firm) understands and acknowledges that the above representations are material and important and will be relied on by the City in awarding the agreements for which this Response is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from the City of Farmers Branch of the true facts relating to the submission of Responses for this agreement. I understand and said firm understands that any fraudulent concealment will allow the City to pursue all applicable remedies at law or equity included, but not limited to, the right to reject this Response.

Jon-Erik Dillon
Signature

Jon-Erik Dillon
Name

CEO and President
Company Position

Sworn to and Subscribed before me

This 11th day of November, 2024

David Merkatz
(Notary Public) David Merkatz

My Commission Expires: 02/28/2027

David Merkatz
NOTARY PUBLIC
STATE OF FLORIDA
Appt. No. HH 367674
Expires February 28, 2027
Online Notary Center

Notarial Act performed by Audio-Video Communication.

2.1 OVERVIEW OF CONTENTS

2.2 COMPANY INFORMATION

A. COMPANY OVERVIEW

Company name: StreetScan USA Inc. (previously known as StreetScan Inc.)

1) **Year founded:** 2015 / **Number of continuous years in business:** 9 years
2) **Ownership status:** private company
3) Federal Tax Identification Number: 933866466
4) **Name, address, telephone number, and title of the person(s) whom the City can contact about the Proposal:** Angie Stevens, Sr. Account Manager, 605 Salem Street, Wakefield MA 01880, (314) 323-8640.
5) Names, titles, and resumes of Proposer officials who will serve as primary Proposer contacts: Chris Hahn, Director of Customer Success and Project Lead; Yash Channe, Project Coordinator
6) Length of time and years during which the Proposer has provided the Services contemplated by this RFP: 9 years
7) Insurance carrier(s), types, and amounts of coverage currently maintained by the Proposer: certificate to be provided by vendor upon selection as per City's response on November 12, 2024.
8) Availability to complete project: as per schedule provided on page 28.
9) Three references of other cities where similar services have been provided: Kilgore TX, Marshall TX, Terell TX. For more details, please refer to section C. References.

About StreetScan:

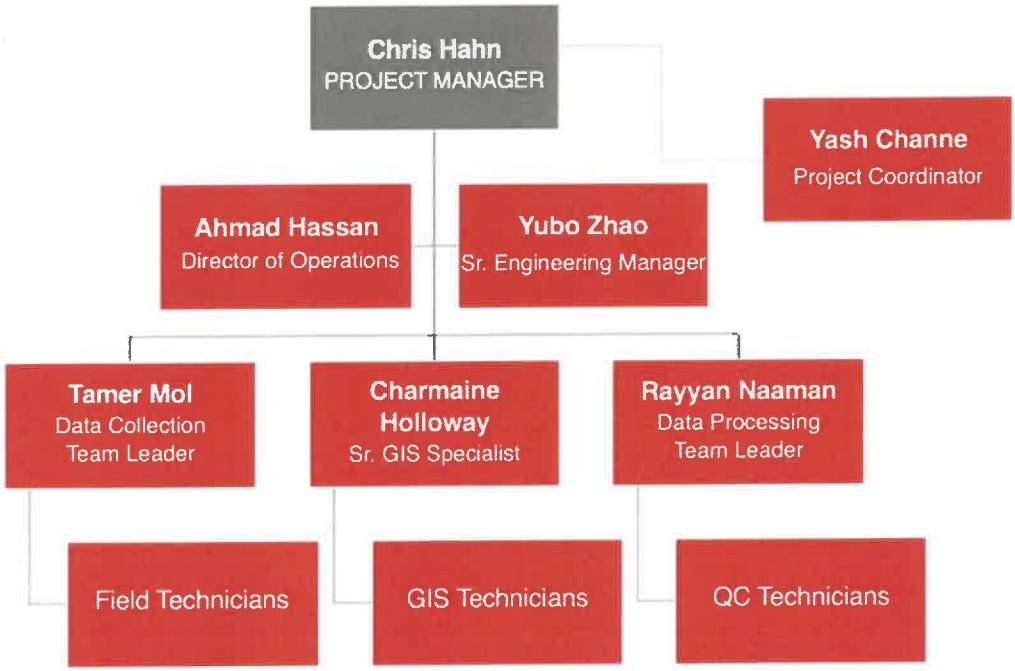
StreetScan is a premier data provider and analytics company serving smart cities' transportation infrastructure needs. Our data collection vehicles, ScanCars and E-scooters, enable municipalities to extract and monitor critical assets such as streets, sidewalks, traffic signage, pavement markings, and other transportation infrastructure assets. Our comprehensive suite of services, coupled with our intuitive, GIS-based transportation asset management software, empowers municipalities to make well-informed decisions. Streetlogix software provides robust visualization and analytical tools, maximizing the use of collected assessment data to drive optimized budgets. This powerful toolset has enabled municipalities to create defensible data-driven Capital Improvement Plans while successfully justifying budgeting requests.

StreetScan gained prominence through an $18 million U.S. federal grant, supporting the development of a new sensing and analytics platform for road monitoring. This initiative, known as the Versatile Onboard Traffic Embedded Roaming Sensors (VOTERS), was a five-year research project overseen by Northeastern University. During this period, we collaborated with various Boston-area municipalities to refine our service offering. In 2015, StreetScan emerged as an independent entity, commercially serving clients across the U.S. and Canada.

Over the past nine years, StreetScan has grown to service over 300 customers throughout the U.S. and Canada, including five in the state of Texas. To date, we have assessed approximately 48,500 centerline miles of road, 9,750 miles of sidewalk, and 55,000 ramps. With a team of 50+ professionals stationed throughout two countries, we continue to expand and grow, bringing on new municipal customers all over North America. The company continues to innovate, and recently received its first road LiDAR system. Leveraging state-of-the-art LiDAR technology, StreetScan can now conduct road assessments on a larger scale while simultaneously streamlining costs and minimizing inspection times.

B. PROJECT TEAM

StreetScan's office is in Wakefield, MA. The key personnel who will be directly involved with City Staff will be led by **Project Manager, Chris Hahn**. All the work will be performed in-house and there will be no subcontractors.



PROJECT MANAGER: Chris Hahn, Director of Customer Success

Chris will provide project management leadership for the pavement condition assessment. **As the primary point of client contact, Chris will coordinate the project from the kickoff meeting to delivery**. He works closely with our customers throughout their implementation and on-going customer care, helping to ensure that clients reach their goals to enhance their operations.

Chris's key responsibilities include the following:

- Coordinate the technical team and operations team
- Schedule a kickoff meeting with the client team to clarify the requirements of each project
- Gather required existing GIS inventory and condition data
- Confirm project scope and objectives
- Provide geotechnical support for target route creation
- Ensure resource availability and allocation
- Develop a detailed project plan to monitor and track progress
- Manage changes to the project scope, project schedule, and project costs.
- Conduct Project Delivery Meeting communicating road rating results, maintenance and repair suggestions, and further data analysis of the road network.

Chris brings over 16 years of progressive experience in the software industry, most recently focusing on municipal enterprise level software solutions. Chris is primarily responsible for streamlining business operations, using his vast experience to ensure that consistent delivery and client satisfaction are the cornerstones of our customer's experience. Using his business analyst background, Chris is well positioned to understand customers' needs and goals to help tailor solutions that optimize their operations and workflows.

PROJECT TEAM: STREETSCAN

Ahmad Hassan – Director of Operations:

Ahmad graduated from The Lebanese American University with an MBA in Business Management as well as a BS in Computer Science and gathered over 20 years of experience in the world of IT, most of which was in the GIS field. He co-founded Orion Middle East, a leader in the GIS mapping industry working throughout the Middle East region and consulted for several IT and GIS projects. His last venture was creating iCare, which is a management system designed for schools and daycares and is currently in use in 15 countries around the world. At StreetScan, Ahmad is responsible for overseeing our North American operations and ensuring our customers' needs are met.

Yubo Zhao – Senior Engineering Manager:

Yubo is one of the original engineers that researched and developed StreetScan's service. He joined StreetScan as a Research and Development Engineer and was instrumental in the initial setup of the firm. He designed hardware for the original vehicle-mounted sensor system for road inspections, as well as algorithms to detect road contours and distresses from the system's collected sensor data. Additionally, he developed algorithms to calculate StreetScan's pavement condition index (PCI). Yubo also trained, managed, and provided tech support to all StreetScan Inspection Crews. He brings over 10 years' experience and has advanced to become StreetScan's Senior Engineering Manager, responsible for developing hardware and software tools used by the Operations Team for surveying and processing the data. Yubo also supervises the technical support provided to our teams. He received his Ph.D. in Interdisciplinary

Engineering in 2015 and his M.S. in Mechanical and Structural Engineering in 2013 from Northeastern University in Boston, MA, and is the author of numerous technical reports.

Charmaine Holloway – Sr. GIS Specialist:

Charmaine leads our GIS team who ensures all data collected is properly geo referenced, coded and QA in the client database. She originally joined StreetScan as a QC Supervisor, where she led, trained, and coached a team of specialists performing quality control on extracted features and assets to ensure accuracy. Charmaine has over 10 years' experience in the data collection field and has worked and volunteered for many organizations and universities collecting scientific data, including Environment Canada, the Ontario Ministry of Natural Resources and Forestry, and Esri. She holds a bachelor's degree in science, Biology from the Memorial University of Newfoundland and has completed the GIS Application Specialist Program from Sir Sanford Fleming College.

Tamer Mol – Data Collection Team Leader:

Tamer oversees our data collection operations. With a keen focus on effective leadership, coaching, and motivation, he guides our team of Field Technicians, ensuring they meet delivery and quality objectives consistently. With over 15 years of diverse experience and education, Tamer possesses a comprehensive skill set spanning various sectors, including natural resources, technical fields, and outdoor environments. His expertise includes proficiency in Geographic Information Systems, Surveying and Drafting, as well as Project Management, among other key areas. Tamer holds a bachelor's degree in Geographic Information Systems from the Southern Alberta Institute of Technology. Additionally, he has pursued further specialization in GIS, Mapping & Spatial Analysis from the University of Toronto, as well as an Engineering Project Management specialization from Rice University. Furthermore, Tamer has earned a Certificate in Surveying and Spatial Information Services from Central Institute of Technology, and a Diploma in Management from Polytechnic West.

Rayyan Naaman – Data Processing Team Leader:

As Data Processing Team Leader, Rayyan performs quality control of roadway geospatial data gathered by data collection teams. He evaluates the accuracy and quality of derived geospatial road information according to the predefined standards and guidelines. Rayyan works closely with the engineering team to provide technical and general reports for project supervisors about different troubleshooting spatial data issues. He originally joined as QC Technician, working his way up to Supervisor and ultimately Data Processing Team Leader. With over 7 years' experience and strong IT skills, Rayyan excels in presenting geographic data in an easy-to-understand manner using analytical and problem-solving skills. He holds a Master's degree in Innovation Management from the École de technologie supérieure in Montréal, as well as a Master's degree in Computer Communication Engineering from the Arts, Science and Technology University in Lebanon.

Yash Channe – Project Coordinator:

Yash Anil Channe is a dedicated and skilled professional with a Certified associate in project management (CAPM) and a Green Belt in Lean Six Sigma. With a solid foundation in industrial engineering and project management, Yash effectively combines technical knowledge and leadership capabilities. Yash holds a

master's degree in industrial engineering from Concordia University and a Bachelor's degree in Mechanical Engineering from MIT World Peace University. This educational background enables him to integrate engineering principles with business management strategies. In his current role as Project Coordinator at StreetScan, Yash manages multifaceted projects of various sizes and durations. He ensures effective communication among team members, including field technicians, clients, and management, fostering a positive work environment that encourages collaboration and productivity. Yash brings four years of experience and a proven track record of meeting delivery and quality objectives. He excels at managing project budgets with precision and provides timely, detailed updates on project status and workload.

Full resumes are included in Appendix A.

C. PROJECT REFERENCES

PROJECTS	
City of Marshall, TX Eric Powell Director of Public Works 903-935-4489 powell.eric@marshalltexas.net 815 North Kilgore Street, Kilgore, TX 75662	Scope of work: • **Centerline miles surveyed: 200** • **Pavement scan completed in 2020** • **Asset Management Software** • **Work Order Management 2024** • **Citizen Engagement 2024** • **360 Imagery Viewer**
City of Kilgore, TX Austin Farris (903) 988-4118 austin.farris@cityofkilgore.com 815 North Kilgore Street Kilgore, TX 75662	Scope of work: • **Centerline miles surveyed: 108** • **Pavement scan completed in 2018 and 2024** • **Sidewalk scan, sidewalk width, and ADA ramp completed in 2018 and 2024** • **360 Imagery Viewer**
City of Terrell, TX Glenn Caldwell 972-551-6600 gcaldwell@cityofterrell.org 201 East Nash Street, P.O. Box 310 Terrell, TX 75160	Scope of work: • **Centerline miles surveyed: 116** • **Pavement scan completed in 2023** • **Sidewalk scan, sidewalk and ADA ramp completed in 2023** • **Asset Management Software**
County of Hamilton, TN Brandon Mauracher Highway Director 423-209-5050 brandonm@hamiltontn.gov 4005 Cromwell Road, Chattanooga, TN 37421	Scope of work: • **Centerline miles surveyed: 868** • **Pavement scan completed in 2023** • **Asset Management Software** • **360 Imagery Viewer**

City of Carmel, IN Eric Shanayda GIS Technician 317-733-2001 1 Civic Sq Carmel, IN 46032	Scope of work: • **Centerline miles surveyed: 543** • **Pavement scan completed in 2022** • **Miles of Trails surveyed: 115** • **Trails scan completed: 2023** • **360 Imagery Viewer** • **Asset Management Software**

D. PROJECT DEVELOPMENT EXPERIENCE

Over the past nine years, StreetScan has grown to service over 300 municipalities throughout the U.S. and Canada, including five in the state of Texas. To date, we have assessed approximately 48,500 centerline miles of road, 9,750 miles of sidewalk, and 55,000 ramps, as well as provided asset management software.

2.3 PROPOSAL NARRATIVE

A. PROJECT INITIATION

StreetScan will follow the project steps explained below:

Project Initiation/Kick-off – The review and planning stage is critical in laying a proper foundation to the project. StreetScan is essentially looking for a complete knowledge transfer from City staff to accurately plan its routes and data integration in the steps following. Our team will virtually meet with City staff and review the street network segmentation provided to us, as well as the project schedule, previous maintenance program and practices, and software solution.

B. ROAD NETWORK SEGMENTATION

Network Referencing – StreetScan will confirm the quality of the GIS road network provided by the City for the approximately 206.94 centerline miles of roadway to be included in this project. *Note: If a GIS road layer doesn't exist or needs to be revised, StreetScan can assist in creating it. Any work performed by StreetScan USA Inc. to produce any GIS files will be billed at our GIS Technician hourly rate.*

StreetScan recommends defining road segments from intersection to intersection, which is the most common approach. The RFP's 50-foot segmentation requirement is smaller than what we typically encounter, which may cause some challenges for data collection and processing. Additionally, our condition rating is density-based, meaning that the condition scores for each segment may be lower than anticipated. Using small segments might not yield the insights expected from the scan. However, StreetScan remains committed to working with the City in finding the most efficient and accurate way and will work from the segmentation provided by the City.

A comprehensive list of the GIS requirements from the City is included in Appendix A.

C. PAVEMENT CONDITION DATA COLLECTION

Pavement Condition Data Collection – StreetScan will utilize a sensor and image-based data collection platform to automatically collect continuous road surface data. The system utilizes the following technologies:

- Surface imaging technology
- LiDAR technology
- 360° HD Imagery
- All systems and data streams will be GPS geotagged
- All survey work shall be performed on dry pavement and in lighting conditions that assure usable data

StreetScan offers a technology-based Pavement Management approach for continuous health monitoring of your roadway network. Combining years of R&D at Northeastern University, StreetScan's vehicles and cloud-based asset management platform, Streetlogix, saves you time and makes your repair dollars go further. We have developed a process to effectively Scan, Process and Manage your transportation infrastructure data.

Regularly assessing the pavement condition allows City officials to identify areas that require maintenance or repair. Scanning the pavement condition every three years, our recommendation, provides valuable data for long-term infrastructure planning. By monitoring the condition of the pavement over time, City officials can identify patterns and trends, evaluate the effectiveness of previous maintenance strategies, and make informed decisions about future investments in road infrastructure. Timely maintenance based on accurate assessments can help municipalities save money in the long run. By identifying and addressing pavement issues early on, they can prevent further deterioration and extend the lifespan of the pavement. This approach is often more cost-effective compared to allowing the pavement to degrade significantly, which would necessitate complete resurfacing or reconstruction.

TASK 1: DATA COLLECTION

StreetScan collects Lidar/imagery data and utilizes 360° imaging technology to measure road defects, such as cracking, bumps, and potholes. The 360° HD imaging camera provides 10' of lateral road coverage and seamless road scanning in the direction of travel at speeds up to 65 mph., supplying imagery of the road surface and Right-of-Way assets. An Inertial Measurement Unit (IMU) enabled GNSS position system provides position location, even in the event of intermittent GPS satellite coverage. Data collected is processed to assign an overall condition rating for each road (PCI). The rating ranges from 0-100, where 0

is the worst possible road and 100 is the best. All systems and data streams will be GPS geotagged. All survey work shall be performed on dry pavement and in lighting conditions that assure usable data.

Assets such as traffic signs extracted from our LiDAR/Imagery collection provide a detailed inventory and condition assessment.

Distresses and Condition Rating:

Data collected is reviewed by quality control (QC) technicians to locate distresses and information about the road that is used to determine the rating of the PCI per segment. The rating is calculated based on the quantity, type, and severity of distresses on a segment.

Sample Excellent segment (86-100)

Sample Good segment (70-85)

Sample Poor to Very Poor segment (25-40)

Sample Very Poor to Failed segment (0-25)

Pavement Distress Definitions

Surface Type

C. Asphalt D. Surface-treated **E.** Concrete

Asphalt Pavement

1.1. Crack-Alligator

A series of interconnected cracks caused by fatigue failure of the surface under repeated traffic loading. The cracks are many-sided, sharp-angled, and in a pattern resembling the back of an alligator.

Table I. Crack-alligator severity levels

Severity Description	Area of coverage within analysis-zone
Minor	1-25%
Medium	25-50%
Severe	50-100%

1.2. Bumpiness

Bumpiness is any unevenness in the road surface that can be felt by anyone riding in a vehicle over the road.

Table II. Bumpiness severity.

Severity Description	Area of coverage within analysis-zone
Minor	1-25%
Medium	25-50%
Severe	50-100%

1.3. Potholes

Potholes are bowl-shaped depressions on the pavement surface. They generally have sharp edges and vertical sides near the top of the hole.

Table III. Potholes severity.

Severity Description	Total diameter of all potholes in analysis-zone
Minor	4-8 in
Medium	8-18 in (1.5ft)
Severe	Greater than 18 in (1.5 ft)

*** If the pothole has a diameter of less than 4 inches, then it would not be treated as a pothole.

1.4. Crack-Longitudinal & Transverse

Longitudinal cracks run parallel to the pavement's centerline. They may be caused by a poorly constructed paving lane joint; shrinkage of the surface due to low temperatures or hardening; or a reflective crack caused by cracks beneath the surface course, including cracks in concrete slabs (but not at concrete joints)

Transverse cracks extend across the pavement at approximately right angles to the pavement's center line or direction of lay down. In other words, they are perpendicular to the pavement's center line.

Table IV. Crack-longitudinal severity levels.

Severity Description	Total Length of Cracking
Minor	1 - 50 ft
Medium	50 - 100 ft
Severe	Greater than 100 ft

1.5. Crack-Block

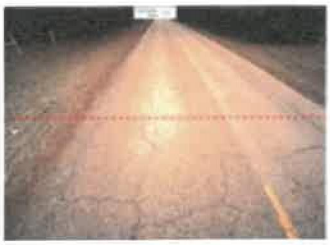
Block cracking is less dense than crack-alligator. Block cracking is a series of large (typically one foot or more), rectangular cracks on an asphalt pavement's surface. The cracks are interconnected with ~90-degree angles that divide the pavement up into rectangular pieces. This type of cracking typically covers large areas and may occur in areas where there is no traffic. Block cracking is typically caused by shrinkage of the asphalt pavement due to temperature cycles.

Table V. Crack-Block severity levels.

Severity Description	Total Length of Cracking
Minor	1 - 50 ft
Medium	50 - 100 ft
Severe	Greater than 100 ft

Crack-Block – Minor

Crack-Block – Medium



Crack-Block – Severe

1.6. Crack-Seal

Crack seal products are used to fill individual pavement cracks to prevent entry of water or other non-compressible substances such as sand, dirt, rocks, or weeds. Only presence is marked.

Crack-Seal - Example 1

Crack-Seal - Example2

1.7. Patches – Asphalt/Concrete

A patch is an area of pavement that has been replaced with new material to repair the existing pavement. A patch is considered a defect no matter how well it is performing (a patched area or adjacent area usually does not perform as well as an original pavement section).

Patches - Example 1

Patches - Example 2

Concrete Pavement

1.8. Corner Break

A Crack that intersects the joints at a distance less than or equal to one-half the slab length on both sides, measured from the corner of the slab.

Severity: Depending on the crack width and the number of cracks in the area between the break and the joints

Corner Break - Example 1

Corner Break - Example 2

1.9. Durability / D Cracking

"D" cracking is caused by freeze-thaw expansion of the large aggregate, which, over time, gradually breaks down the concrete. This distress usually appears as a pattern of cracks running parallel and close to a joint or linear crack. Since the concrete becomes saturated near joints and cracks, a dark-colored deposit can usually be found around fine "D" cracks. This type of distress may eventually lead to disintegration of the entire slab.

Severity: Depending on the area of cracks and how loose are the pieces.

D Cracking - Example 1

D Cracking - Example 2

1.10. Linear/Map Cracking, Crazing and Scaling

These cracks, which divide the slab into two or three pieces, usually are caused by a combination of repeated traffic loading, thermal gradient curling, and repeated moisture loading. (Slabs divided into four or more pieces are counted as divided slabs.) Hairline cracks that are only a few feet long and do not extend across the entire slab, are counted as shrinkage cracks.

Severity: Depending on the width of cracks, if it is filled or not and any case of faulting.

Fine, or hairline cracks that extend only through the upper surface of the concrete named map cracking/crazing and scaling are also considered as same distress. The cracks tend to intersect at angles of 120. Map cracking or crazing usually is caused by concrete over-finishing and may lead to surface scaling, which is the breakdown of the slab surface to a depth of approximately 6 to 13 mm (1/4 to 1/2 in.). Scaling also may be caused by deicing salts, improper construction, freeze-thaw cycles and poor aggregate.

1.11. Divided Slab/Punchout

Slab is divided by cracks into four or more pieces due to overloading, or inadequate support, or both. If all pieces or cracks are contained within a corner break, the distress is categorized as a severe corner break.

Levels of Severity for Divided Slab

Severity of the Majority of Cracks	Number of Pieces in Cracked Slab		
	4 to 5	6 to 8	More than 8
L	L	L	M
M	L	M	H
H	M	H	H

For Punchouts, the distress is a localized area of the slab that is broken into pieces. The punchout can take many different shapes and forms, but it is usually defined by a crack and a joint. The distance between the joint and the crack or two closely spaced cracks is # 1.5 m (5 ft) wide. This distress is caused by heavy repeated loads, inadequate slab thickness, loss of foundation support, or a localized concrete construction deficiency, for example, honeycombing.

Levels of Severity for Punchouts

Severity of the Majority of Cracks	Number of Pieces		
	2 to 3	4 to 5	>5
L	L	L	M
M	L	M	H
H	M	H	H

Example Divided Slab

Example of Punchout

Corner spelling is the breakdown of the slab within approximately 0.5 m (1.5 ft) of the corner. A corner spall differs from a corner break in that the spall usually angles downward to intersect the joint, whereas a break extends vertically through the slab corner. Spalls less than 130 mm (5 in.) from the crack to the corner on both sides should not be counted.

Levels of Severity for Corner Spalling

Depth of Spall	Dimensions of Sides of Spall	
	130 x 130 mm to 300 x 300 mm (5 x 5 in.) to (12 x 12 in.)	300 x 300 mm (>12 x 12 in.)
<25 mm (1 in.)	L	L
>25 to 50 mm (1 to 2 in.)	L	M
>50 mm (2 in.)	M	H

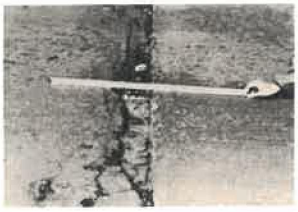
1.12. Joint/Corner Spalling

Joint spalling is the breakdown of the slab edges within 0.5 m (1.5 ft) of the joint. A joint spall usually does not extend vertically through the slab but intersects the joint at an angle.

Levels of Severity for Joint Spalling

Spall Pieces	Width of Spall	Length of Spall <0.5 m (1.5 ft)	Length of Spall >0.5 m (1.5 ft)
Tight – cannot be removed easily (maybe a few pieces missing.	<100 mm (4 in.)	L	L
	>100 mm	L	L
Loose – can be removed and some pieces are missing; if most or all pieces are missing, spall is shallow, less than 25 mm (1 in.).	<100 mm	L	M
	>100 mm	L	M
Missing – most or all pieces have been removed.	<100 mm	L	M
	>100 mm	M	H

Corner Spalling



Joint Spalling

1.13. Joint Seal Damage

Any condition that enables soil or rocks to accumulate in the joints or allows significant water infiltration. Accumulation of incompressible materials prevents the slab from expanding and may result in buckling, shattering, or spalling. A pliable joint filler bonded to the edges of the slabs protects the joints from material accumulation and prevents water from seeping down and softening the material.

Severity: would depend on:

F. Stripping of joint sealant
G. Extrusion of joint sealant
H. Weed growth
I. Hardening of the filler (oxidation)
J. Loss of bond to the slab edges
K. Lack or absence of sealant in the joint.

1.14. Settlement / Faulting

The difference in elevation across a joint. Faulting is counted only at joints. Faulting associated with cracks is not counted separately since it is incorporated into the severity level definitions of cracks.

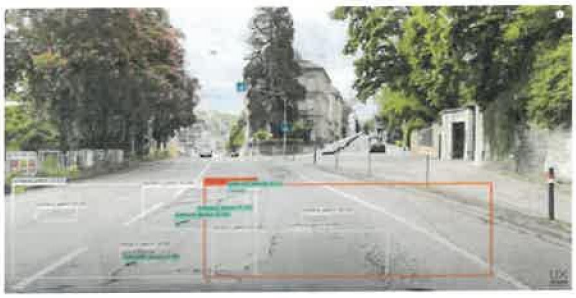
Joint Seal Damage - Example 1 | Joint Seal Damage - Example 2 | Faulting - Example 1 | Faulting - Example 2

1.15. Patches and Utility Cuts

A patch is an area of pavement that has been replaced with new material to repair the existing pavement. A small patch is considered a low severity defect when it contains a crack or any other distresses with all severities. When a large patch or a utility cut has no distress, it is considered as low severity patch and depending on the severity of the distresses that it has the patch would be in medium or high severity level.

SEMANTIC SEGMENTATION

Semantic segmentation, the method used by StreetScan, significantly enhances the accuracy and detail of distress detection and assessment, especially when combined with 360 panoramic imagery and LiDAR technology. Unlike traditional bounding boxes, which provide a basic outline of distress areas based on visible features, semantic segmentation classifies each pixel of an image, allowing for precise delineation of cracks, potholes, and other road distresses. This technique is especially effective for identifying narrow, low-contrast, or irregularly shaped damages that might be missed with bounding boxes. When paired with LiDAR, semantic segmentation is further enhanced by the addition of depth and 3D spatial information, enabling highly detailed measurements of distress features such as crack width, and severity. This comprehensive data set allows for much more accurate Pavement Condition Index (PCI) assessments, ensuring reliable and consistent evaluations of road conditions.



Labelling Method: Bounding Boxes

Labelling Method: Semantic Segmentation

Regular project updates

StreetScan recognizes the importance of delivering timely updates to our clients. In addition to virtual biweekly status meetings and updates, and to ensure transparency and real-time monitoring, **we offer a user-friendly dashboard, empowering the City to track project progress effortlessly.**

D. STREET SIGN AND PAVEMENT MARKING DATA COLLECTION

1) **Method and ability of our system to capture all existing street signs within the rights of way and provide GPS geotagging of assets.**

Assets such as traffic signs extracted from our LiDAR/Imagery collection provide a detailed inventory and condition assessment.

At the end of the project, StreetScan will deliver complete data via:

- **Geospatial Shapefile (.shp) or Geodatabase (.gdb)**

  Each sign will be represented as a point in the database, with the following attributes:

  - **Sign Categories**:
    Regulatory, Warning, Guide, School, Recreation, Information, General
  - **Sign Type**:
    Federal/State MUTCD designation or Custom designation for specialized signs
  - **Sign Location:**
    GPS (+/- 5 meters)
  - **Sign Condition** (based on daytime digital images):
    Good: No visible wear
    Fair: Minor wear (e.g., dent, scratch) without affecting readability
    Poor: Substantial or very impactful wear detected on post or sign (ex: hole, upturned, significant fading/chipping/cracking) that impacts the readability of sign messaging.

2) **Method of collection and ability to collect all existing pavement markings and provide GPS geotagging of the assets.**

Assets such as pavement markings extracted from our LiDAR/Imagery collection provide a detailed inventory and condition assessment.

At the end of the project, StreetScan will deliver complete data via:

- Geospatial shapefile (.shp) or geodatabase (.gdb)
  Category
  - Left Turn
  - Right Turn

- Crosswalk
- Lane Divider
- Shoulder
- Centerline

Location - GPS Location (+/- 5 meters)

Condition

- Assessment through review of daytime digital images
- Based on remaining visibility of marking
- Customer segmentation is used or default as intersection to intersection
- Rating

  "Good" No noticeable wear on paint

  "Fair" Wear on paint with moderate line visibility

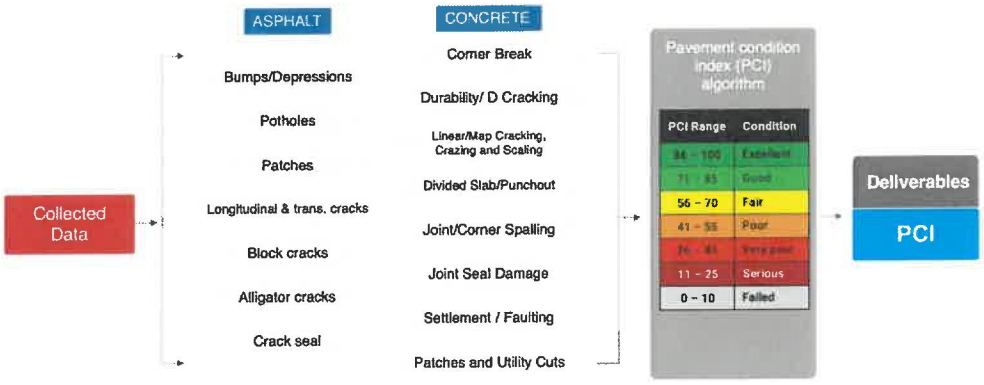
  "Critical" Substantial and impactful wear on paint with low level of marking visibility

E. DATA PROCESSING AND QA/QC

DATA PROCESSING

The collected data (TBs/day) is uploaded to the StreetScan server, where automated software processes the raw data. Using advanced processing algorithms, the raw data is converted into meaningful parameters representing different aspects of pavement condition. Several of our key indicators are fused to determine the StreetScan Pavement Condition Index (PCI) for each road segment. StreetScan's GIS specialists segment the pavement evaluation data based on our clients' historical street segmentation or from intersection to intersection in the absence of that data.

Roads Algorithm



QUALITY ANALYSIS AND CONTROL METHODS

Quality Control (QC) is an integrated part of our workflow and critical to the success of our projects. Identifying and rectifying data quality issues minimizes the time to complete the work and improves the deliverables. In our end-2-end service there are three QC phases.

Stage 1: Acquisition and Preparation of Client Road Data

To ensure the accuracy of the collection, StreetScan will review the City's GIS layer, and confirm with municipality the usability of the GIS layer provided.

Stage 2: Data Collection

Calibration and System Check

StreetScan will perform a full check of the system within one week of the scan. This involves camera calibration and cleaning, as well as a full driving/data-collection test.

Collection QA Checks

Daily Before Collection

Each day prior to collection, StreetScan's Data Collection Team Leader decides whether to collect the next day based on the weather forecast. **StreetScan does not collect when there is any precipitation.** On the morning of collection, the field technician will receive approval from the Data Collection Team Leader whether to proceed, based on road dryness.

During Collection

Daily, the field technician verifies that cameras are clean and sensor/image quality of the system is optimal. Throughout the day, the Data Collection Team Leader and the field technician are in contact to record any 'Issue Reported': issues that impede the collection process. Such issues include, but are not limited to, private roads and roads that are closed/blocked for any reason. Photos are taken for each 'Issue Reported.'

Following a day of collection, the Data Collection Team Leader will check that day's coverage. Extra checks are performed to make sure that roads with multiple passes and coverage were fully executed.

After Collection

Once all collection is completed, the Data Collection Team Leader will perform one final coverage check to ensure full network coverage before the field technician leaves the site.

Stage 3: Data Processing

Our project team follows a systematic data processing methodology, involving both automated algorithms and manual validation. Rigorous quality control measures are implemented at various stages of the data processing pipeline to identify and rectify errors promptly. Continuous training of our personnel ensure consistency in data evaluation.

Quality Control for Distress Detections

StreetScan's office receives collected data and processes it for distresses. Quality control (QC) technicians visually review 100% of detected distresses. Ten percent of the reviewed distresses are randomly selected for a secondary review by a Team Leader. If the accuracy of this secondary review is below 90%, a second 10% sample will be selected. If that accuracy is below 90%, a 30% sample of the remaining is selected. If that is still below 90%, all segments will go through manual verification.

Quality Control for PCI

Distress data is processed, producing the pavement condition index (PCI) value for each street segment. Once the PCI values have been generated, the Team Leader will review:

L. Street segments with a PCI of 100.
M. Segments with the ten lowest PCI values.

F. MAINTENANCE AND REHABILITATION PROGRAM DEVELOPMENT

1. StreetScan shall use an equivalent Pavement Condition Index (PCI) (0-100 scale) to provide recommended pavement maintenance treatment for each road segment, with estimated maintenance suggestion cost.

2. The City will provide a list of current maintenance repairs being used, or considered for use, and their associated cost. Factors such as type of road (e.g. residential versus arterial) and benefits to cost ratio are taken into consideration, and ultimately be used in the decision tree. The Budget tools will then use those figures to calculate the total anticipated cost.

3. The maintenance and repair data are provided as a GIS layer and in tabular format.

Example of the data as a GIS layer

Example of the data in tabular format

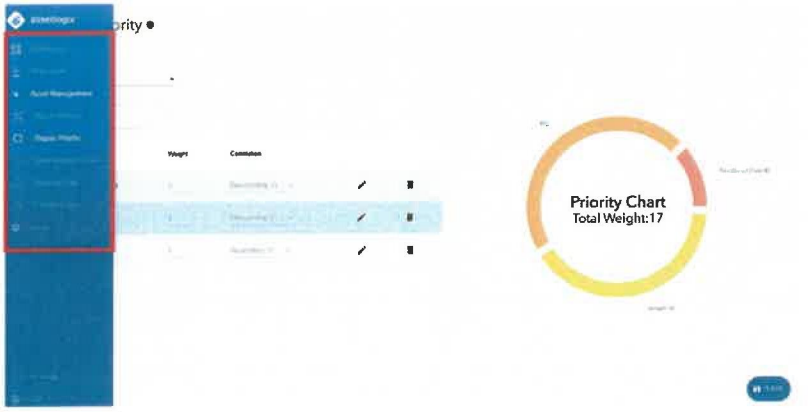
G. PAVEMENT REPAIR ANALYSIS

1. Our technology can address current and long-term pavement management goals so that the City can confirm optimal pavement management strategy based on the PCI value ranges, specific distress types and severity level. This is addressed through the decision tree and repair priority administrative features which are factored into the budgeting tools.

Example of how Streetlogix software addresses current and long-term pavement management goals based on the PCI value ranges and specific distress type and severity level:

2. StreetScan will work with the City to configure the software for the specific practice and procedures currently in use. The configuration will reflect Farmers Branch road repair and maintenance program's policies and practices. The subtasks will include:

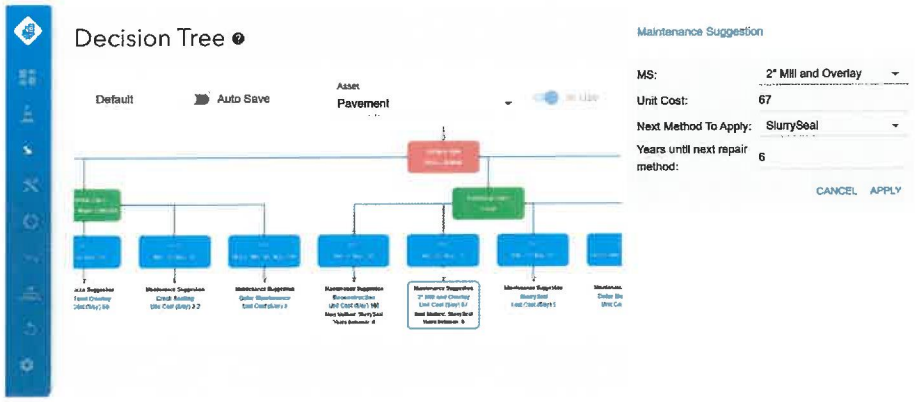
- Configure the system to reflect the rehabilitation alternatives and repair methods used by the City.
- Configure the system to reflect the current and local costs for the repair methods.
- Configure the system to reflect the preferred repair method and critical PCI thresholds.
- Acquire multi-year budget information from the technology and provide a draft multi-year rehabilitation program for review by City staff.
- Run the automated repair recommendation program and produce a list of repair/rehabilitation candidates.
- Work with City staff to review the rehabilitation program and modify analysis parameters iteratively to produce the final repair program required.
- Our Software can prioritize the top streets needing reconstruction or major rehabilitation.
- Configurable repair methods can be added to the system and used for analysis which are then incorporated into the decision tree allowing for several different budget scenario options.



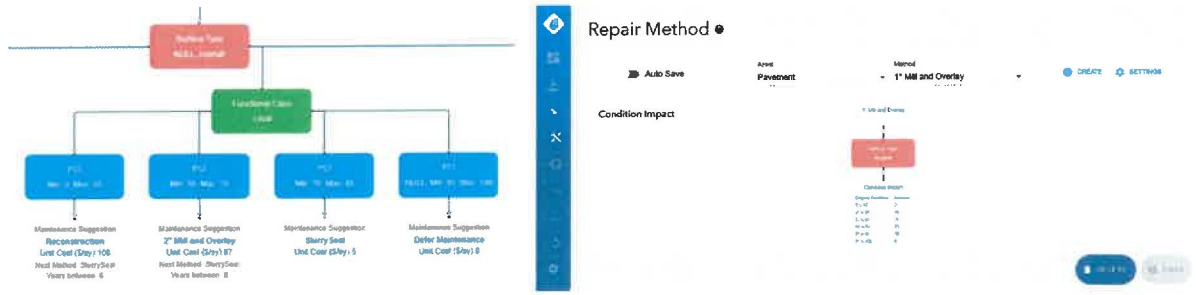
Administrator within the software have the ability to easily configure five administrative settings that will impact how the budgeting tools determine which segments to select for repair, which repairs, in what priority, on which deterioration curve, and at what price. For example, most municipalities have used PCI and functional class to prioritize their repairs. We are seeing more communities starting to integrate other variables like diversity and inclusion as factors to consider. Demographics, median income, areas around bus shelters, and others, further enhance the existing robust maintenance strategies being applied, allowing residents to see a greater return and more impactful decision-making

3. Example of how our asset management software reflects rehabilitation alternatives and repair methods used by the City:

4. Example of configuration within our system to reflect the current and local costs for the repair methods:



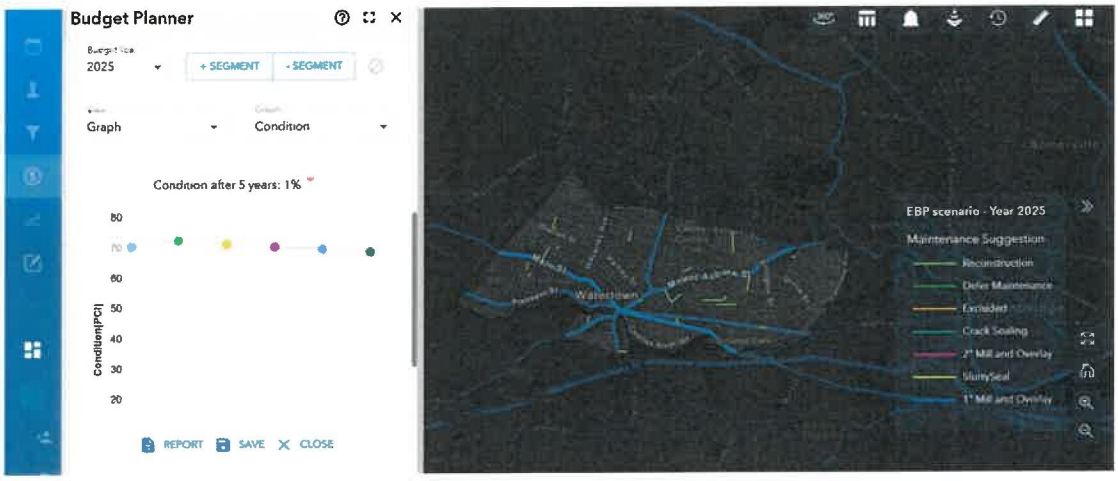
5. Example of configuration within our system to reflect the preferred repair method and critical PCI thresholds:



StreetScan
streetlogix

6. Streetlogix's implementation team will work with City Staff to set up the initial system build out, in addition to ensuring that city staff are fully trained in the application, allowing for future adjustments. Each configurable tool also has on demand videos to assist future configuration adjustments. Multiple decision trees can be made that allow the City to add maintenance strategies considered for use. The asset management module will allow cities to run hypothetical scenarios using those new, or yet to be acquired maintenance methods, providing a comparable report to help in the decision-making process.

7. Example of how Streetlogix prioritizes the top streets needing reconstruction or major rehabilitation.



H. ASSET MANAGEMENT SOFTWARE

1. Results can be provided in a GIS application – City Staff can access Streetlogix, our GIS-based asset management software, to view and analyze all collected survey data in addition to data from other sources to assist in decision making. This provides an easy-to-use tool to quickly review PCI results, distress data and images along with pavement history. Any historical data the City may have can be integrated for a more comprehensive look at the overall road network. All data is hosted in the cloud, allowing users to login from anywhere on any internet connected device to view the results.

2. Web-based – Streetlogix is a web-based software and the City will have easy access to its PCI data from anywhere via the internet.

3. Unlimited Licenses – The City will be able to grant access to this software to as many users as desired.

4. Zero-installation – The City will not be required to install any software. It is accessible using common web browsers such as Internet Explorer or Google Chrome.

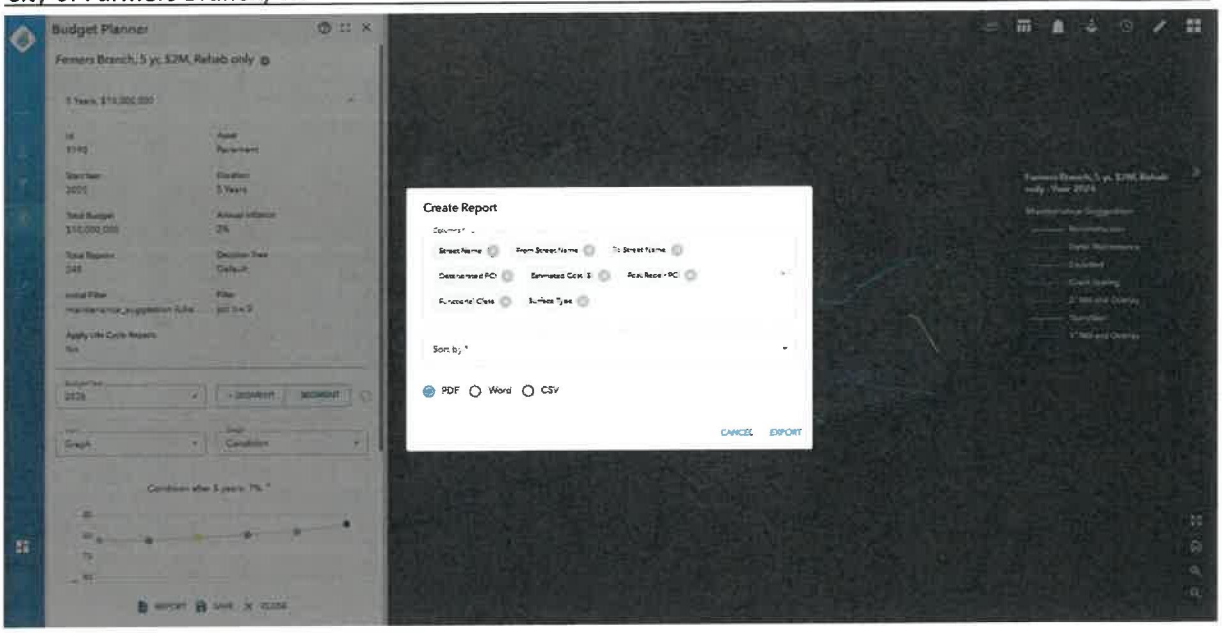
5. Visualization – The PCI data, including pavement imagery and distress data, can be visualized in the software's GIS environment.

For every 50 feet of the road, images of the pavement can be made available in Streetlogix (Optional: 360 Viewer). We have also integrated in Google Street View for an additional imagery source. Our software will also provide PCI on a per segment basis:

6. Data Exporting – Streetlogix also supports the ability to export data.

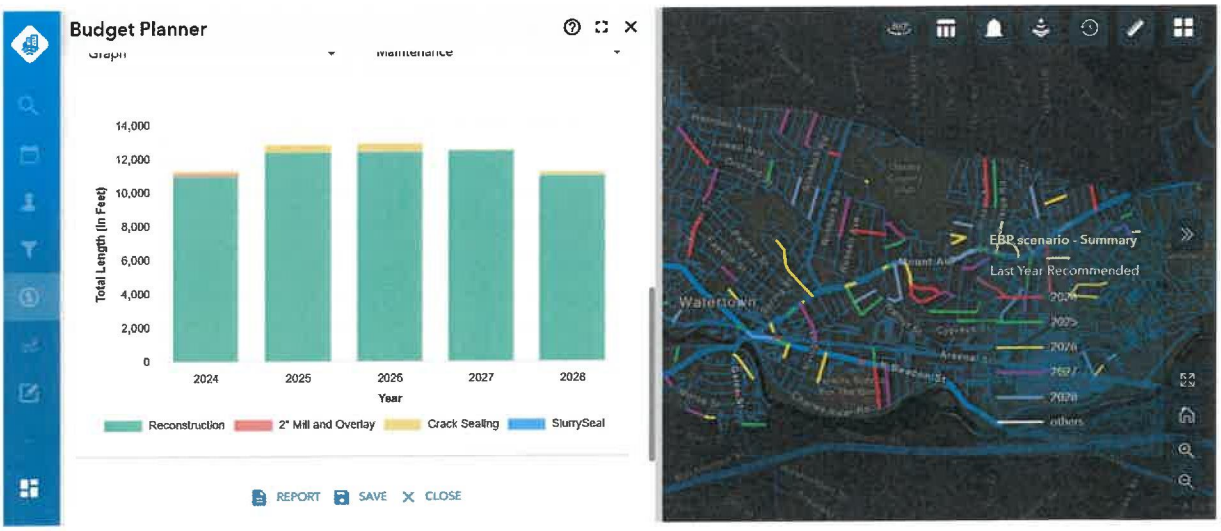
7. **Budget Analysis –** Users will be able to run different road management scenarios using different budgets, timeframes, and variables. The software will support the ability to download these scenarios in addition to adding them to the software as additional layers for further analysis. In the below example, we see a five year, $2,000,000/annual budget plan that has limited repairs exclusively to chip seal, slurry seal and one inch mill and overlay. The city will be able to run and save an unlimited number of budget scenarios. Each budget can be exported to PDF, Word, or CSV.

StreetScan
streetlogix

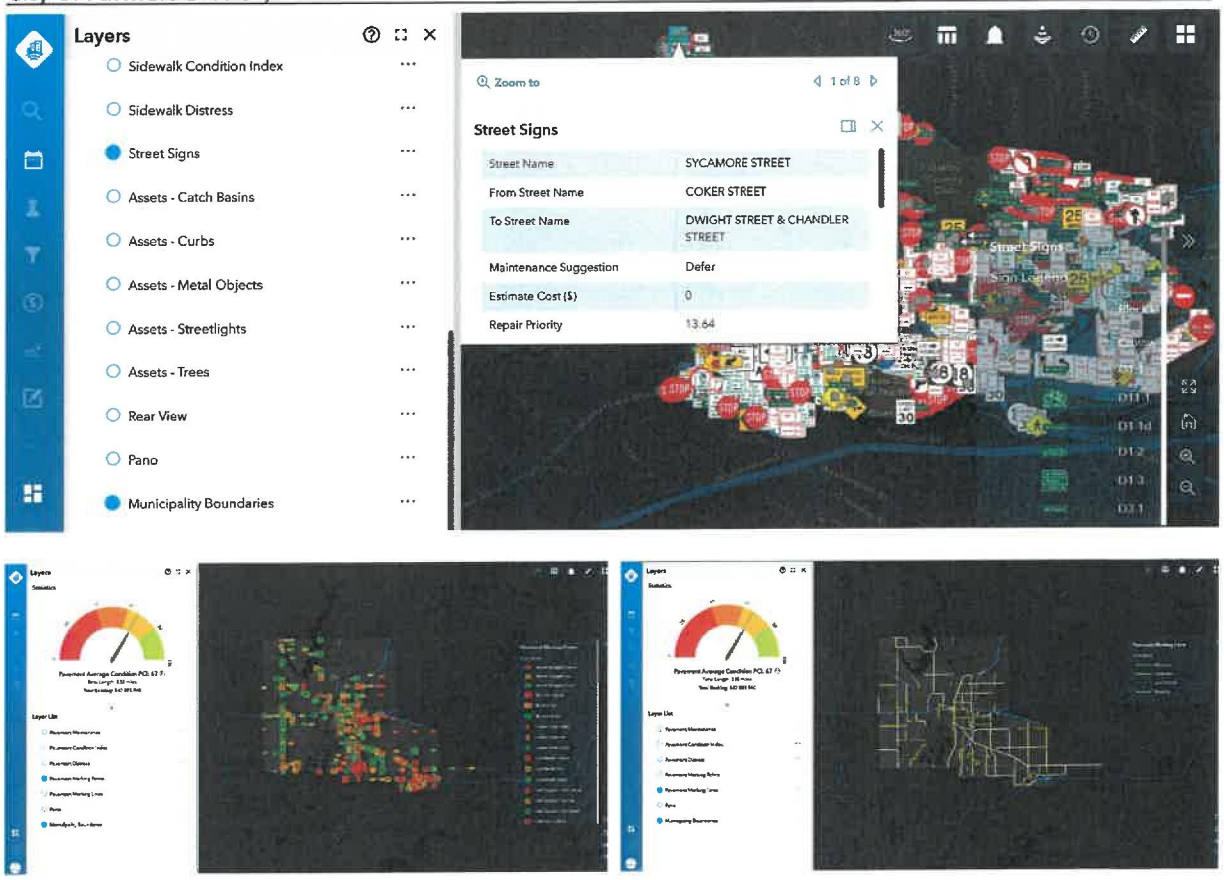


8. Prioritization – Our software has the capability to prioritize preservation and repair projects in the City or a specific area of the City based on PCI, configurable distress metrics, regional demographics, and available budget via our out-of-the-box solution.

Example of how our software can run automated repair recommendations and produce a list of repair/rehabilitation candidates:



9. Streetlogix supports the capability of adding and managing other assets the City might want to add, including but not limited to traffic signs and pavement markings, as shown in the example below.



I. DELIVERABLES

At the end of the project, StreetScan will provide complete data via geodatabase (Esri) including:

- StreetScan PCI ratings (0-100 scale) with locations and type of distresses.
- The following attributes:
  - o Municipality's Street Segment ID numbering system (provided by the City)
  - o Cross reference Street Name, From and To designation (provided by the City)
  - o Functional Classification (if not provided, we use default value)
  - o Surface Type
  - o Length, Width, Area (default value for width if not provided by City)
  - o Georeferenced imagery
  - o Georeferenced distresses

<u>Additional Deliverables included with Streetlogix:</u>

- Streetlogix Asset Management Software, with access to all Streetlogix functionalities:
  - o Recommended Repair
  - o Cost Estimate to Repair
  - o Cumulative Cost Estimate to Repair
  - o Repair Priority (based on approved criteria)

  - o Configurable Charts and Graphs
  - o Budget Planner and Estimator
- Storymap summarizing the City's Pavement Network Condition and Findings
- Software Training: StreetScan has developed a comprehensive on-boarding training plan that includes basic and functional training as well as configuration and budgeting training for up to six people per session.
- Software & Technical Support: With the annual software license, customers gain access to ongoing technical support. If at any time staff has questions about the use of the software system, they can contact our support team for assistance. Streetlogix help requests are supported by our staff from 7:30 AM to 6:30 PM CST. Streetlogix also has a 24-hour online support ticket portal.

3 PROJECT SCHEDULE

Task	Duration	Start Date	End Date
Project Set-up GIS Requirements Review & Layer Approval	10d	12/20/24	01/08/25
Project Kick-Off Meeting	1d	01/13/25	01/13/25
Mobilization	1d	01/14/25	01/17/25
Road Data Collection	6d	01/20/25	01/27/25
Data Transfer	1d	01/28/25	01/28/25
Data Processing/QA-QC	60d	01/29/25	04/23/25
GIS Publishing	1d	04/24/25	04/24/25
Software Implementation	6d	05/02/25	05/02/25
Delivery Meeting	1d	05/06/25	05/06/25
Software Training*			

Business days/ Tentative timeline

Additional considerations:

- **Data collection timing to be discussed upon contract award.** Date of initiation will depend on receipt and approval of the City's GIS data and weather permitting. StreetScan does not collect when there is any precipitation nor when street surface is obstructed by leaves. *Data Processing times can vary depending on the number and size of projects in queue. Data Processing is not always performed on consecutive days. The above schedule is an estimate and can be adjusted due to unforeseen circumstances.*
- City's GIS file must be received, reviewed and approved by January 8, 2025, to complete the project as early as possible.
- Before starting the project, **StreetScan will have a kick-off meeting with Farmers Branch** to go over the project timelines and deliverables. StreetScan will adjust this timeline based on the City's deadlines and preferences where possible.
- StreetScan will conduct virtual asset management software training: approx. 4 sessions of 1.5 hours duration. All can be recorded for customer reference. Streetlogix Customer Success Team checks in with customer on regular intervals throughout the life of contract agreement.
- All dates mentioned above are estimates and based on customer timeliness of contract commitments.

4 PRICING OVERVIEW

DATA COLLECTION (STREETSCAN)

PAVEMENT MANAGEMENT				
	SERVICES INCLUDED	**CENTERLINE MILES**	**$/CL**	**TOTAL**
StreetScan	ScanCar Data Collection	207 mi	$140	$28,980
	Data Processing			
	GIS Coordination Fee - Fixed			$1,500
Mobilization and Setup Cost (Project must be collected January-March 2025)				$4,500
TOTAL				$34,980

PRODUCT	ASSETS	UNIT	QTY (EST.)	PRICE ($/UNIT)	PRICE
Assets Extracted from Imagery & Additional Field Measurements					
Traffic Signs	All Signs + 4 Attributes	Sign	2,500	$3	$7,500
Pavement Markings	All Markings + 3 Attributes	CL-M	207	$45	$9,315

- All assets will be uploaded as individual GIS layers within Streetlogix
- All quantities are estimated. Final billing is based on actual quantities collected.

SOFTWARE (STREETLOGIX)

STREETLOGIX SOFTWARE MODULE PRICING					
streetlogix MODULES	**POPULATION**	**ANNUAL LICENSE**	**ANNUAL DATA**	**IMPLEMENTATION FEE**	**TOTALS**
ASSET MANAGEMENT	36,000	$7,500	$1,000	$6,000	$14,500
360° IMAGERY VIEWER (OPTIONAL)		$1,725	$275	NA	$2,000
UNLIMITED USERS					

OPTIONAL SERVICES AND ASSETS

One of our unique advantages is the ability for our clients to extract, assess and obtain actionable data from other Municipal assets utilizing the same data collected for the Pavement Management Survey. Below is a list of additional assets we can process from the collected data. This is set up as an a-la-carte menu so you can pick and choose the assets to meet your asset management needs.

PRODUCT	ASSETS	UNIT	QTY (EST.)	PRICE ($/UNIT)	PRICE
Assets Extracted from Imagery & Additional Field Measurements					
Catch Basins	Location	Catch basins	4,140	$2	$8,280
Manholes	Location	Manholes	6,210	$2	$12,420
Trees	Trees – Curb to Sidewalk	Trees	4,140	$3	$12,420
Roads GIS Database	Road Inventory	CL-M	207	$30	$6,210
Curb GIS Database	Curb Inventory	CL-M	207	$30	$6,210
Other Right of Way Assets	Inquire with our Team for: Traffic Signals, Fire Hydrants, Street Lights etc.				

- All assets will be uploaded as individual GIS layers within Streetlogix.
- All quantities are estimated. Final billing is based on actual quantities collected.
- All prices quoted are good for 180 days.

TOTALSTREETS

It's a struggle to keep up with maintenance and repairs when upfront costs are prohibitive and often leave you with short-term fixes rather than a long-term strategy. With **TotalStreets**, your city can benefit from a cost-effective, end-to-end pavement management solution while spreading the cost in equal payments over three years.

How much does it cost?

SERVICE	YEAR 1	YEAR 2	YEAR 3	TOTAL
StreetScan Pavement Management Service	$34,980	$0	$0	$34,980
Streetlogix Asset Management	$14,500	$8,500	$8,500	$31,500
360 Imagery Viewer (optional)	$2,000	$2,000	$2,000	$6,000
Traffic Signs	$7,500	$0	$0	$7,500
Pavement Markings	$9,315	$0	$0	$9,315
Total Cost	**$68,295**	**$10,500**	**$10,500**	**Lump Sum: $89,295**
With Optional TotalStreets Subscription:				
TotalStreets Solution annual payments	**$29,765**	**$29,765**	**$29,765**	**$89,295**

**Other StreetScan and Streetlogix assets and modules can be added upon request. Contact us for information and pricing.*

5. PROPOSER AFFIRMATION CLAUSES

StreetScan affirms all the following, without limitation:

A. The Proposer has not conferred or offered to confer, either directly or indirectly, any benefit whatsoever on a public servant in connection with the submitted Proposal or the subject matter of the Proposal;

B. Bidder/proposer affirms that no affiliation exist between owners, officers, administrators and employees of the bidder/proposer and The City which could be construed as a conflict of interest.

C. The Proposer, individually or acting by and through its officers, principals, employees, contractors, subcontractors, agents, or personnel, has not communicated any of the contents of the Proposal to its competitors or any other person or entity engaged in such line of business;

D. The Proposer did not participate in or receive compensation for preparation of the RFP;

E. The Proposer shall defend, indemnify, and hold harmless the City of Farmers Branch, all of its officers, agents and employees from and against all claims, actions, suits, demands, proceedings costs, damages, and liabilities, arising out of, connected with, or resulting from any intentional or negligent acts or omissions of the Proposer or any agent, employee, subcontractor, or supplier of contractor in the execution or performance of the resulting contract;

F. The Proposer acknowledges and agrees to all terms and conditions within this RFP.

G. The Proposer acknowledges and agrees that the City reserves the right to terminate the contract immediately in the event the contractor fails to:

1) Provide upon request by the City documentation that employees engaged to perform work pursuant to the contract with the City are legally authorized to work in the United States, or

2) Comply with Federal immigration laws.

E. The Proposer acknowledges and agrees that the City may not enter a contract with a company for goods or services unless the contract contains a written verification from the company that: (i) does not boycott:

1) Energy Companies and agrees that during the term of this Agreement will not Boycott Energy Companies as that term is defined in Texas Government Code Section 809.001, as amended;

2) It does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association as those terms are defined in Texas Government

Code Section 2274.001, as amended; and (ii) will not discriminate during the term of this Agreement against a firearm entity or firearm trade association

This section does not apply if Contractor is a sole proprietor, a non-profit entity, or a governmental entity; and only applies if: (i) Contractor has ten (10) or more fulltime employees and (ii) this Agreement has a value of $100,000.00 or more to be paid under the terms of this Agreement.

APPENDIX A

ADDED VALUE:

In addition to providing PCI scores, our comprehensive services can also include:

Assessment and/or Inventory			Software and Services
Pavement Marking	ADA Ramps	Manholes	Streetlogix Work Order Management Module
Roads GIS	Sidewalk Assessment	Catch Basins	Streetlogix Citizen Engagement Module
Sidewalk GIS	Alleys	Other ROW Assets Priced upon request	Management Section Editor
Curb GIS	Trees		Enhanced Professional Services/ Pavement Consulting Services

**Additional charges apply.*

FULL RESUMES OF THE PROJECT TEAM

GIS REQUIREMENTS

Chris Hahn – Project Manager

Director of Customer Success

Relevant experience to the project:
Over 16 years' experience in project management and progressive experience in the software industry, focusing on municipal enterprise level solutions. Recent projects in the United States include Pinellas County, Florida, Pierce County, Washington, and Carmel, Indiana.

Chris Hahn will provide management leadership for the pavement condition assessment and asset management software implementation if selected. As the primary point of client contact, Chris will coordinate the project from the kickoff meeting to project delivery. He works closely with our customers throughout their implementation of Streetlogix and on-going customer care, helping to ensure that clients reach their goals for integrating asset management technologies to enhance their operations.

Chris possesses over 16 years of experience in project management and progressive experience in the software industry, focusing on municipal enterprise level solutions. Chris is primarily responsible for streamlining business operations, using his vast experience to ensure that consistent delivery and client satisfaction are the cornerstones of our customer's experience. Using his business analyst background, Chris is well positioned to understand the needs of customers and their goals to help tailor solutions that optimize their operations and workflows.

Key Responsibilities:

- Coordinate the technical team and operations team
- Schedule a kickoff meeting with the client team to clarify the specific requirements of each project
- Gather required existing GIS inventory and condition data
- Confirm project scope and objectives
- Provide geotechnical support for target route creation
- Ensure resource availability and allocation
- Develop a detailed project plan to monitor and track progress
- Manage changes to the project scope, project schedule, and project costs.
- Conduct Project Delivery Meeting communicating road rating results, maintenance and repair suggestions, and further data analysis of the road network.

StreetScan
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Education:

Sauder School of Business - 2014

Capilano University, North Vancouver, BC – 2014

Experience:

Director of Customer Success - StreetScan/StreetLogix

March 2022 – Present

Project Manager/Professional Services Consultant - CentralSquare Technologies (Municipal Tax Software)

July 2015 – March 2022

Project Manager/Professional Services Consultant - FDM Software

July 2013 – July 2015

Professional Services – Software Implementer - ACTIVE Network

October 2011 – July 2013

Field Operations Specialist – Opentable, INC.

February 2008 – October 2011

Camera Assistant - Film Industry, Global

January 1999 – August 2007

Yash Channe

Project Coordinator

Yash oversees our municipal client projects with a sharp focus on customer-centric delivery and operational excellence. Through meticulous project planning, workflow optimization, and cross-functional team coordination, he ensures that our projects consistently meet clarity, compliance, and efficiency goals. Yash's commitment to transparency, milestone-based tracking, and effective stakeholder communication drives successful, timely project outcomes. Recent projects in the United States include Kilgore, Texas, Pierce County, Washington, and Loveland, Colorado.

As a results-oriented project manager, Yash specializes in customer-focused initiatives for municipal clients. He drives projects with a 20% improvement in contract clarity and a 30% increase in task efficiency. Yash optimizes resource allocation and facilitates data-driven assessments, leading to a reduction in invoicing errors and strengthened client trust. By standardizing project documentation, he has cut setup time and consistently maintains high-quality outputs. His coordination of cross-functional teams and a milestone-based tracking system has improved project delivery times by 25% while enhancing transparency and accountability. Yash's proactive analysis of historical data supports accurate resource forecasting, and his stakeholder meetings ensure project alignment and minimize communication gaps.

Key Responsibilities:

- Manages product lifecycles
- Facilitates data-driven assessments for client requirements and invoicing
- Leads regular project update meetings with stakeholders
- Develops and maintains standardized project templates and reports to streamline project setup, track milestones, and ensure transparency in client communications.

StreetScan
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Education:

Concordia University | Master of Engineering in Industrial Engineering
2022-2024

MIT World Peace University | Bachelor of Technology in Mechanical Engineering
2017 - 2021

Experience:

Project Coordinator
StreetScan/Streetlogix | June 2024 - Present

Assistant Department Manager
Provigo LeMarche | May 2023 – June 2024

Junior Engineer MEP
Scon Projects Private Limited | August 2021 – July 2022

Continuous Improvement Intern
J.K Files India Private Limited | November 2020 – February 2021

Ahmad Hassan

Director of Operations

Relevant experience to the project:
General operation management for 335,000+ miles of data collection of roads, sidewalks and trails totaling 640,000+ GIS Point of Interest (POI) in 16 countries. Recent projects in the United States include Terrell, Texas, Loveland, Colorado, and Pierce County, Washington.

Ahmad graduated from The Lebanese American University with an MBA in Business Management as well as a BS in Computer Science and gathered over 20 years of experience in the world of IT, most of which was in the GIS field. He co-founded Orion Middle East, a leader in the GIS mapping industry working throughout the Middle East region and consulted for several IT and GIS projects. His last venture was creating iCare, which is a management system designed for schools and daycares and is currently in use in 15 countries around the world. At StreetScan, Ahmad is responsible for overseeing our North American operations and ensuring our customers' needs are met.

Key Responsibilities:

- Creates and oversees employee evaluation metrics and methods
- Implementing, reviewing, and modifying company policies and procedures
- Ensuring company operations meet financial goals and objectives
- Confirm the scope and objectives of various projects
- Provide geotechnical support for target route creation
- Ensure resource availability and allocation
- Develop a detailed project plan to monitor and track progress
- Manage changes to the project scope, project schedule, and project costs

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Education:
Lebanese American University, MBA – 1997

Beirut University College, Lebanon
BS. Business Management – *1995*

Beirut University College, Lebanon
BS. Computer Science – 1993

Experience:

Director of Operations –
StreetScan

March 2022 - Present

Sales Manager –
Chatr Mobile

2020 – 2021

General Manager – AppWare
AppWare s.a.r.l.
AppWare DWC FZC

2013 - 2019

General Manager –
ORION-Middle East

2007 – 2019

Certifications:
The Fundamentals of Digital Marketing – Google, 2020

Yubo Zhao

Senior Engineering Manager

Relevant experience to the project:
Yubo is one of the original engineers that researched and developed StreetScan's service. Over 10 years' experience in developing hardware and software tools used by our Operations Team. Provides technical support for all our projects.
Recent projects in the United States include Pinellas County, Florida, Pierce County, Washington, and Carmel, Indiana.

Yubo is one of the original engineers that researched and developed StreetScan's service. He joined StreetScan as a Research and Development Engineer and was instrumental in the initial setup of the firm. He designed hardware for the original vehicle-mounted sensor system for road inspections, as well as algorithms to detect road contours and distresses from the system's collected sensor data. Additionally, he developed algorithms to calculate StreetScan's pavement condition index (PCI). Yubo also trained, managed, and provided tech support to all StreetScan Inspection Crews. He brings over 10 years' experience and has advanced to become StreetScan's Senior Engineering Manager, responsible for developing hardware and software tools used by the Operations Team for surveying and processing the data. Yubo also supervises the technical support provided to our teams. He received his Ph.D. in Interdisciplinary Engineering in 2015 and his M.S. in Mechanical and Structural Engineering in 2013 from Northeastern University in Boston, MA, and is the author of numerous technical reports.

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Education:

Northeastern University,
PhD of Interdisciplinary Engineering – *2015*

Northeastern University,
Master of Mechanical and Industrial Engineering – *2013*

Dalian University of Technology,
Bachelor of Mechanical Design & Manufacturing and Automation – *2008*

San Jose State University,
Studies in American Language – *2009*

Experience:

Senior Engineering Manager – StreetScan

August 2022 - Present

Senior Research & Development Engineer - StreetScan

February 2020 – August 2022

Research & Development Engineer – StreetScan

September 2015 – August 2020

Certifications:

Certificate of National Computer Rank Examination (Turbo C).

Tamer Mol

Data Collection Team Leader

Tamer oversees our data collection operations. With a keen focus on effective leadership, coaching, and motivation, he guides our team of Field Technicians, ensuring they meet delivery and quality objectives consistently. Recent projects in the United States include Loveland, Colorado, Monroe, Georgia, and Westfield, Massachusetts.

With over 15 years of diverse experience and education, Tamer possesses a comprehensive skill set spanning various sectors, including natural resources, technical fields, and outdoor environments. His expertise includes proficiency in Geographic Information Systems, Surveying and Drafting, as well as Project Management, among other key areas. Tamer holds a bachelor's degree in Geographic Information Systems from the Southern Alberta Institute of Technology. Additionally, he has pursued further specialization in GIS, Mapping & Spatial Analysis from the University of Toronto, as well as an Engineering Project Management specialization from Rice University. Furthermore, Tamer has earned a Certificate in Surveying and Spatial Information Services from Central Institute of Technology, and a Diploma in Management from Polytechnic West.

Key Responsibilities:

- Overseeing and facilitating GIS data collection operations in Canada and USA.
- Overseeing usage practices
- Managing data quality

StreetScan
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Education:

Geographic Information Systems – Southern Alberta Institute of Technology | Bachelor
2022-2024

GIS, Mapping & Spatial Analysis – University of Toronto | Specialization
2022

Engineering Project Management – Rice University | Specialization
2022

Surveying and Spatial Information Services –
Central Institute of Technology | Certificate
2012-2013

Management –
Polytechnic West | Diploma
2011-2012

Experience:

Data Collection Team Leader
StreetScan | January 2024 – Present

Survey Party Chief
Longhorn Geomatics | July 2022 – Dec 2022

Survey Assistant (Snr.)
Challenger Geomatics | Oct 2021 – July 2022

Charmaine Holloway

Senior GIS Specialist

Relevant experience to the project:
Charmaine managed operations for 160+ local governments including 21,000+ ramps, 3,000+ miles of sidewalk, 18,000+ centerline miles of pavement and 140,000 GIS Point of Interest (POI) projects.
Recent projects in the United States include Terrell, Texas, New Bedford, Massachusetts, and Carmel, Indiana.

Charmaine leads our GIS team, which handles all data that comes to StreetScan; from preparing client data for collection, ensuring that the data collected is properly geo referenced for full coverage, and analysis of the collected data for asset acquisition. She originally joined StreetScan as a QC Technician and quickly became QC Supervisor, where she led, trained, and coached a team of specialists performing quality control on extracted features and assets to ensure accuracy. Charmaine has over 10 years' experience in the data collection field and has worked and volunteered for many organizations and universities collecting scientific data, including Environment Canada, the Ontario Ministry of Natural Resources and Forestry, and Esri. She holds a Science Degree in Biology from Memorial University in Newfoundland and has completed the GIS Application Specialist Program from Sir Sanford Fleming College.

Key Responsibilities:

- Assists with data acquisition
- Manages a small team of GIS professionals
- Quality Control of many different types of GIS data
- Assists clients with ensuring their GIS data is top-notch
- Assists with the finalization of results

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Education:

Sir Sanford Fleming College,
Geographic Information Systems Applications Specialist – *2019*

Memorial University of Newfoundland,
BS, Biology – *2008*

Experience:

Senior GIS Specialist – StreetScan

March 2022 - Present

Operations Manager – StreetScan

September 2020 – March 2022

Data Processing Team Leader – StreetScan

October 2019 – August 2020

Rayyan Naaman

Data Processing Team Leader

Relevant experience to the project:

Quality control of roadway geospatial data gathered by data collection teams. Recent projects in the United States include Terrell, Texas, New Bedford, Massachusetts, and Pierce County, Washington.

As Data Processing Team Leader, Rayyan performs quality control of roadway geospatial data gathered by data collection teams. He evaluates the accuracy and quality of derived geospatial road information according to the predefined standards and guidelines. Rayyan works closely with the engineering team to provide technical and general reports for project supervisors about different troubleshooting spatial data issues.

His professional journey includes various roles at StreetScan: he originally joined as QC Technician, working his way up to Supervisor and ultimately Data Processing Team Leader. With strong IT skills, Rayyan excels in presenting geographic data in an easy-to-understand manner using analytical and problem-solving skills. He holds a Master's degree in Innovation Management from the École de technologie supérieure in Montréal, Canada, as well as a Master's degree in Computer Communication Engineering from the Arts, Science and Technology University in Lebanon.

Key Responsibilities:

- Managing data quality
- Developing technical standards and procedures for system maintenance and operation
- Oversee usage practices

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Education:

ÉCOLE DE TECHNOLOGIE SUPÉRIEURE (ETS) | Montreal
Master's Degree, Innovation Management – *2022*

Arts, Sciences and Technology University | Lebanon
Master's Degree, Computer Communication Engineering - *2019*

Arts, Sciences and Technology University | Lebanon
Bachelor's Degree, Computer Communication Engineering – *2015*

Experience:

QA Supervisor, IT Services – StreetScan

April 2023 – Present

Visual Quality Control Technician StreetScan

November 2021 – April 2023

Optimizer for Huawei – Irsal, Telecom Solution Providers

2018

IT Support, System Administrator Joesons Holding (JOSONS) - Trading

2015 - 2017

StreetScan

GIS Data Requirements

We are excited to work with you on this project!

In order for us to start preparing for scanning and processing your streets and sidewalks, we need to have your GIS data.

Why it is needed

- StreetScan relies on the provided GIS data to determine which roads and sidewalks need to be scanned and which ones to avoid.
- StreetScan relies on the GIS data provided to create efficient collection routes for our field crew.
- StreetScan will deliver pavement or sidewalk condition results according to the exact segmentation that exists within the provided GIS data unless instructed otherwise prior to the project commencing.

What we are looking for

- GIS data in the form of a shapefile or a feature class within a Geodatabase (preferred).
- This file will ideally only contain surface treated roads that are not privately owned.
- This file will only contain what is wished to be scanned.
- This data cannot contain overlapping or Multipart lines.
- This data will have a unique ID that shall be maintained by both parties throughout the project. For future rescans, this unique ID is required if the historic data needs to be maintained or linked.
- Lines will ideally be greater than 15ft or 5m.
- For best results, segmentation should be intersection to intersection.
- It will also contain key fields (listed below) that will be useful for prioritizing repairs and estimating repair costs. The ones marked with (*) are the most important.

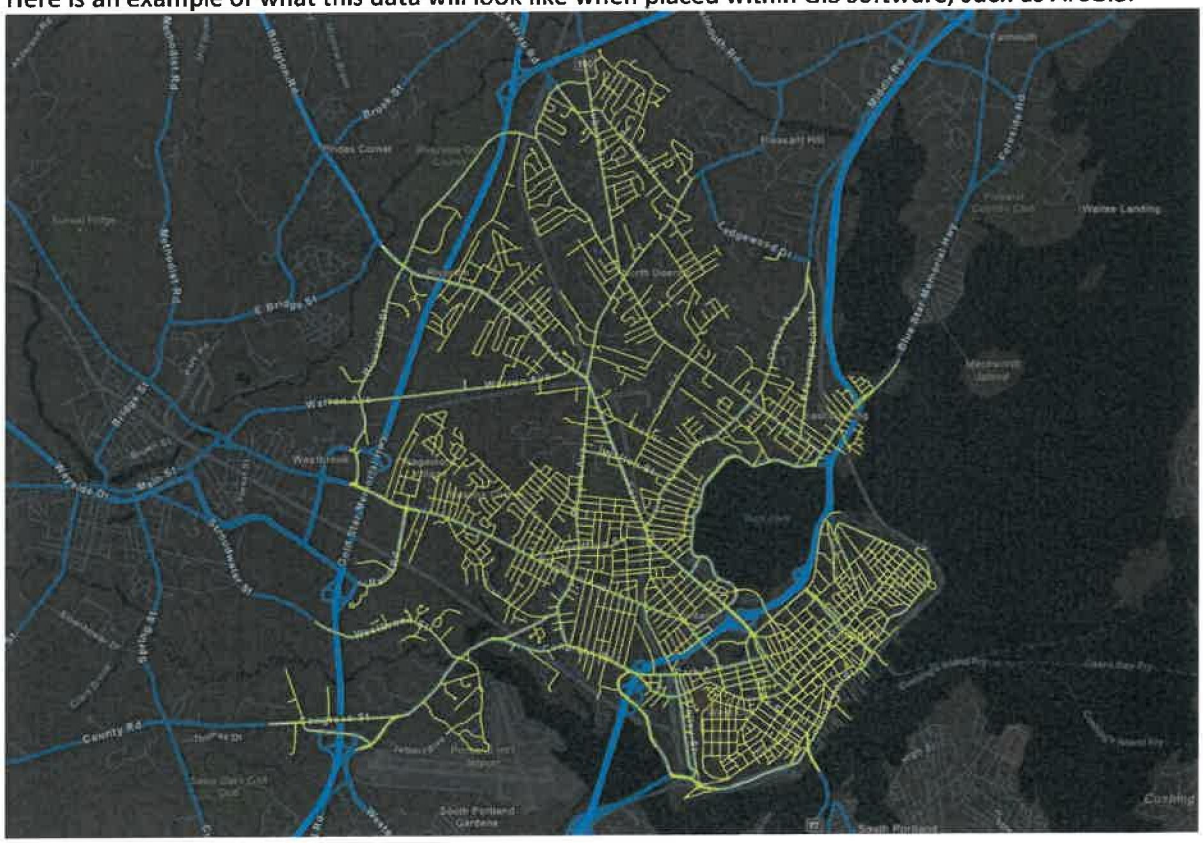
1. *Street name
2. *Surface type or material (For example: dirt, gravel, asphalt, surface treated, concrete)
3. *Functional class (For example: local, collector, arterial)
4. Jurisdiction (For example: private, public)
5. Number of lanes
6. Street width
7. TO and FROM street names
8. Construction Year (for performance curves)
9. AADT data (for performance curves)

Kindly note that sending us the data according to the above specs in a timely manner would help us complete and deliver your project quickly. Our GIS department are ready to help your team prepare or edit the data, if needed, at an additional charge.

Here is an example of what a shapefile may look like as a file:

Name	Date modified	Type	Size
Pavement_Evaluation_loc.cpg	6/3/2020 4:34 PM	CPG File	1 KB
Pavement_Evaluation_loc.dbf	6/3/2020 4:34 PM	DBF File	2,549 KB
Pavement_Evaluation_loc.prj	6/3/2020 4:34 PM	PRJ File	1 KB
Pavement_Evaluation_loc.sbn	6/3/2020 4:34 PM	SBN File	15 KB
Pavement_Evaluation_loc.sbx	6/3/2020 4:34 PM	SBX File	2 KB
Pavement_Evaluation_loc.shp	6/3/2020 4:34 PM	SHP File	271 KB
Pavement_Evaluation_loc.shp.xml	6/3/2020 4:34 PM	XML Document	14 KB
Pavement_Evaluation_loc.shx	6/3/2020 4:34 PM	SHX File	12 KB

Here is an example of what this data will look like when placed within GIS software, such as ArcGIS.



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