CITY OF NOVI CITY COUNCIL
FEBRUARY 24, 2025

SUBJECT: Approval to award services to ICC-IMS through the TXShare cooperative purchasing program, in the amount of $68,097 to perform a sidewalk condition survey of the City's sidewalks.

SUBMITTING DEPARTMENT: Department of Public Works, Engineering Division

KEY HIGHLIGHTS:

- Sidewalk condition data will be collected for approximately 220 miles of City concrete sidewalk along major and local roads.
- City engineering consultant, AECOM, recommends utilizing ICC-IMS's services as they were unable to find other comparable companies offering these services.

	FY 2024/25
EXPENDITURE REQUIRED	**$ 68,097**
BUDGET **Municipal Street Fund** **204-446.00-975.024**	**$ 68,097**
APPROPRIATION REQUIRED	**$ 0**
FUND BALANCE IMPACT	**$ 0**

BACKGROUND INFORMATION:

Over the last five years, City staff have been researching and developing a neighborhood sidewalk repair program. A pilot program was completed in Meadowbrook Glens in 2022, followed by a second program in 2024 that repaired sidewalks in five subdivisions (Chase Farms, Willowbrook Farms, Bristol Corners, Yerkes Manor, Westminster Village). For the 2022 and 2024 programs, the City's engineering consultants walked each sidewalk and manually measured deflections and noted

other deterioration. While this technique is sufficient, it is time-consuming and involves some human error.

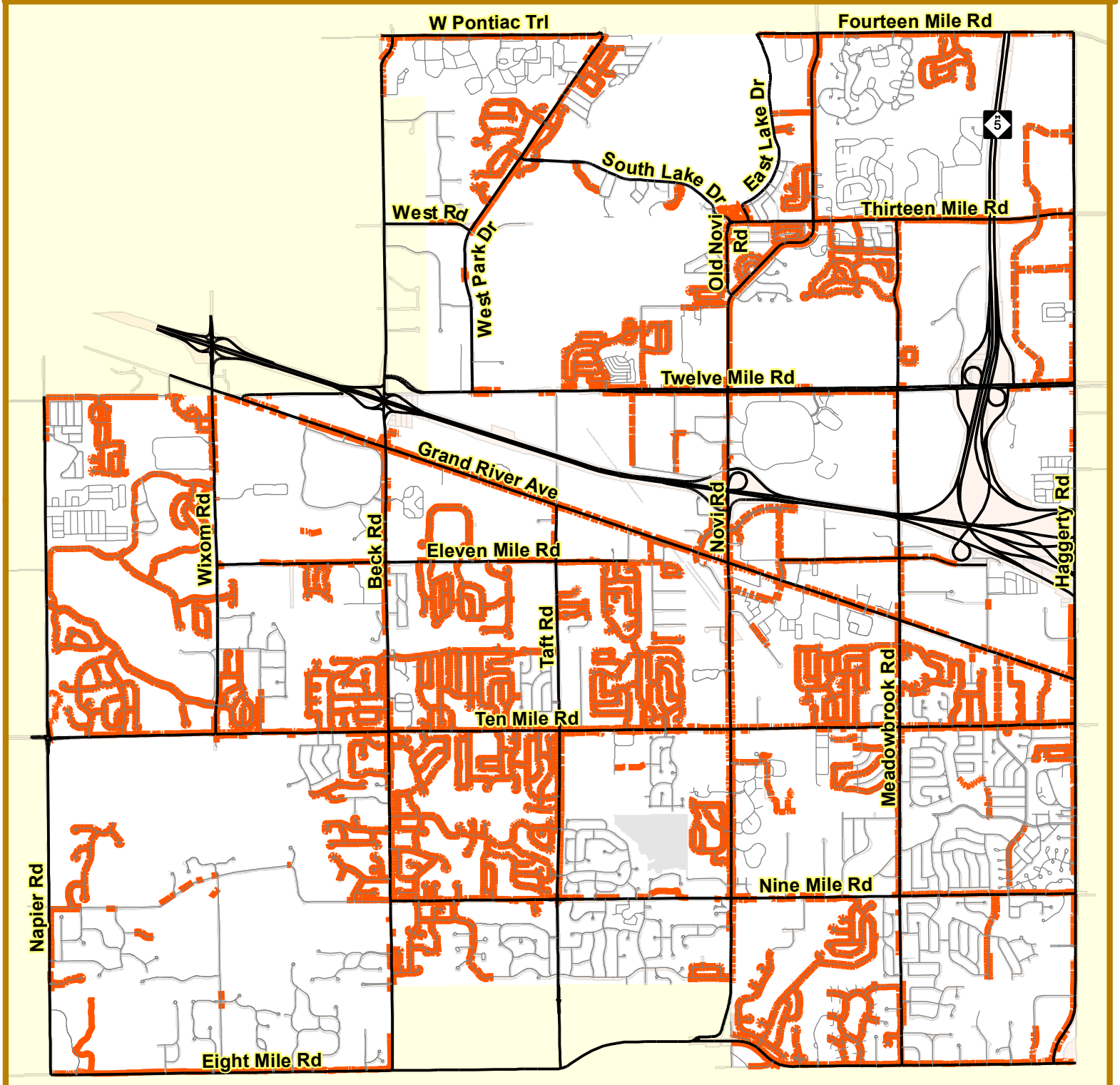
For the next phase of the neighborhood sidewalk repair program, staff are proposing a multi-year program that will divide the city into districts and will address neighborhood sidewalk repairs in at least one district per year. Having sidewalk condition data for all city sidewalks prior to planning the multi-year program would be ideal.

Staff recently became aware of a company that provides sidewalk condition surveys. The company, International Cybernetics and Infrastructure Management Services (ICC-IMS), uses a golf cart-like vehicle equipped with sensors to accurately measure deflections and gaps in the sidewalk joints. Additionally, the data can be used to quantify the type, severity, and quantity of surface distresses. Sidewalk imagery is also collected and made available for review. All the data collected can be integrated into the City's existing GIS system. The City will have a 90-day free trial and one year paid (15 months) to use ICC-IMS's online data visualization platform, after which an annual fee would be applied to continue use of the platform ($2,262.00/year).

Staff obtained a proposal from ICC-IMS to survey its sidewalks along major and local roads. The attached proposal outlines the scope of services and provides a budgetary estimate of $68,097. City engineering consultant, AECOM, recommends utilizing ICC-IMS's services as they were unable to find other comparable companies offering these services. The proposal pricing is based on the pavement analysis services awarded through the TXShare cooperative purchasing program (Agreement #2022-063). The TXShare Cooperative Purchasing program is operated by the North Central Texas Council of Governments (NCTCOG). The sidewalk survey would take 1-2 weeks to complete plus 2-3 weeks to process the data.

RECOMMENDED ACTION: Approval to award services to ICC-IMS through the TXShare cooperative purchasing program, in the amount of $68,097 to perform a sidewalk condition survey of the City's sidewalks.

City Sidewalks
Location Map



Map Author: Runkel
Date: 2-13-25
Version #: 1.0

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

City Sidewalks (Concrete)

City of Novi
Engineering Division
Department of Public Works
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org

0 875 1,750 3,500 5,250
Feet
1 inch = 4,270 feet

February 7, 2025

Mr. Jeff Herczeg
City of Novi
Field Services Complex
26300 Lee Begole Drive
Novi, MI 48375

Reference: Recommendation Letter for the Services of ICC-IMS

Dear Mr. Herczeg,

As Novi is planning to undergo a multi-year program assessing and repairing all neighborhood sidewalks throughout the city, we are seeking efficiencies to accomplish that task. When performing preliminary reviews of the individual neighborhoods identified by the city as problematic, AECOM previously walked each sidewalk and manually measured deflections at sidewalk joints and noted spots with deterioration. This technique is not only time consuming but introduces a level of human error as the measuring methods can vary from person to person and location to location. While this process was satisfactory for individual neighborhoods where work was already planned or predicted to be needed, it is challenging to scale that city-wide.

In order to develop a multi-year plan, it requires the whole city to be mapped and assessed uniformly and at the same time. In researching better ways to perform this work, it was discovered that International Cybernetics and Infrastructure Management Services (ICC-IMS) is a company that has the technology to drive all sidewalks (neighborhood and majors) with a golf cart-like vehicle equipped with sensors. These sensors not only measure sidewalk joint deflections and gaps within 0.01" precision and accurate to 0.1", they also note cracking/deterioration and map it in a GIS system. On top of just collecting data, they also take a photo/video log that can be reviewed. All sidewalks can be driven in a matter of days rather than the months it would take to walk them all, and the GIS data can be manipulated to filter the city's thresholds of sidewalk repair needs. AECOM and the city can then use this data to plan which neighborhoods will have their sidewalks repaired and at what point in the program.

AECOM searched for other companies and were unable to find anybody comparable to what ICC-IMS provides. Additionally, personnel at AECOM's Florida office have collaborated with ICC-IMS on a few projects for roadway condition assessments. Our colleague noted that ICC-IMS produced good quality work and results for them. Given all of this, AECOM recommends Novi utilizes ICC-IMS's services to help gather data in order to best develop your long-term sidewalk repair program.

Sincerely,

AECOM Great Lakes, Inc.

Mark Koskinen, PE
Vice-President

AECOM Great Lakes, Inc.
39575 Lewis Drive, Suite 400
Novi, MI 48377
Tel: 248.204-5900
Fax:248.204.5901

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Tel: 248.204-5900
Fax:248.204.5901

Novi, MI - SST

Budgetary Estimate

Opportunity ID: 25-01-05602

10630 75th Street
Largo, FL 33777

+1 727-547-0696

www.icc-ims.com

1/31/2025

City of Novi
Jeff Herczeg, Director of Public Works
Email: jherczeg@cityofnovi.org
Phone: 248-735-5640

Re: Novi, MI - SST

Dear Jeff,

IMS Infrastructure Management Services (IMS) is pleased to present this budgetary estimate for a sidewalk condition survey for Novi. As an industry leader with four decades of pavement and asset management experience, we enable data-driven decision-making, ensuring that your agency's maintenance and rehabilitation funding results in the highest return on investment.

Our project approach is based on four principles:

- **Starting with the end in mind.** We are committed to understanding your agency's goals and objectives for this project. We work side-by-side with our clients to ensure all project goals are met and provide high-quality deliverables on time and within budget.
- **Confident, informed decision-making.** Accurate data provides the foundation for sidewalk management analyses, which identify the most appropriate maintenance or rehabilitation activity for each sidewalk segment.
- **Maximizing return on investment.** When you choose IMS, you gain a dedicated partner. Backed by decades of experience, our support results in better outcomes and translates to enhanced funding justification and more strategic allocation of existing funding.
- **Providing smart, end-to-end solutions.** We provide professional services powered by end-to-end software, enabling your agency to review and visualize data confidently and easily.

We look forward to delivering this project successfully. Please do not hesitate to contact me with any additional questions at (813) 469-2087 or by email at jtill@icc-ims.com.

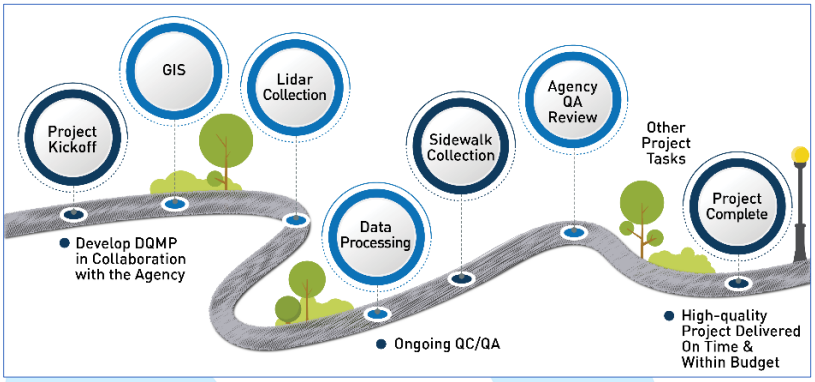
Best Regards,
IMS Infrastructure Management Services

John Till, Chief Financial & Revenue Officer

Table of Contents

Project Overview

The primary objective of this project is to collect 219 test miles of sidewalk condition data. Our project roadmap, shown in the figure below, has evolved over the years and reflects our team's collective experience of successfully delivering hundreds of similar projects. (*See Appendix A for more details on each step in our project roadmap.)*



The sidewalk condition survey will be performed with an ICC Sidewalk Surface Tester (SST) data collection system. The SST collects georeferenced, high-resolution 2D imagery of the sidewalk surface along with longitudinal and transverse profile measurements. Collected data are processed to quantify the type, severity, and quantity of sidewalk surface distresses, including vertical displacements and horizontal separations. Longitudinal and transverse profile measurements are used to calculate sidewalk grade and cross slope, respectively. Processed data are delivered in both an Excel spreadsheet and a geodatabase. Sidewalk imagery is published to ICC's Inform™ online data visualization platform for easy review and reference by agency staff.

Deliverables

01

Sidewalk Condition Data

Reported in an Excel spreadsheet and a geodatabase.

02

Inform™ Online Data Viewer

Enables convenient, browser-based viewing of collected data and imagery. *(Note: 90 days of hosting for unlimited agency users is included from the time of implementation.)*

03

Additional Value-Added Services

If applicable, based on our discussions with you, this budgetary estimate includes information and pricing on additional value-added services, described in more detail below.

Budgetary Estimate

Novi, MI - SST

(Note: The final fee and scope of work depends on confirmation of test miles to be surveyed and analysis and reporting requirements.)

Budgetary Estimate					
Name	Qty.	Units	Price	Disc.	Total Price
Project Setup and Kickoff (SST)	1	Lump Sum	$2,500.00		**$2,500.00**
Project Management (SST)	1	Lump Sum	$1,660.00		**$1,660.00**
GIS Review and Survey Extents Verification (SST)	219	Test Miles	$15.00		**$3,285.00**
Data Dictionary Review and Acceptance (SST)	1	Lump Sum	$2,500.00		**$2,500.00**
Mobilization/Calibration - Sidewalk Surface Tester (SST)	1	Lump Sum	$2,925.00		**$2,925.00**
Field Data Collection - Sidewalk Surface Tester (SST)	219	Test Miles	$200.00		**$43,800.00**
Data Processing: Standard Sidewalk Condition Rating (Including QC/QA)	219	Test Miles	$35.00		**$7,665.00**
Condition Data Delivery in Geodatabase (SST)	1	Lump Sum	$1,500.00		**$1,500.00**
Inform - <400 miles (SST)- 90 Day Free Trial (Price reflects annual fee if opt in after trial)	1	Per Year	$2,000.00		**$2,000.00**
Inform Web Hosting (SST)- 90 Day Free Trial (Price reflects annual fee if opt in after trial)	219	Per year per mile	$1.20		**$262.80**
			Total Price:		**$68,097.80**

Inform includes 90 days free. By paying the first year of software licensing and data hosting, the agency will have access to Inform for 15 months post data being published to Inform.

Company Profile

IMS Infrastructure Management Services – now powered by International Cybernetics Company (ICC) – has revolutionized roadway infrastructure management since 1975. With the 2022 merger of IMS and ICC, the IMS team of infrastructure consultants is now backed by ICC's industry-leading data acquisition technologies. We take pride in having one of the industry's largest fleets of advanced pavement, sidewalk, and right-of-way asset data collection systems.

Over the past five years, we have made a $5 million investment in enhancing our Unify™ software suite, solidifying our position as an industry leader in providing fully integrated, end-to-end data collection, processing, and visualization tools. Our advanced systems – combined with our rigorous approach to quality control – empower us to generate unparalleled data quality while setting the industry benchmark for the fastest turnaround time. The actions that we have taken over the past five years illustrate our continued commitment to improving data quality while simultaneously reducing data collection costs for our clients.

We offer the following pavement management services:

- Automated and semi-automated pavement condition assessments.
- Non-destructive pavement testing and analysis.
- Pavement management system implementation and training.
- Pavement management plan development and presentation.

In addition to pavement management services, IMS offers complementary services such as:

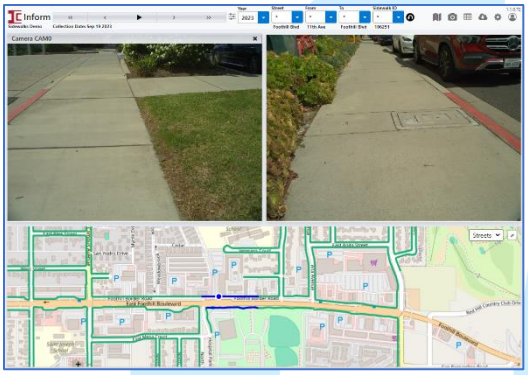
- Right-of-way asset inventory development using 360-degree imagery and mobile Lidar.
- Sidewalk and Americans with Disabilities (ADA) compliance surveys.
- Data visualization services using dashboards, StoryMaps, and web applications built on GIS.

Welcome to the new era of infrastructure management, where consulting services are powered by advanced technologies. ***Together, IMS – now powered by ICC – are paving the way forward!***

Industry-Leading Technologies

Sidewalk Surface Tester (SST)

The sidewalk condition survey will be performed using an ICC Sidewalk Surface Tester (SST) data collection system. The SST is equipped with industry-leading data acquisition technologies, including three (3) Gocator point lasers and 5g accelerometers for capturing longitudinal and transverse profile data, two (2) 12MP Basler cameras for capturing forward- and rear-facing sidewalk imagery, and a 250 Hz MEMS IMU with a Hemisphere DGPS.



Inform™ Online Data Viewer

The ICC Inform™ data viewer is an easy-to-use, browser-based, cloud-hosted tool for reviewing sidewalk condition data and associated imagery. Inform™ presents the data in a map-based environment, enabling agencies to review all collected sidewalk data. The Inform™ viewer is fast, intuitive, and reduces the need for field visits.

"Inform has not only met but also surpassed our expectations. It is quick, exceptionally responsive, requires no IT involvement, and is incredibly user-friendly for individuals of all levels."

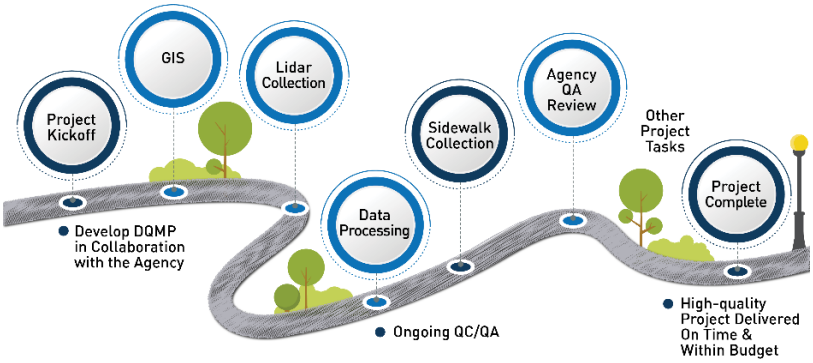
– Robert Bush, Program Manager, Arizona DOT

APPENDIX

Appendix A – Typical Project Roadmap

Step 1: Project Kickoff

The IMS project manager schedules a kickoff meeting with your agency's project team to review the project scope, schedule, and fee. The IMS project manager ensures that the IMS team and agency stakeholders clearly understand the goals and objectives of the project.



Step 2: GIS Linkage and Survey Map Development

Following the kickoff meeting, IMS' GIS team reviews the agency's sidewalk network and verifies the sidewalks to be collected. The agreed-upon sidewalk network is loaded into IMS' Drive™ software, which defines the sidewalk network segmentation and attribution to be collected and delivered.

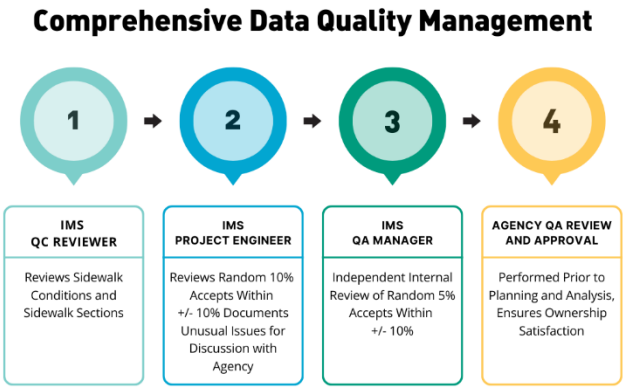
Step 3: Data Collection

The sidewalk condition survey is performed with a Sidewalk Surface Tester (SST). Georeferenced, high-resolution imagery of the sidewalk surface and longitudinal and transverse profile measurements are collected.

Step 4: Data Processing

The collected data are processed using ICC's Connect™ software to validate the type, severity, and quantity of sidewalk surface distresses.

Step 5: Multi-step QC/QA IMS has developed a unique approach to sidewalk condition surveys by coupling the power of automated algorithms with manual review of distress data by trained sidewalk raters. All data is manually reviewed by our QC team, then reviewed by our QA manager, and lastly, submitted to the agency for final review and acceptance. This rigorous QC/QA process provides an added measure of confidence that the sidewalk condition data is accurate.



Step 6: Data Reporting

After data collection, we process the information using advanced software to generate detailed reports. These reports provide actionable insights for sidewalk management and maintenance planning.

- **Geodatabase:** Easily view identified trip hazards and other reported distresses in your GIS software of choice with our standard geodatabase deliverables.
- **Tabular Reporting:** Our data is also formatted for easy viewing in Excel and other end user computing tools.

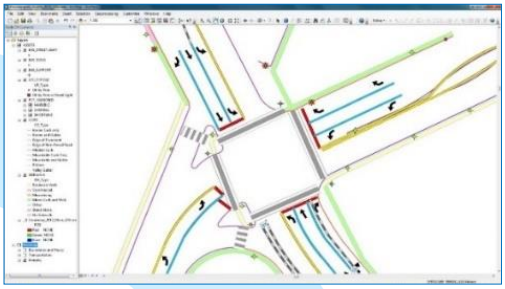
Step 7: Project Closeout

Project deliverables will be sent to you for final approval and acceptance. Once accepted, we will facilitate a final project close-out meeting with you, where we will present our findings and recommendations. This workshop-style meeting is an opportunity to clarify any final questions and discuss other ways IMS can support your sidewalk management program in the future.

Appendix B – Additional Value-Added Services

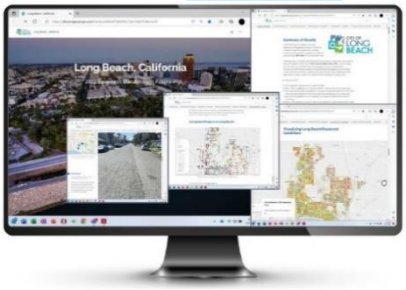
Right of Way (ROW) Asset Collection (e.g., signs, markings, curb, and gutter, etc.)

Imagery collected during the pavement condition survey can be used to build ROW asset inventories and condition assessments for signs, sign supports, curb and gutter, sidewalks and multi-use trails, ADA ramps, pavement markings and striping, traffic signals, trees, and many others. While we offer multiple methods for collecting ROW asset data, which is a primary component of half of all our projects, this is the most efficient.



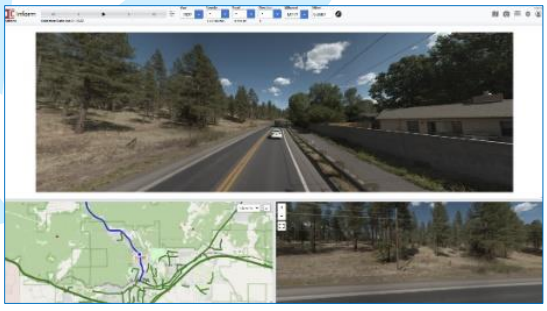
Web-based GIS Visualization via StoryMaps and Dashboards

Easy-to-use and easy-to-maintain web-based, geocentric StoryMaps and Dashboards can be built to serve not only internal staff but also constituents. These tools provide a dynamic way to present complicated information visually. StoryMaps and Dashboards may be configured for use within the agency for coordinating projects across departments or for presentation to the public to promote transparency and trust.



Inform™ Data Hosting

IMS offers a convenient, web-based tool for reviewing pavement condition data and associated imagery. Our cloud-hosted visualization and analysis software Inform™ enables agencies to review collected pavement and asset data. The software is fast, intuitive, and is the simplest way to make valuable photolog images available to every user. **Ninety (90) days of complimentary hosting is included with all IMS projects.** Competitive pricing for data hosting in year two and beyond is available upon request.



Structural Testing with a Fast-Falling Weight Deflectometer (FastFWD)

IMS offers additional pavement testing techniques to enhance decision-making and project prioritization.

The FastFWD applies a dynamic load to the pavement surface to measure structural capacity and pavement layer stiffness values.

We integrate the structural index (SI) as a component of each roadway's final PCI to help you better predict future performance and fine-tune rehabilitation activities, such as determining when to reconstruct vs. mill and overlay.

Mobile Lidar for Pedestrian Curb Ramp Assessments

Mobile Lidar is deployed to supplement ROW inventory surveys by creating a 3D point cloud from which measurements can be extracted. Our mobile lidar system collects 1.2 million points per second, resulting in extremely dense point clouds. The integrated Ladybug5+ camera captures high-resolution spherical imagery at defined intervals. Using the lidar point cloud, IMS can efficiently take detailed measurements of pedestrian curb ramps.

Roadway Friction Testing

Friction testing is a critical element of roadway safety inspections. Adequate friction can help reduce accidents and save lives. In the last five years alone, we have successfully completed 174 friction testing projects. The friction of the pavement surface is measured in accordance with ASTM E274 and incorporates a ribbed tire in accordance with ASTM E501 for studies of the left wheel path at each site.

Customized Written Reports and Specialty Maps

IMS will prepare all project documentation, including a draft and final summary report of the findings and conclusions as part of the project. Additional analyses and specialty maps may be added to the final report to enhance the ability of the agency to communicate existing pavement conditions, forecasted conditions, and M&R needs and priorities.

Software "Needs Assessments," Training, and Technical Support

IMS performs software needs assessments for agencies to determine the pavement management system that will best meet the agency's needs. We also provide software training as a value-added service. We review the agency's existing IT structure, program goals, and user skillsets to make a recommendation on what pavement management software will best meet the need. Ongoing technical support is another popular value-added service available regardless of software.

GIS "Clean-up" Services – No GIS… No Problem!

IMS reviews the integrity of the agency's GIS to ensure that segmentation conforms to pavement management best practices and that the existing attribution is correct. Our team of GIS technicians and analysts assist agencies in validating their GIS and modifying it, when necessary, to meet pavement management goals and objectives. Developing pavement-specific GIS layers is often necessary for reporting pavement conditions in a logical, easy-to-understand format.