AUGUSTA-RICHMOND COUNTY
ENGINEERING DEPARTMENT
SUPPLEMENTAL AGREEMENT

Augusta Richmond County Project Number(s):	**330-041110-52.12115/222830908-52.12115**
Supplemental Agreement Number:	**2**
Purchase Order Number:	**22ENG166**

WHEREAS, We, **Infrastructure Management Services** entered into a contract with Augusta-Richmond County on May 18, 2022, for Engineering Design Services for **Pavement System Assessment & Preventative Maintenance Solutions for Augusta Roadway Infrastructure**, and

WHEREAS, certain revisions to the design requested by Augusta-Richmond County are not covered by the scope of the original contract, we desire to submit the following Supplemental Agreement to-wit:

For Continued roadway Pavement Assessment & Asset Inventory data verification and analysis

It is agreed that as a result of the above described modification the contract amount is increased by **$189,000.00** from **$506,049** to a new total of **$695,049.00.**

Any modifications to submittal dates shall be as identified in the attached proposal. This agreement in no way modifies or changes the original contract of which it becomes a part, except as specifically stated herein.

NOW, THEREFORE, We, **Infrastructure Management Services,** hereby agree to said Supplemental Agreement consisting of the above mentioned items and prices, and agree that this Supplemental Agreement is hereby made a part of the original contract to be performed under the specifications thereof, and that the original contract is in full force and effect, except insofar as it might be modified by this Supplemental Agreement.

This _____ day of _____, 2024.

RECOMMEND FOR APPROVAL:

CITY OF AUGUSTA-RICHMOND COUNTY
AUGUSTA, GEORGIA

_____
Mayor Garnett L. Johnson

Approved: Date _____

ATTEST:

_____

Title: _____

Infrastructure Management Services

_____

Approved: Date _____
[ATTACHED CORPORATE SEAL]
ATTEST:

_____

Title: _____

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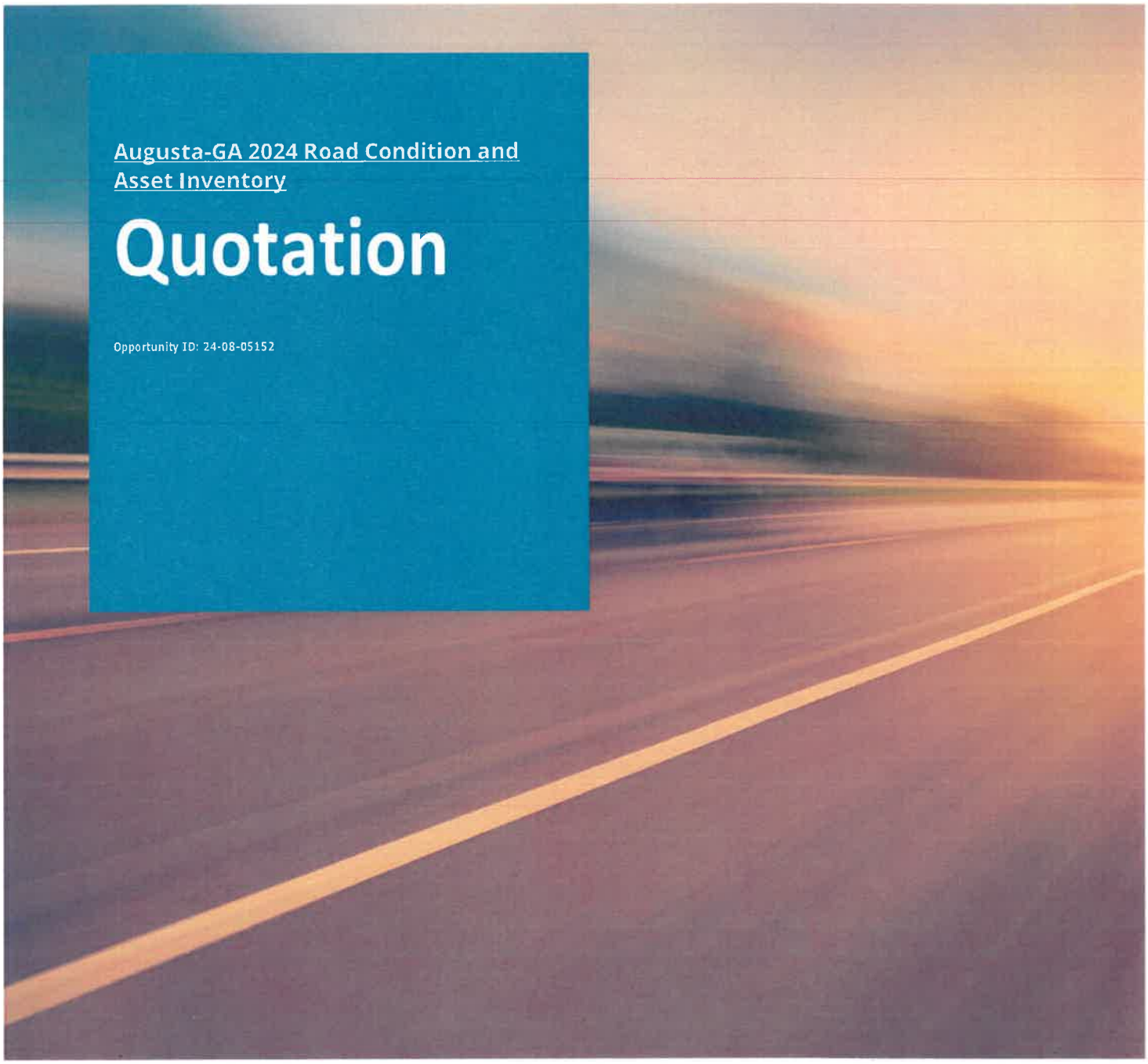

Augusta-GA 2024 Road Condition and Asset Inventory

Quotation

Opportunity ID: 24-08-05152

10630 75th Street
Largo, FL 33777

+1 727-547-0696

www.icc-ims.com

8/23/2024

Augusta-Richmond County
Mohamed Mahgoub
Email: mmahgoub@augustaga.gov
Phone: 706-821-4851

Re: Augusta-GA 2024 Road Condition and Asset Inventory

Dear Mohamed,

IMS Infrastructure Management Services (IMS) is pleased to present this quotation for a roadway pavement condition survey for Augusta-Richmond County as an addendum to the current contract. 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 pavement management analyses, which identify the most appropriate maintenance or rehabilitation activity for each roadway pavement.
- **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 (854) 458-7052 or by email at cfarley@icc-ims.com.

Best Regards,
IMS Infrastructure Management Services

Chris Farley

Chris Farley, CSM

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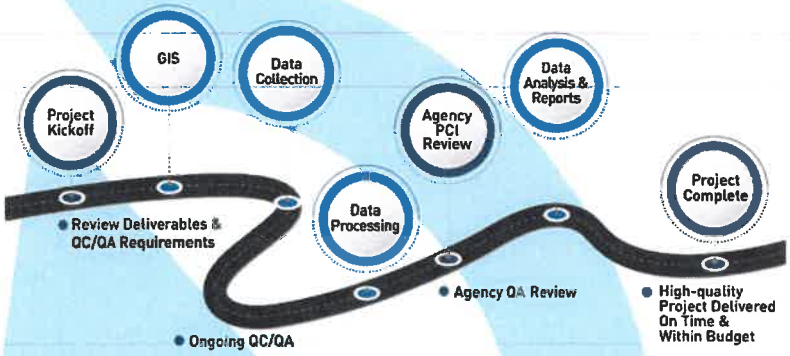
Project Overview

The primary objective of this project is to collect 1,080 test miles of roadway condition data. To ensure adequate coverage across the roadway network, we survey roads with greater than three lanes in both directions and all remaining roads in one direction. Our project roadmap, shown in the figure below, has evolved over the years and reflects our team's collective experience of successfully delivering thousands of similar projects. (*See Appendix A for more details on each step in our project roadmap.)*



The pavement condition survey will be performed with an IrisPRO Pave™ data collection system. The IrisPRO Pave™ collects georeferenced, high-resolution 3D imagery of the pavement surface, spherical right-of-way imagery, and longitudinal and transverse profile measurements.

Collected data are processed to quantify the type, severity, and quantity of pavement surface distresses, including cracking and rutting. Pavement roughness values are reported following the International Roughness Index (IRI) method. Processed data are delivered in both an Excel spreadsheet and a geodatabase. Roadway imagery is published to our Inform™ online data visualization platform for easy review and reference by agency staff.

An asset inventory will also be performed using the right-of-way imagery. The following asset types will be inventoried following a similar data dictionary and scope of work as performed in the previous cycle, but with suitable clarifications and enhancements to improve data quality as mutually agreed:

1. Pavement Markings - Point
2. Pavement Striping - Linear
3. Sidewalk/Curb Ramps
4. Curb & Gutter
5. Traffic Signals and Flashers
6. Sign Supports

Deliverables

01 **Roadway Pavement Condition Data**
Reported in an Excel spreadsheet and a geodatabase.

02 **Easy Street Analysis (ESA) of Roadway Pavements**

- Easy Street Analysis (ESA) pavement management spreadsheet
- Customizable prioritization and deferred cost analysis over 10-year timeframe
- ESA training session (two hours) via Teams

03 **Ten (10) Year, Network-Level Pavement Management Plan**

04 **Inform™ Online Data Viewer**
Enables convenient, browser-based viewing of collected data and imagery. The quoted price includes data hosting and software access for unlimited agency users for 5 years.

05 **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.

Quotation

Augusta-GA 2024 Road Condition and Asset Inventory

This offer expires on 9/27/2024. *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	1	Lump Sum	$2,462.00		**$2,462.00**
Project Management	1	Lump Sum	$1,000.00		**$1,000.00**
GIS Review and Survey Extents Verification	1,080	Test Miles	$1.75		**$1,890.00**
Mobilization/Calibration	1	Lump Sum	$4,500.00		**$4,500.00**
Field Data Collection - IrisPRO Pave	1,080	Test Miles	$55.00		**$59,400.00**
Pavement Management Report	1	Lump Sum	$3,500.00		**$3,500.00**
Data Processing: Enhanced ASTM D6433 (Including QC/QA) - According to Standard Data Dictionary	1,080	Test Miles	$20.00		**$21,600.00**
Asset Inventory - Pavement Markings - Point	1,080	Test Miles	$11.50		**$12,420.00**
Asset Inventory - Pavement Striping - Linear	1,080	Test Miles	$11.50		**$12,420.00**
Asset Inventory - Sidewalk/Curb Ramps	805	Test Miles	$18.00		**$14,490.00**
Asset Inventory - Curb & Gutter	805	Test Miles	$18.00		**$14,490.00**
Asset Inventory - Traffic Signals and Flashers	350	Test Miles	$18.00		**$6,300.00**
Asset Inventory - Sign Supports	1,080	Test Miles	$23.00		**$24,840.00**
Easy Street Analysis (ESA) Pavement Management Plan (PMP)	1	Lump Sum	$8,500.00		**$8,500.00**
Ladybug Image Delivery and Table (per camera view)	1,080	Test Miles	$1.10		**$1,188.00**
Inform Web Hosting *(90 days included at no charge)*	1,080	Miles per year	$1.20	100%	**$0.00**
			Total Price:		**$189,000.00**
Continued on page 7					

Optional Add-ons *The following line items will be activated upon approval of the Augusta Engineering dept and are not included in total price above.					
Inform Web Hosting	1,080	Miles per year	$1.20		**$1,296.00**
Inform - 800 to 1,200 lane miles	1	Year	$6,000.00		**$6,000.00**
Easy Street Analysis Support	1	Year	$1,000.00		**$1,000.00**
Contingency Reserve	1	Lump Sum	$20,000.00		**$20,000.00**

If the City chooses to execute this contract addendum, IMS will apply 50% of the asset inventory balance from the current contract, or $74,757.25, as a down payment towards the above services. For clarity, upon payment of the outstanding balance of $149,514.50 for assets and $13,300.75 for pavement, IMS will credit $74,757.25 towards this addendum, making the balance to be paid for the new work only **$114,242.75**.

The quantity of miles for asset extraction can vary by +/-10% at no change in the total cost shown in the table above.

Easy Street Analysis Support includes both technical support and routine updates to ESA such as treatment costs, added/removed segments, and analysis extracts. It does not include re-running analysis or performing new analysis.

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!***

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Industry-Leading Technologies

IrisPRO Pave™
The pavement condition survey will be performed using an IrisPRO Pave™ data collection system. The IrisPRO Pave™ is equipped with industry-leading data acquisition technologies, including an inertial profiler, a second-generation Laser Crack Measurement System (LCMS-2), a FLIR Ladybug5+ 30MP 360-degree camera, and an iXBlue A7 or OxTS INS with DGPS.

Inform™ Online Data Viewer
The Inform™ data viewer is an easy-to-use, browser-based, cloud-hosted tool for reviewing pavement condition data and associated imagery. Inform™ presents the data in a map-based environment, enabling agencies to review all collected pavement data, including cracking, rutting, and roughness. 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."

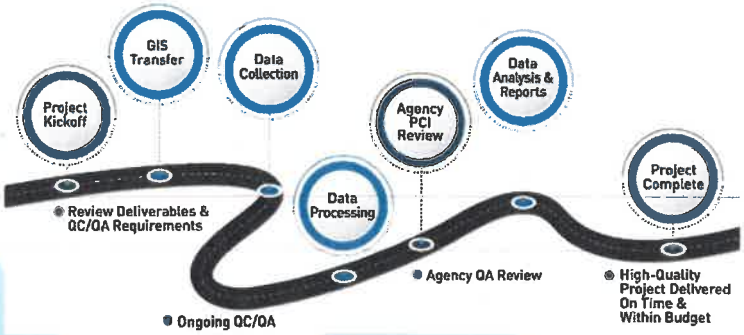
– Robert Bush, Program Manager, Arizona DOT

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 roadway network and verifies the roadways to be collected. The agreed-upon roadway network is loaded into ICC Drive™ software, which defines the pavement network segmentation and attribution to be collected and delivered.

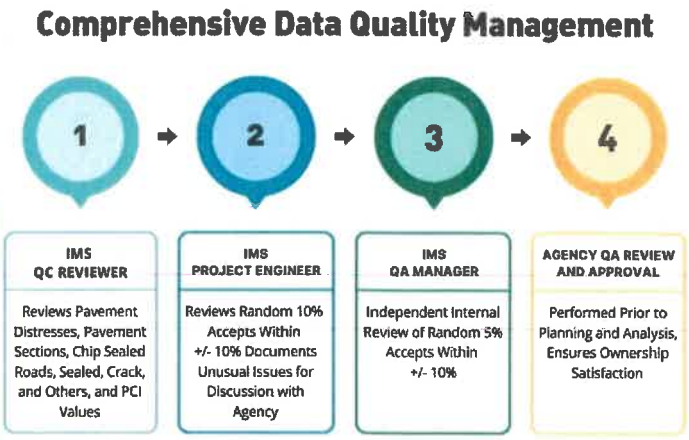
Step 3: Data Collection

The pavement condition survey is performed with an ICC IrisPRO Pave™ data collection system. Georeferenced, high-resolution 3D imagery of the pavement surface, spherical right-of-way imagery, and longitudinal and transverse profile measurements are collected.

Step 4: Data Processing

The collected data are processed using ICC Connect™ software to quantify the type, severity, and quantity of pavement surface distresses, including cracking and rutting. Pavement roughness values are reported using the International Roughness Index (IRI) method.

Step 5: Multi-step QC/QA IMS has developed a unique approach to pavement condition surveys by coupling the power of automated algorithms with manual review of distress data by trained and certified pavement 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 pavement condition data is accurate.



Step 6: Data Analysis & Reports

- **Comprehensive Analysis**
  Our data analysis is thorough and tailored to provide insights that drive decision-making.
- **Detailed Reporting**
  We deliver comprehensive reports that are clear, concise, and customized to your reporting standards.

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 pavement 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) dayes of complimentary hosting is included with all IMS projects.** Competitive pricing for data hosting in year two and beyond is available upon request.

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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.

Sidewalk, Trail, and Parking Lot Surveys with a Sidewalk Surface Tester (SST)

We deploy our Sidewalk Surface Testers (SST) for capturing sidewalk inventory and condition data, SSTs may also be deployed to collect data for narrow alleys, parking lots, bike paths, and multi-use trails. SST surveys yield comprehensive sidewalk condition data that may be used in combination with lidar pedestrian curb ramp data to develop detailed ADA transition plans. With the evolving Prowag requirements, it is critical for agencies to have a plan in place for routinely assessing the condition of and proactively maintaining their pedestrian walkways.

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.

In-Person (or Virtual) Council Presentations

IMS is often asked to develop and deliver a council presentation to educate council members and the public on the concepts of pavement management and the results of the surveys, health of the roadway network and recommendations as a value-added service. We work collaboratively with agency staff to develop highly focused presentations that layout the existing state of the agency's roadways and the funding required to meet the agency's goals and objectives.

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.

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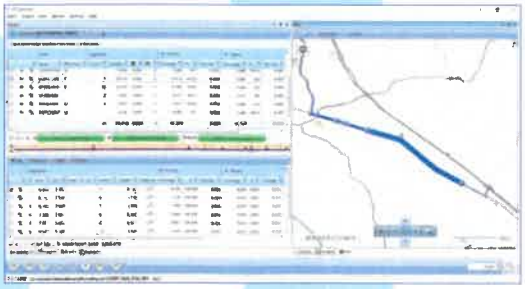
Software "Needs Assessments," Training, and Technical Support

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.

ESA Easy Street Analysis by IMS
lucity
StreetSaver
Cartegraph
Cityworks
streetlogix
PAVER™

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.



Roadway Functional Class Review

IMS reviews the functional classification and characteristics of the agency's roadway network to make any necessary adjustments to highway, road, and street classifications. Understanding the volume of traffic and associated traffic loads is critical in determining the appropriate maintenance and rehabilitation activity for each roadway pavement.