

PROFESSIONAL CONSULTANT SERVICES AGREEMENT

IMS INFRASTRUCTURE MANAGEMENT SERVICES, LLC

[Pavement Management Program Annual Services (2020-2025) RFP #2026]

THIS PROFESSIONAL CONSULTANT SERVICES AGREEMENT ("Agreement") is made and entered into this _____ day of _____, 2020 ("Effective Date"), by and between the CITY OF RIVERSIDE, a California charter city and municipal corporation ("City"), and IMS INFRASTRUCTURE MANAGEMENT SERVICES, LLC, an Arizona limited liability company authorized to do business in California ("Consultant").

1. **Scope of Services.** City agrees to retain and does hereby retain Consultant and Consultant agrees to provide the services more particularly described in Exhibit "A," "Scope of Services" ("Services"), attached hereto and incorporated herein by reference, in conjunction with Pavement Management Program Annual Services (2020-2025) RFP #2026 ("Project").

2. **Term.** This Agreement shall be effective on the date first written above and shall remain in effect until December 31, 2025, unless otherwise terminated pursuant to the provisions herein.

3. **Compensation/Payment.** Consultant shall perform the Services under this Agreement for the total sum not to exceed Three Hundred Ninety-Nine Thousand Seven Hundred Ninety-Five Dollars (\$399,795) payable in accordance with the terms set forth in Exhibit "B." Said payment shall be made in accordance with City's usual accounting procedures upon receipt and approval of an itemized invoice setting forth the services performed. The invoices shall be delivered to City at the address set forth in Section 4 hereof.

4. **Notices.** Any notices required to be given, hereunder shall be in writing and shall be personally served or given by mail. Any notice given by mail shall be deemed given when deposited in the United States Mail, certified and postage prepaid, addressed to the party to be served as follows:

To City

Public Works - Engineering
City of Riverside
Attn: Edward Lara
3900 Main Street
Riverside, CA 92522

To Consultant

IMS Infrastructure Management Services, LLC.
Attn: Zac Thomason
8380 S. Kyrene Road, Suite #101
Tempe, AZ 85254

5. **Prevailing Wage.** If applicable, Consultant and all subcontractors are required to pay the general prevailing wage rates of per diem wages and overtime and holiday wages determined by the Director of the Department of Industrial Relations under Section 1720 et seq. of the California Labor Code and implemented by Resolution No. 13346 of the City Council of the City of Riverside. The Director's determination is available on-line at www.dir.ca.gov/dlsr/DPreWageDetermination.htm and is referred to and made a part hereof; the wage rates therein ascertained, determined, and specified are referred to and made a part hereof as though fully set forth herein.

6. **Contract Administration.** A designee of the City will be appointed in writing by the City Manager or Department Director to administer this Agreement on behalf of City and shall be referred to herein as Contract Administrator.

7. **Standard of Performance.** While performing the Services, Consultant shall exercise the reasonable professional care and skill customarily exercised by reputable members of Consultant's profession practicing in the Metropolitan Southern California Area, and shall use reasonable diligence and best judgment while exercising its professional skill and expertise.

8. **Personnel.** Consultant shall furnish all personnel necessary to perform the Services and shall be responsible for their performance and compensation. Consultant recognizes that the qualifications and experience of the personnel to be used are vital to professional and timely completion of the Services. The key personnel listed in Exhibit "C" attached hereto and incorporated herein by this reference and assigned to perform portions of the Services shall remain assigned through completion of the Services, unless otherwise mutually agreed by the parties in writing, or caused by hardship or resignation in which case substitutes shall be subject to City approval.

9. **Assignment and Subcontracting.** Neither party shall assign any right, interest, or obligation in or under this Agreement to any other entity without prior written consent of the other party. In any event, no assignment shall be made unless the assignee expressly assumes the obligations of assignor under this Agreement, in a writing satisfactory to the parties. Consultant acknowledges that any assignment may, at the City's sole discretion, require City Manager and/or City Council approval. Consultant shall not subcontract any portion of the work required by this Agreement without prior written approval by the responsible City Contract Administrator. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement, including without limitation, the insurance obligations set forth in Section 12. The Consultant acknowledges and agrees that the City is an intended beneficiary of any work performed by any subcontractor for purposes of establishing a duty of care between any subcontractor and the City.

10. **Independent Contractor.** In the performance of this Agreement, Consultant, and Consultant's employees, subcontractors and agents, shall act in an independent capacity as independent contractors, and not as officers or employees of the City of Riverside. Consultant acknowledges and agrees that the City has no obligation to pay or withhold state or federal taxes or to provide workers' compensation or unemployment insurance to Consultant, or to Consultant's employees, subcontractors and agents. Consultant, as an independent contractor, shall be responsible for any and all taxes that apply to Consultant as an employer.

11. Indemnification.

11.1 Design Professional Defined. For purposes of this Agreement, "Design Professional" includes the following:

- A. An individual licensed as an architect pursuant to Chapter 3 (commencing with Section 5500) of Division 3 of the Business and Professions Code, and a business entity offering architectural services in accordance with that chapter.
- B. An individual licensed as a landscape architect pursuant to Chapter 3.5 (commencing with Section 5615) of Division 3 of the Business and Professions Code, and a business entity offering landscape architectural services in accordance with that chapter.
- C. An individual registered as a professional engineer pursuant to Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code, and a business entity offering professional engineering services in accordance with that chapter.
- D. An individual licensed as a professional land surveyor pursuant to Chapter 15 (commencing with Section 8700) of Division 3 of the Business and Professions Code, and a business entity offering professional land surveying services in accordance with that chapter.

11.2 Defense Obligation For Design Professional Liability. Consultant agrees, at its cost and expense, to promptly defend the City, and the City's employees, officers, managers, agents and council members (collectively the "Parties to be Defended") from and against any and all claims, allegations, lawsuits, arbitration proceedings, administrative proceedings, regulatory proceedings, or other legal proceedings to the extent the same arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, or anyone employed by or working under the Consultant or for services rendered to the Consultant in the performance of the Agreement, notwithstanding that the City may have benefited from its work or services and whether or not caused in part by the negligence of an Indemnified Party. Consultant agrees to provide this defense immediately upon written notice from the City, and with well qualified, adequately insured and experienced legal counsel acceptable to City. Consultant will reimburse City for reasonable defense costs for claims arising out of Consultant's professional negligence based on the percentage of Consultant's liability. This obligation to defend as set forth herein is binding on the successors, assigns and heirs of Consultant and shall survive the termination of Consultant's Services under this Agreement.

11.3 Indemnity For Design Professional Liability. When the law establishes a professional standard of care for Consultant's services, to the fullest extent permitted by law, Consultant shall indemnify, protect and hold harmless the City and the City's employees, officers, managers, agents, and Council Members ("Indemnified Parties") from and against any and all claim for damage, charge, lawsuit, action, judicial, administrative, regulatory or arbitration proceeding,

damage, cost, expense (including counsel and expert fees), judgment, civil fines and penalties, liabilities or losses of any kind or nature whatsoever to the extent the same arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, or anyone employed by or working under the Consultant or for services rendered to the Consultant in the performance of the Agreement, notwithstanding that the City may have benefited from its work or services and whether or not caused in part by the negligence of an Indemnified Party.

11.4 Defense Obligation For Other Than Design Professional Liability.

Consultant agrees, at its cost and expense, to promptly defend the City, and the City's employees, officers, managers, agents and council members (collectively the "Parties to be Defended") from and against any and all claims, allegations, lawsuits, arbitration proceedings, administrative proceedings, regulatory proceedings, or other legal proceedings which arise out of, or relate to, or are in any way connected with: 1) the Services, work, activities, operations, or duties of the Consultant, or of anyone employed by or working under the Consultant, or 2) any breach of the Agreement by the Consultant.

This duty to defend shall apply whether or not such claims, allegations, lawsuits or proceedings have merit or are meritless, or which involve claims or allegations that any or all of the Parties to be Defended were actively, passively, or concurrently negligent, or which otherwise assert that the Parties to be Defended are responsible, in whole or in part, for any loss, damage or injury. Consultant agrees to provide this defense immediately upon written notice from the City, and with well qualified, adequately insured and experienced legal counsel acceptable to City. This obligation to defend as set forth herein is binding on the successors, assigns and heirs of Consultant and shall survive the termination of Consultant's Services under this Agreement.

11.5 Indemnity For Other Than Design Professional Liability. Except as to the sole negligence or willful misconduct of the City, Consultant agrees to indemnify, protect and hold harmless the Indemnified Parties from and against any claim for damage, charge, lawsuit, action, judicial, administrative, regulatory or arbitration proceeding, damage, cost, expense (including counsel and expert fees), judgment, civil fine and penalties, liabilities or losses of any kind or nature whatsoever whether actual, threatened or alleged, which arise out of, pertain to, or relate to, or are a consequence of, or are attributable to, or are in any manner connected with the performance of the Services, work, activities, operations or duties of the Consultant, or anyone employed by or working under the Consultant or for services rendered to Consultant in the performance of this Agreement, notwithstanding that the City may have benefited from its work or services. This indemnification provision shall apply to any acts, omissions, negligence, recklessness, or willful misconduct, whether active or passive, on the part of the Consultant or anyone employed or working under the Consultant.

12. Insurance.

12.1 General Provisions. Prior to the City's execution of this Agreement, Consultant shall provide satisfactory evidence of, and shall thereafter maintain during the term of this Agreement, such insurance policies and coverages in the types, limits, forms and ratings required herein. The rating and required insurance policies and coverages may be modified in writing by the City's Risk Manager or City Attorney, or a designee, unless such modification is prohibited by law.

12.1.1 Limitations. These minimum amounts of coverage shall not constitute any limitation or cap on Consultant's indemnification obligations under Section 11 hereof.

12.1.2 **Ratings.** Any insurance policy or coverage provided by Consultant or subcontractors as required by this Agreement shall be deemed inadequate and a material breach of this Agreement, unless such policy or coverage is issued by insurance companies authorized to transact insurance business in the State of California with a policy holder's rating of A or higher and a Financial Class of VII or higher.

12.1.3 **Cancellation.** The policies shall not be canceled unless thirty (30) days' prior written notification of intended cancellation has been given to City by certified or registered mail, postage prepaid.

12.1.4 **Adequacy.** The City, its officers, employees and agents make no representation that the types or limits of insurance specified to be carried by Consultant pursuant to this Agreement are adequate to protect Consultant. If Consultant believes that any required insurance coverage is inadequate, Consultant will obtain such additional insurance coverage as Consultant deems adequate, at Consultant's sole expense.

12.2 **Workers' Compensation Insurance.** By executing this Agreement, Consultant certifies that Consultant is aware of and will comply with Section 3700 of the Labor Code of the State of California requiring every employer to be insured against liability for workers' compensation, or to undertake self-insurance before commencing any of the work. Consultant shall carry the insurance or provide for self-insurance required by California law to protect said Consultant from claims under the Workers' Compensation Act. Prior to City's execution of this Agreement, Consultant shall file with City either 1) a certificate of insurance showing that such insurance is in effect, or that Consultant is self-insured for such coverage, or 2) a certified statement that Consultant has no employees, and acknowledging that if Consultant does employ any person, the necessary certificate of insurance will immediately be filed with City. Any certificate filed with City shall provide that City will be given ten (10) days' prior written notice before modification or cancellation thereof.

12.3 **Commercial General Liability and Automobile Insurance.** Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, commercial general liability insurance and automobile liability insurance as required to insure Consultant against damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from or which may concern operations by anyone directly or indirectly employed by, connected with, or acting for or on behalf of Consultant. The City, and its officers, employees and agents, shall be named as additional insureds under the Consultant's insurance policies.

12.3.1 Consultant's commercial general liability insurance policy shall cover both bodily injury (including death) and property damage (including, but not limited to, premises operations liability, products-completed operations liability, independent contractor's liability, personal injury liability, and contractual liability) in an amount not less than \$1,000,000 per occurrence and a general aggregate limit in the amount of not less than \$2,000,000.

12.3.2 Consultant's automobile liability policy shall cover both bodily injury and property damage in an amount not less than \$1,000,000 per occurrence and an aggregate limit of not less than \$1,000,000. All of Consultant's automobile and/or commercial general liability insurance policies shall cover all vehicles used in connection with Consultant's performance of this Agreement, which vehicles shall include, but are not limited to, Consultant owned vehicles, Consultant leased vehicles, Consultant's employee vehicles, non-Consultant owned vehicles and hired vehicles.

12.3.3 Prior to City's execution of this Agreement, copies of insurance policies or original certificates along with additional insured endorsements acceptable to the City evidencing the coverage required by this Agreement, for both commercial general and automobile liability insurance, shall be filed with City and shall include the City and its officers, employees and agents, as additional insureds. Said policies shall be in the usual form of commercial general and automobile liability insurance policies, but shall include the following provisions:

It is agreed that the City of Riverside, and its officers, employees and agents, are added as additional insureds under this policy, solely for work done by and on behalf of the named insured for the City of Riverside.

12.3.4 The insurance policy or policies shall also comply with the following provisions:

- a. The policy shall be endorsed to waive any right of subrogation against the City and its sub-consultants, employees, officers and agents for services performed under this Agreement.
- b. If the policy is written on a claims made basis, the certificate should so specify and the policy must continue in force for one year after completion of the services. The retroactive date of coverage must also be listed.
- c. The policy shall specify that the insurance provided by Consultant will be considered primary and not contributory to any other insurance available to the City and Endorsement No. CG 20010413 shall be provided to the City.

12.4 **Errors and Omissions Insurance.** Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, errors and omissions professional liability insurance in the minimum amount of \$1,000,000 to protect the City from claims resulting from the Consultant's activities.

12.5 **Subcontractors' Insurance.** Consultant shall require all of its subcontractors to carry insurance, in an amount sufficient to cover the risk of injury, damage or loss that may be caused by the subcontractors' scope of work and activities provided in furtherance of this Agreement, including, but without limitation, the following coverages: Workers Compensation, Commercial General Liability, Errors and Omissions, and Automobile liability. Upon City's request,

Consultant shall provide City with satisfactory evidence that Subcontractors have obtained insurance policies and coverages required by this section.

13. **Business Tax.** Consultant understands that the Services performed under this Agreement constitutes doing business in the City of Riverside, and Consultant agrees that Consultant will register for and pay a business tax pursuant to Chapter 5.04 of the Riverside Municipal Code and keep such tax certificate current during the term of this Agreement.

14. **Time of Essence.** Time is of the essence for each and every provision of this Agreement.

15. **City's Right to Employ Other Consultants.** City reserves the right to employ other Consultants in connection with the Project. If the City is required to employ another consultant to complete Consultant's work, due to the failure of the Consultant to perform, or due to the breach of any of the provisions of this Agreement, the City reserves the right to seek reimbursement from Consultant.

16. **Accounting Records.** Consultant shall maintain complete and accurate records with respect to costs incurred under this Agreement. All such records shall be clearly identifiable. Consultant shall allow a representative of City during normal business hours to examine, audit, and make transcripts or copies of such records and any other documents created pursuant to this Agreement. Consultant shall allow inspection of all work, data, documents, proceedings, and activities related to the Agreement for a period of three (3) years from the date of final payment under this Agreement.

17. **Confidentiality.** All ideas, memoranda, specifications, plans, procedures, drawings, descriptions, computer program data, input record data, written information, and other materials either created by or provided to Consultant in connection with the performance of this Agreement shall be held confidential by Consultant, except as otherwise directed by City's Contract Administrator. Nothing furnished to Consultant which is otherwise known to the Consultant or is generally known, or has become known, to the related industry shall be deemed confidential. Consultant shall not use City's name or insignia, photographs of the Project, or any publicity pertaining to the Services or the Project in any magazine, trade paper, newspaper, television or radio production, website, or other similar medium without the prior written consent of the City.

18. **Ownership of Documents.** All reports, maps, drawings and other contract deliverables prepared under this Agreement by Consultant shall be and remain the property of City. Consultant shall not release to others information furnished by City without prior express written approval of City.

19. **Copyrights.** Consultant agrees that any work prepared for City which is eligible for copyright protection in the United States or elsewhere shall be a work made for hire. If any such work is deemed for any reason not to be a work made for hire, Consultant assigns all right, title and interest in the copyright in such work, and all extensions and renewals thereof, to City, and agrees to provide all assistance reasonably requested by City in the establishment, preservation and enforcement of its copyright in such work, such assistance to be provided at City's expense but

without any additional compensation to Consultant. Consultant agrees to waive all moral rights relating to the work developed or produced, including without limitation any and all rights of identification of authorship and any and all rights of approval, restriction or limitation on use or subsequent modifications.

20. **Conflict of Interest.** Consultant, for itself and on behalf of the individuals listed in Exhibit "C," represents and warrants that by the execution of this Agreement, they have no interest, present or contemplated, in the Project affected by the above-described Services. Consultant further warrants that neither Consultant, nor the individuals listed in Exhibit "C" have any real property, business interests or income interests that will be affected by this project or, alternatively, that Consultant will file with the City an affidavit disclosing any such interest.

21. **Solicitation.** Consultant warrants that Consultant has not employed or retained any person or agency to solicit or secure this Agreement, nor has it entered into any agreement or understanding for a commission, percentage, brokerage, or contingent fee to be paid to secure this Agreement. For breach of this warranty, City shall have the right to terminate this Agreement without liability and pay Consultant only for the value of work Consultant has actually performed, or, in its sole discretion, to deduct from the Agreement price or otherwise recover from Consultant the full amount of such commission, percentage, brokerage or commission fee. The remedies specified in this section shall be in addition to and not in lieu of those remedies otherwise specified in this Agreement.

22. **General Compliance With Laws.** Consultant shall keep fully informed of federal, state and local laws and ordinances and regulations which in any manner affect those employed by Consultant, or in any way affect the performance of services by Consultant pursuant to this Agreement. Consultant shall at all times observe and comply with all such laws, ordinances and regulations, and shall be solely responsible for any failure to comply with all applicable laws, ordinances and regulations. Consultant represents and warrants that Consultant has obtained all necessary licenses to perform the Scope of Services and that such licenses are in good standing. Consultant further represents and warrants that the services provided herein shall conform to all ordinances, policies and practices of the City of Riverside.

23. **Waiver.** No action or failure to act by the City shall constitute a waiver of any right or duty afforded City under this Agreement, nor shall any such action or failure to act constitute approval of or acquiescence in any breach thereunder, except as may be specifically, provided in this Agreement or as may be otherwise agreed in writing.

24. **Amendments.** This Agreement may be modified or amended only by a written agreement and/or change order executed by the Consultant and City.

25. **Termination.** City, by notifying Consultant in writing, shall have the right to terminate any or all of Consultant's services and work covered by this Agreement at any time. In the event of such termination, Consultant may submit Consultant's final written statement of the amount of Consultant's services as of the date of such termination based upon the ratio that the work completed bears to the total work required to make the report complete, subject to the City's rights under Sections 15 and 26 hereof. In ascertaining the work actually rendered through the termination

date, City shall consider completed work, work in progress and complete and incomplete reports and other documents only after delivered to City.

25.1 Other than as stated below, City shall give Consultant thirty (30) days' prior written notice prior to termination.

25.2 City may terminate this Agreement upon fifteen (15) days' written notice to Consultant, in the event:

25.2.1 Consultant substantially fails to perform or materially breaches the Agreement; or

25.2.2 City decides to abandon or postpone the Project.

26. **Offsets.** Consultant acknowledges and agrees that with respect to any business tax or penalties thereon, utility charges, invoiced fee or other debt which Consultant owes or may owe to the City, City reserves the right to withhold and offset said amounts from payments or refunds or reimbursements owed by City to Consultant. Notice of such withholding and offset, shall promptly be given to Consultant by City in writing. In the event of a dispute as to the amount owed or whether such amount is owed to the City, City will hold such disputed amount until either the appropriate appeal process has been completed or until the dispute has been resolved.

27. **Successors and Assigns.** This Agreement shall be binding upon City and its successors and assigns, and upon Consultant and its permitted successors and assigns, and shall not be assigned by Consultant, either in whole or in part, except as otherwise provided in paragraph 9 of this Agreement.

28. **Venue.** Any action at law or in equity brought by either of the parties hereto for the purpose of enforcing a right or rights provided for by this Agreement shall be tried in the Superior Court, County of Riverside, State of California, and the parties hereby waive all provisions of law providing for a change of venue in such proceedings to any other county. In the event either party hereto shall bring suit to enforce any term of this Agreement or to recover any damages for and on account of the breach of any term or condition of this Agreement, it is mutually agreed that each party will bear their own attorney's fees and costs.

29. **Nondiscrimination.** During Consultant's performance of this Agreement, Consultant shall not discriminate on the grounds of race, religious creed, color, national origin, ancestry, age, physical disability, mental disability, medical condition, including the medical condition of Acquired Immune Deficiency Syndrome (AIDS) or any condition related thereto, marital status, sex, genetic information, gender, gender identity, gender expression, or sexual orientation, military and veteran status, in the selection and retention of employees and subcontractors and the procurement of materials and equipment, except as provided in Section 12940 of the California Government Code. Further, Consultant agrees to conform to the requirements of the Americans with Disabilities Act in the performance of this Agreement.

30. **Severability.** Each provision, term, condition, covenant and/or restriction, in whole and in part, of this Agreement shall be considered severable. In the event any provision, term,

condition, covenant and/or restriction, in whole and/or in part, of this Agreement is declared invalid, unconstitutional, or void for any reason, such provision or part thereof shall be severed from this Agreement and shall not affect any other provision, term, condition, covenant and/or restriction of this Agreement, and the remainder of the Agreement shall continue in full force and effect.

31. **Authority.** The individuals executing this Agreement and the instruments referenced herein on behalf of Consultant each represent and warrant that they have the legal power, right and actual authority to bind Consultant to the terms and conditions hereof and thereof.

32. **Entire Agreement.** This Agreement constitutes the final, complete, and exclusive statement of the terms of the agreement between the parties pertaining to the subject matter of this Agreement, and supersedes all prior and contemporaneous understandings or agreements of the parties. Neither party has been induced to enter into this Agreement by and neither party is relying on, any representation or warranty outside those expressly set forth in this Agreement.

33. **Interpretation.** City and Consultant acknowledge and agree that this Agreement is the product of mutual arms-length negotiations and accordingly, the rule of construction, which provides that the ambiguities in a document shall be construed against the drafter of that document, shall have no application to the interpretation and enforcement of this Agreement.

33.1 Titles and captions are for convenience of reference only and do not define, describe or limit the scope or the intent of the Agreement or any of its terms. Reference to section numbers, are to sections in the Agreement unless expressly stated otherwise.

33.2 This Agreement shall be governed by and construed in accordance with the laws of the State of California in effect at the time of the execution of this Agreement.

33.3 In the event of a conflict between the body of this Agreement and Exhibit "A" - Scope of Services hereto, the terms contained in Exhibit "A" shall be controlling.

34. **Exhibits.** The following exhibits attached hereto are incorporated herein to this Agreement by this reference:

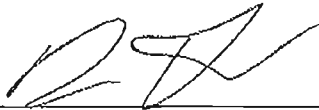
- Exhibit "A" - Scope of Services
- Exhibit "B" - Compensation
- Exhibit "C" - Key Personnel

IN WITNESS WHEREOF, City and Consultant have caused this Agreement to be duly executed the day and year first above written.

CITY OF RIVERSIDE, a California
charter city and municipal corporation

IMS INFRASTRUCTURE MANAGEMENT
SERVICES, LLC., an Arizona limited liability
company authorized to do business in California

By: _____
City Manager

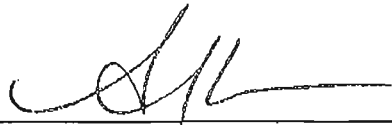
By:  _____

Derek Turner
[Printed Name] CEO

Attest: _____
City Clerk

[Title]

Certified as to Availability of Funds:

By:  _____

By: Kristie Thomas
Chief Financial Officer

[Printed Name] Amy Blinson

[Title] Secretary

Approved as to Form:


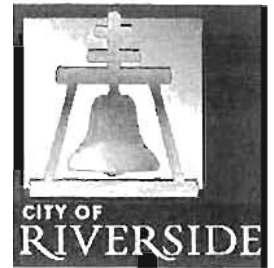
By:  _____
Ruthann Salera
Deputy City Attorney

EXHIBIT "A"

SCOPE OF SERVICES

IMS

Infrastructure Management Services



**Technical Proposal for
RFP #2026 Pavement Management Program
Annual Services (2020-2025)
Friday, July 17th, 2020**

**City of Riverside
Public Works Department
3900 Main Street
Riverside, California 92522**

8380 S Kyrene #101, Tempe, AZ 85284 P: (480) 839-4347 F: (480) 839-4348 imsanalysis.com

Consulting | Engineering | Data Collection | Software



Infrastructure Management Services

8380 S Kyrene Road, #101

Tempe, AZ 85284

(480) 839-4347

imsanalysis.com

July 17th, 2020

City of Riverside
Public Works Department
3900 Main Street
Riverside, California 92522

Reference: RFP #2026 for Pavement Management Program Annual Services (2020-2025)

Dear Evaluation Committee:

IMS Infrastructure Management Services is pleased to submit this proposal regarding the above referenced project to the City of Riverside. Our 35 years of pavement and asset management experience have led our firm to become International leaders in the provision of data collection methodologies and software configuration. With our sole focus on pavement and asset management services, the City of Riverside will acquire quality data, exemplary service, and reliability that define our commitment. IMS has the necessary staff, availability, and equipment to complete the intended scope of work. IMS has recently been awarded projects for the nearby Cities of Long Beach, Fontana and Irvine, which will utilize our automated data collection equipment. IMS has included a separately uploaded file for our pricing, which will remain valid for a period of ninety (90) days. IMS would like to acknowledge receipt of addendum #1 released on July 2nd, 2020. IMS agrees to enter into an Agreement with the City without exceptions to the City's standard agreement.

The official contact person for any questions regarding the IMS proposal is:

Jim Tourek – Client Services Manager

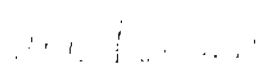
IMS Infrastructure Management Services, LLC 8380 S Kyrene Rd. Suite 101, Tempe, AZ 85284

Phone: (480) 462 4030 Fax: (480) 839-4348

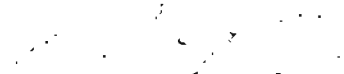
Email: jtourek@imsanalysis.com

We want to thank you for the opportunity to assist the City with its pavement management needs. Based on careful review of the project scope, we are confident that we can provide the City with the requested services in a cost effective and time efficient manner that will provide a return of substantial savings. Thank you for your time and consideration.

Regards, IMS Infrastructure Management Services



Jim Tourek
Client Services Manager



Derek Turner
CEO/Firm Principal

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1.0 IMS APPROACH TO THE SCOPE OF SERVICES

1.1 EXECUTIVE SUMMARY

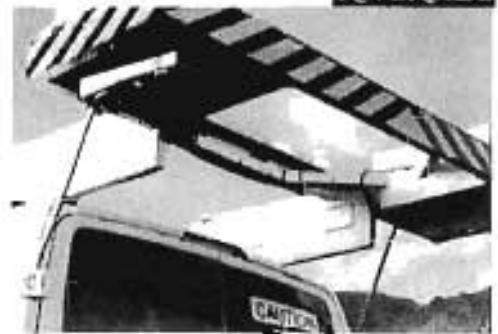
Since 1985, IMS Infrastructure Management Services (IMS) has operated as the premier pavement and right-of-way (ROW) asset management firm in California and across the United States. IMS is a dedicated pavement management consulting firm that operates a fleet of advanced mobile data collection vehicles equipped with millimeter level scanning devices called the Laser Crack Measurement System 2 (LCMS2). Our team completes over 100 pavement and asset management implementations across North America annually, and we stand second to none in our ability to establish cost-effective maintenance management programs for large and small agencies alike.

While IMS has a large national footprint, we also have a local mindset resulting from pavement management assignments with Pasadena, Temecula, South El Monte, Fontana, Long Beach, Beverly Hills, Anaheim, San Luis Obispo, California Department of Water, and many more throughout California. Additionally, IMS has recently been awarded three local agency pavement management assignments: Long Beach, Irvine and Laguna Beach.

As a result of our experience across the United States, the IMS team has an unparalleled understanding of California roadway conditions, ASTM D6433 protocols, software configuration, enhanced customized prioritization techniques, and the City's desire to develop a world-class pavement management program. The data will then be harnessed to develop comprehensive multi-year street rehabilitation plans that optimize pavement quality and minimize annual expenditures.

The IMS team will ensure the Lucity deliverable provided to the City maximizes available resources by utilizing defensible and objective pavement performance data that has been designed around the ASTM D6433 data collection protocols. IMS is a leader in the field of automated pavement condition assessments and this ensures that the data being collected by IMS will be aligned with all reporting guidelines for ASTM D6433. IMS has a unique understanding of the City's pavement management program, having been awarded the project in 2016. IMS led the implementation of the Lucity software and is proposing the same team and methodology for the 2020-2025 project. IMS will work with HR Green for the 2% walking surveys required in the RFP.

IMS
Infrastructure Management Services



PROPOSAL HIGHLIGHTS

Innovative and objective approach to ASTM D6433 data collection through LCMS2 technology.

Integration with the Lucity software and updates to the analysis operating parameters as they relate to City-defined priority factors, performance curves, prioritization matrices, project sizes, rehabilitation candidate selection optimization (cost of deferral), GIS integration/linkage, and new features available with the most current version.

Collaboration with City staff and an iterative analysis process designed to fine-tune the results to meet the City of Riverside's specific level of service needs.

Fully automated and completely objective process for classifying and measuring data, resulting in the most effective pavement condition assessment for the City of Riverside.

Seamless analysis enhancements that can include IRI, structural integrity, selection optimization, and a full suite of rehabilitation activities.

1.2 UNDERSTANDING THE SCOPE OF WORK

The IMS team will work directly with the City's Project Manager to confirm the final scope of services, deliverable expectations schedule, and the overall milestones for this project. IMS works with each client on a one-to-one basis, as we understand each City has unique goals and objectives related to the implementation of a comprehensive PMP. Our team approach to project management will ensure that the City of Riverside not only acquires quality ASTM D6433 condition data, but it also retains a long-term consultant that can adapt to the City's evolving needs. The IMS planned project innovations summary:

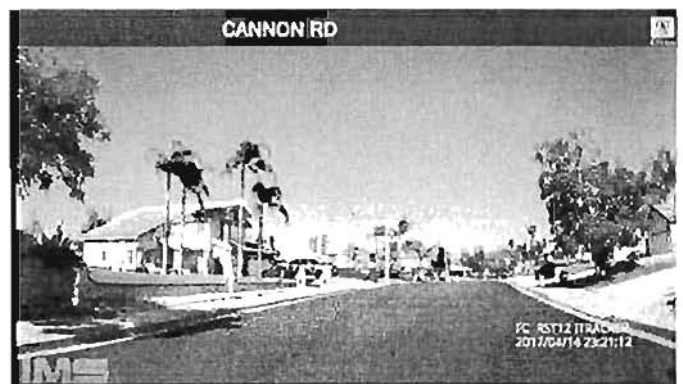
- Objective laser-based cracking, rutting, roughness, bleeding, pothole and geometric surveys.
- Advanced RST LCMS2 equipment and Engineers.
- Up to four views of high definition (4112 x 3008) digital imagery linked to the City's GIS.
- Flexible industry standard data outputs (Excel, Access, shape files, geodatabase, KML/KMZ).
- Optional browser-based video and data logger that leverages HTML 5.
- Rear-facing camera to eliminate double pass testing roadways for asset inventories.

Street Network Inventory & GIS Integration – The City of Riverside street network consists of approximately 875 centerline miles of paved streets. IMS will perform a linear pavement distress survey on 100% of the paved roadway network length over the course of the 5-year contract. IMS will survey 1/3 of City arterial roadways annually from 2021-2023, 1/4 of the City collector roadways annually from 2021-2024, and 1/5 of the City locals and alleyways annually from 2021-2025, resulting in 200 centerline and 246 test miles each year. While the LCMS2 RST will validate roadways' lengths in the field, IMS also validates all segment lengths and widths using aerial photography prior to the field data collection. Additionally, IMS will perform deflection testing on the arterial and collector roadways from 2021-2025.

IMS will begin the project by adopting the City's existing pavement database and GIS in an effort to prepare the survey inventory for field data collection. New roads will be added and the City's pavement inventory will be reviewed to ensure it meet pavement management requirements. The IMS surveys are tightly coupled with the City's existing GIS environment resulting in a seamless transition of data that is linked to a unique identifier in the City's GIS.

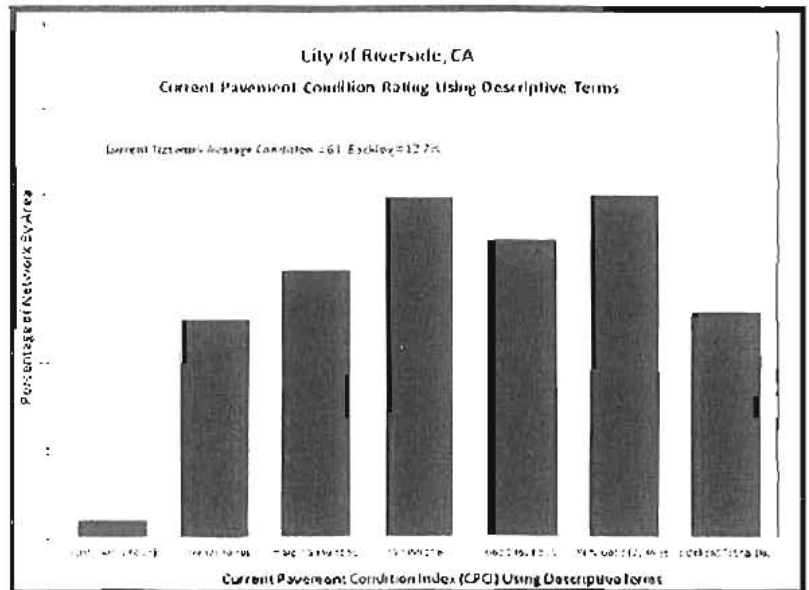
Automated Pavement Distress Survey – The Laser RST equipped with the LCMS2 technology is the most sophisticated technology available and will result in an objective ASTM D6433 survey that maintains the continuity of the legacy data collection protocols. The LCMS2 is a high-speed laser scanning device with a 1-millimeter resolution, meaning it deploys a continuous scan of 3,992 laser points across 13 feet of pavement. The onboard processing software amplifies its capabilities by analyzing pavement elevation (range and intensity) and automatically identifying cracking, rutting, roughness in the form of IRI, potholes, and bleeding. Additionally, IMS will utilize a sub-consultant, HR Green, to complete the 2% walking surveys.

Optional HD Imagery – IMS can utilize up to four GPS-referenced HD camera views (4112 x 3008) for our QA/QC program, optional ROW asset inventory development, virtual drives, and/or other supplemental image deliverables. For the City of Riverside, IMS will utilize at least two HD cameras that will be proofed out prior to data collection. IMS uses a minimum of two camera angles for our internal QA/QC process. If added to the scope, the City can have imagery as a deliverable at the conclusion of the project. As an optional service, images can be delivered via a hyperlinked shapefile and hard drive. IMS also has a web-hosted data viewer for virtual drives.



Subsurface Distress Investigations - To assess the subgrade strength of the City of Riverside's roadways, a Dynaflect Device can be utilized for Asphalt and Concrete roadways in accordance with ASTM standards. While deflection testing can be conducted on all roadways, generally IMS recommends that network-level testing be completed on the high traffic routes such as arterials and collectors. Deflection testing is typically completed at least once in each direction on every street segment (approximately every 500 feet, minimum one per section) along the outside lanes of the roadway.

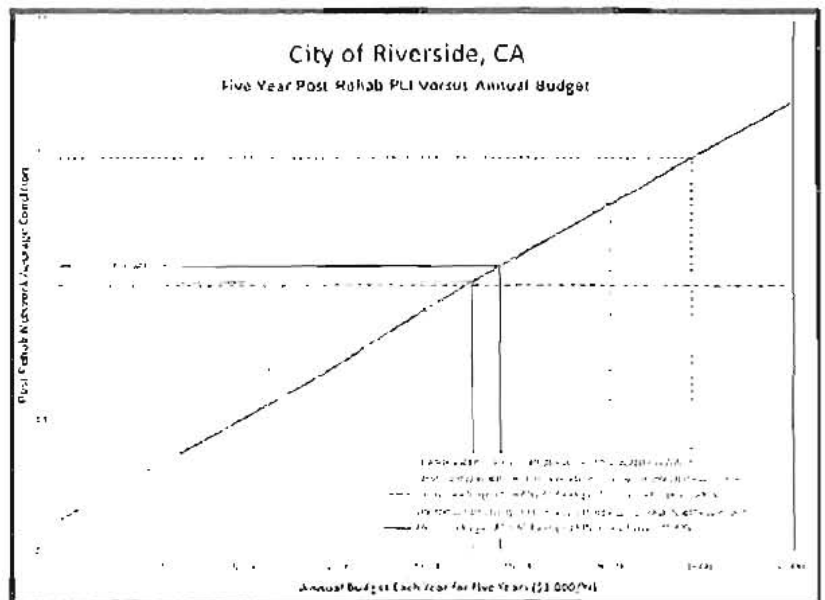
Lucity Data Format & Delivery - The draft condition data (prior to Lucity load) will be delivered to the City in an easily navigable Excel spreadsheet (or database), complete with graphs and descriptive terms such as Good/Fair/Poor. The ASTM D6433 extent and severity distress data is also aggregated into a comprehensible 0-10 index to assist in data review. The condition data is delivered as a geodatabase, a series of shape files, or even a Google Earth KML/KMZ file to ensure City staff comfort with the data outputs. Once the City is comfortable with the attributes and the data, the geodatabase is loaded into the appropriate Lucity Street and Comm databases.



Lucity Pavement Analysis Configuration, and Budget Development - As a preferred data collection provider and Lucity implementation team, IMS is also fully capable of updating the operating parameter (performance curves, prioritization, etc.) configuration of the City of Riverside's Lucity pavement management system and can develop a five-year pavement management plan (PMP) that targets City-maintained roadways.

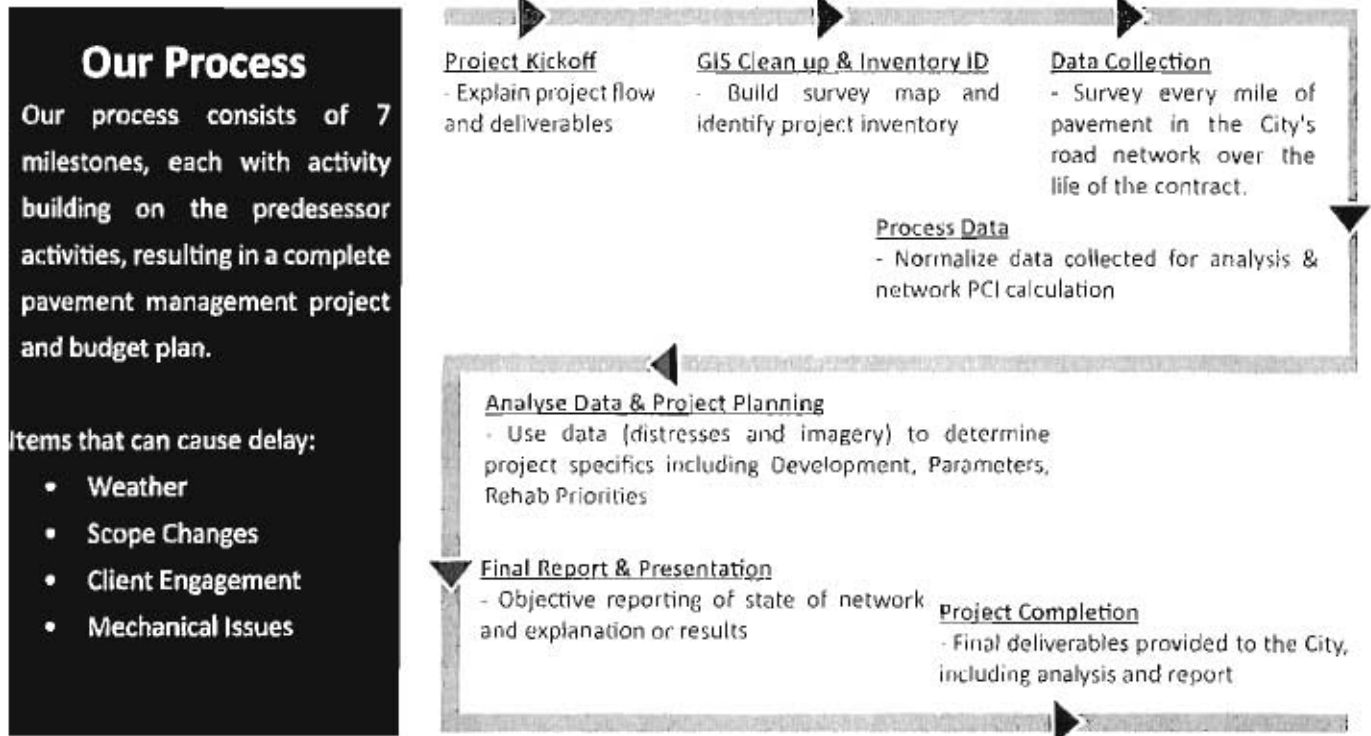
Multi-Year Pavement Management Report & Optional Council Presentation - With the analysis complete and approved by City staff, IMS will aggregate the information into a bound report that reviews the concepts of pavement management, PCI calculations, condition results, network value, operating parameters of the analysis, budget scenarios, and 5-year pavement management reports. The analysis and report will go through several iterations of review before being finalized and presented to City staff.

IMS can also provide an onsite council presentation/workshop that educates elected officials on the benefits of pavement management and preventative maintenance. In addition, an IMS presentation reviews the results of the survey in an easy to understand manner such that all attendees can follow the logic of the project without having to be an expert. The idea is to simplify pavement management, not make it needlessly complicated and difficult to understand.



1.3 IMS WORK PLAN

Over the course of implementing and collecting roadway and asset data for well over 1,000 transportation and municipal assignments, IMS has developed a logical sequence of activities to effectively obtain the greatest efficiency for each project. IMS will use a series of Task Activities and Milestones to define a work plan and then assign appropriate resources to fulfill the contractual requirements.



For this assignment, we have developed seven milestones as follows:

1. **Project Kickoff** – This task will set the tone for the overall assignment and document the scope, deliverables, and formats to ensure the City's comfort with the IMS deliverables and approach.
2. **GIS Cleanup & Inventory ID** – This task will start with acquiring the City's existing Lucity database and GIS linked centerlines. A survey map will be developed to confirm coverage.
3. **Data Collection** – All activities relating to the field surveys will be initiated and completed.
4. **Process Data** – All data collected in the field will be aggregated and processed using IMS tools that have been designed around automated data collection and the ASTM D6433 PCI scores.
5. **Analyze Data & Project Planning** – Existing segments, rehab activities, performance curves, prioritization methodology, and project commitments will be updated.
6. **Final Report & Optional Presentation** – A final report will be developed and all hard copies requested will be delivered to City staff for review and acceptance.
7. **Project Completion** – Upon completion of an iterative analysis process, collaboration with City staff and delivery of the final report, the project will be closed out.

1.4 OBJECTIVE ASTM AUTOMATED DISTRESS ASSESSMENT

The IMS fleet of pavement performance equipment includes seven Laser Road Surface Testers, four of which are outfitted with the LCMS2 technology. IMS also has access to two Dynaflect Devices and four Sidewalk Surface Testers. For this survey, we propose to use an LCMS2 – enhanced Road Surface Tester (RST) coupled with HD digital imagery and GPS capabilities and a Dynaflect device for the subgrade distress investigations. The LCMS2 based RST, with its 2-sensor array is capable of collecting a full suite of ASTM compliant pavement condition data complete with high accuracy GPS coordinates and multiple view HD digital images for both rigid and flexible pavements (in real time). The LCMS2 equipment provides three dimensional high-speed, millimeter-level scanning and pattern recognition analysis. Specialized data processing, using GIS as its backbone, allows the pavement data to be quickly checked for completeness and quality.

The Laser Crack Measuring System 2 (LCMS2) also automatically collects transverse cracking, block cracking, alligator cracking, longitudinal cracking, rutting, potholes, faulting, roughness, geometrics, and texture. The LCMS2 technology automatically detects cracks and minute variances in the pavement surface using a horizontal resolution of 1mm. Thus, the LCMS2 greatly diminishes the subjective nature of PCI data collection performed by image-based surveys or even point lasers.

IMS conducts a modified ASTM D6433 inspection whereby we capture 10 asphalt and 10 concrete distresses by extent and severity. In an effort to capture more information on the pavement, IMS also collects extent and severity data on a single asphalt distress called "Distortions", which represents all bumps, sags, heaves, corrugations, depressions, and swells



MAIN COMPONENTS OF AN AUTOMATED ASSESSMENT

A 2-sensor, 3D LCMS2 array coupled with 2 IMU's (inertial measurement unit) are utilized to measure pavement roughness, rutting, cracking, potholes, bleeding, geometrics, and many other common ASTM D6433 surface distresses.

Automated crack profiling and production of extent-severity based pavement distresses through the 3D crack profile software.

Up to 4 HD digital cameras are mounted for forward, side, rear, and right-of-way views.

Ability to collect dual wheel path roughness to International Roughness Index (IRI) standards using 3D profile technology.

High accuracy Global Positioning System (GPS) receiver with OXTS inertial navigation for geo-locating of pavement and asset information with excellent accuracy.

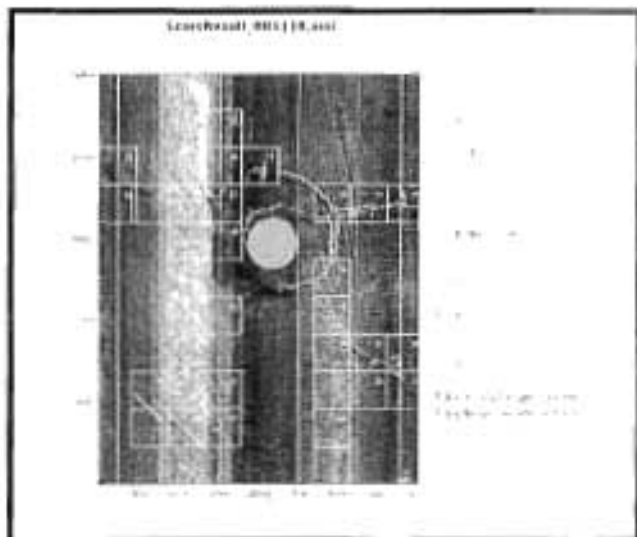
Dual distance measuring instruments to measure linear distances to within +/- 0.5%.

Built-in software and on-board processors to develop roadway inventories, time code integration, and system monitors.

Integrated touchscreen event board used for capturing additional roadway attributes on the fly or to expand the roadway distress data to be captured. The touchscreen is programmed with a mobile mapping device to ensure navigation and routing is as efficient as possible. All inputs can be programmed for acquisition using a standard extent and severity format.

1.5 OBJECTIVE DISTRESS IDENTIFICATION AND QUANTIFICATION

The IM5 Laser Crack Measurement System 2 (LCMS2) is one of the most technologically advanced devices available for pavement performance assessments. The 2-sensor array completes a 3D millimeter-level scanning of the pavement surfaces that pass below the laser array. With a high-speed 1-millimeter resolution, this means the LCMS2 device deploys a continuous scan of laser points (approximately 3,992) across a mere 13 feet of pavement, making it one of the highest resolution pavement laser scanners available. The onboard processing software further amplifies its capabilities by analyzing pavement elevation (range and intensity) and automatically identifying cracking, rutting, roughness in the form of IRI, potholes, and bleeding.

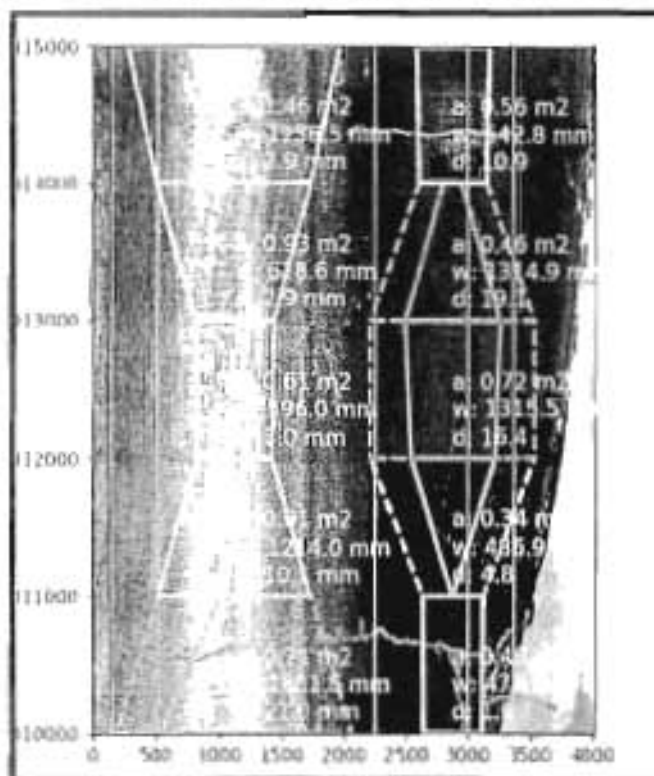


While any engineering firm could deploy the LCMS2 equipment for data collection, processing the information for distress quantification requires a complete understanding of automated technologies, GIS mapping, and distress measurement protocols found in standards such as ASTM D6433. Simply reviewing the LCMS2 cracking vectors (colored cracks) with the human eye dilutes the objectivity of the equipment.

IM5 engineers and technologists have developed a computerized processing application that automatically applies an 18"x18" grid to the LCMS2 downward images (FIS files) and uses pre-programmed geometric algorithms to classify and quantify distresses by type. These automated processing routines result in an unparalleled level of objectivity and efficiency in distress pattern recognition analysis.

The image above illustrates the quantity of several distresses as well as the presence of a manhole, which was automatically scrubbed from the dataset.

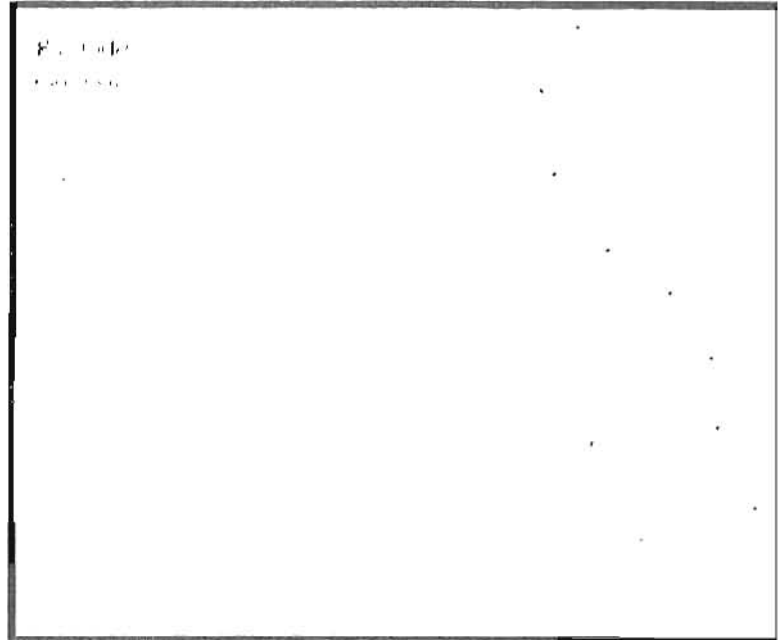
In addition to the auto-quantification and classification of ASTM D6433 distresses, the LCMS2 device also operates as a Class 1 profile device that collects longitudinal profile (in the form of the International Roughness Index) and transverse profile (rutting) using advanced 3D profile laser scanning technology. The system is not subject to vehicle wander like other automated technologies, and it compensates for variation in driver ability. The adjacent images show the processing software's ability to calculate rutting width and depth following the AASHTO Taut Wire methodology. The solid white lines indicate there was no rutting in the left wheel path and that rutting was detected and measured in the right wheel path. Filters can also be applied to account for rehabilitation activity overlap, which can be as much as a ¼ inch depending on the application.



1.6 GIS INTEGRATION & MAPPING WITH LUCITY

The role of GIS in pavement management cannot be overstated. It is a powerful tool that provides the ability to handle vast amounts of data in an efficient manner. Not only does GIS allow an agency to visually plot textural data, it also establishes an easy access portal to the data through an efficient integration with many enterprise asset management applications such as Lucity.

IMS kicks off every Lucity project by completing a review of the City's existing Lucity pavement inventory and the associated linked centerline's that retain a one-to-one relationship. If the two no longer retain a one-to-one relationship, IMS has the team ready to reconcile the GIS and Lucity database in an effort to restore the one-to-one relationship. This requires identifying all of the STNET segments in the Lucity inventory that require realignment with the centerline layer.



The benefit of the IMS team during this review is that we retain over 20 years of experience working with the City's legacy pavement management inventory. In addition, we are business partners with Lucity, who participate in the pavement module updates as subject matter experts. While most of the City's legacy inventory is block-to-block (intersection-to-intersection), there may be some segments that no longer align with the new Lucity inventory, resulting in a many-to-one relationship. If so, IMS will update the Lucity inventory with the current centerline layer.

The data collected by IMS is linked to the existing GIS environment and is supplied as a personal geodatabase, spatial database engine, AutoCAD files, or a series of shape files. IMS collects XY coordinates for all data elements using GPS technology coupled with inertial navigation and integrates with most third-party GIS applications, including ESRI. At a minimum, the GIS supplied by the City should have an ownership attribute, Segment IDs, functional classifications, and contiguous line work, and it should be in a digital format such as shape files and/or personal/file geodatabases. As a supplemental task, IMS can provide "GIS Clean-Up" and "Functional Class Review" activities for the City. This service includes additional GIS development above and beyond standard network referencing activities.

For this assignment, GIS will be used in four these key areas of work:

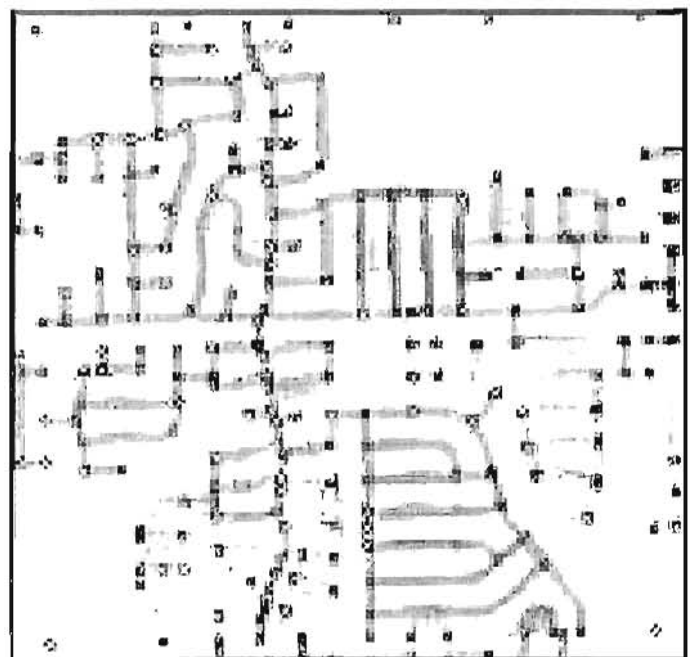
1. GIS will be used to verify the streets to be surveyed and to create the routing maps for use during the field surveys.
2. The survey productivity will be tracked through the plotting of the GPS data collected during the field surveys. This will allow IMS to review all streets that have been covered, identify anomalies in the referencing, and spot missed streets.
3. GIS will be used in processing the distress and inventory data. By plotting the data, we can QA the data and identify data exceptions in addition to proofing out the GIS.
4. Personal geodatabases, spatial database engines, shape and/or KML files can be created for the visual presentation of condition data and analysis results.

1.7 DEVELOPING LOGICAL PROJECTS WITHIN LUCITY

Lucity and a few other select pavement management systems allow the user to develop projects (multiple segments aggregated to form a logical project) that meet the needs of City staff and available funding sources. Developing logical projects is a crucial component of any rehabilitation plan and IMS does so by using a series of constraints related to available funding sources, pavement type, project length upset limits, and the rehabilitation methodology preferred by the City of Riverside staff. In our experience, there are four types of projects that can be successfully developed and configured within the Lucity system as a part of this assignment:

1. **Block to block** – the rehab plan is developed on a block by block basis. This is extremely inefficient in terms of cohesiveness of approach and generally ends up looking like a shotgun blast against the map. This methodology is typically employed by agencies that are extremely underfunded. It is used as a last resort and not very popular.
2. **On-Street** – the rehab plan is created by aggregating like segments to form a homogeneous project, typically $\frac{1}{2}$ to 1 mile in length. All projects stay on a single street and do not cross a major roadway. The smallest length is a single block if it is so different from the adjacent ones, the longest would be 8 to 10 blocks. The length would also be governed by condition – the better the score, the longer the project can be.
3. **On-Street/Side Street** – similar to the on-street plan, this option also picks up smaller side streets as the project passes by them. This is the most popular method. It often combines functional classes such as a small local cul-de-sac is picked up with a collector. The idea is to prevent orphaned segments being left alone and forgotten. In terms of cost-efficiency, it generally is the best. However, projects are selected by need instead of geography. Within a neighborhood, one project could be selected and another deferred.
4. **Neighborhood Based** – this method really only works for fully funded agencies. Under this option all streets within a defined geographical boundary (a neighborhood or some other similar definition) may be blended together to form a single project or linked to trigger at the same time. If blending, all streets must be of the same functional classification and condition – otherwise the analysis fails as there is too wide of a range of condition for a one-size fits all approach. This typically limits the size of the neighborhood that may be aggregated together through the blending process.

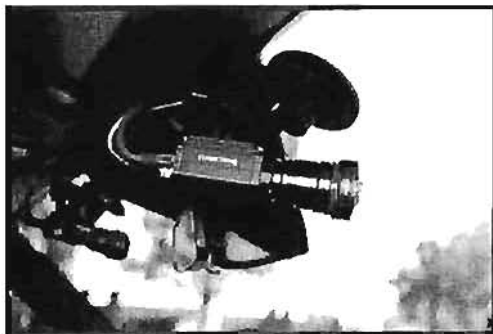
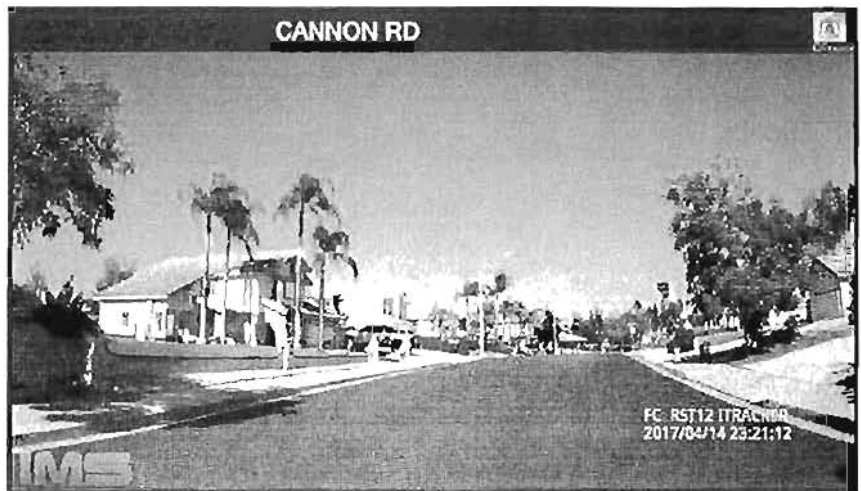
The Lucity application has a feature that allows Supersegments or projects to be “linked” together, such that when one project is selected, all projects that are “linked” to it also get selected in the same year. The benefit of this approach is that each project with a linked group receives the rehabilitation appropriate for their condition and functional class – thus allowing a whole neighborhood to be completed in a single year. The down side is there will be a loss of efficiency as some projects will be selected prior to the need year and there is an increased amount of data management required on the part of the City.



1.8 CAMERAS AND EQUIPMENT CONFIGURATION

The IMS RST can mount up to four HD cameras on the platform, depending on the required views or roadside assets to be inventoried. Prior to commencing the field surveys, our team will confirm the pavement and/or right-of-way views for collection. As an example of pavement image quality, the image to the right illustrates the pavement view from the iCMS2 RST during a recent assignment.

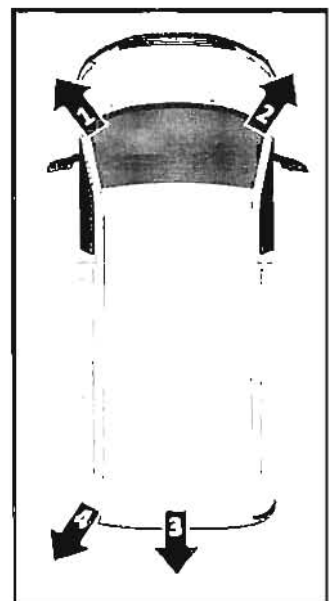
Based on our understanding of this assignment, IMS proposes a configuration of two HD video cameras for our internal Quality Assurance purposes. The camera views will be proofed out at the calibration stage, as it may be desirable to relocate or change the orientation of a camera. If requested, these images linked to the City's existing GIS centerline and provided as a geodatabase with image hyperlinks. The HD imagery is processed and collected in 15-foot intervals. While IMS collects 4K imagery, most agencies do not have access to 4K monitors, thus we compress the imagery to alleviate any storage challenges the City may have.



For this project, IMS will be utilizing AVT Manta G-1236 B/C GigE high-resolution cameras. With these cameras deployed, City staff can rest assured that the image quality will be state-of-the-art, directly integrated into the RST's DMI unit. The AVT Manta cameras are capable of capturing images at 4.112 x 3008 resolution and up to 125 frames per second.

The image below illustrates the proposed camera configuration for this project:

- **Camera 1 – Left Front:** View offers a forward-facing view that is angled toward the centerline of the roadway with the right side of the camera view overlapping with Camera 2 for full coverage.
- **Camera 2 – Right Front:** This angle is used for 180-degree forward view and for right-of-way asset data extraction. The camera is oriented to capture most signs and not too much of the horizon. The left side of the camera view is calibrated to overlap with Camera 1 for full coverage.
- **Camera 3 – Right Rear:** View is oriented to capture a downward pavement view used in the IMS QA/QC process and final engineering review.
- **Camera 4 – Left Rear:** View is oriented to collect reverse-facing signs, markings images, sidewalks, and many other assets on the adjacent side of the roadway



1.9 IMS PAVEMENT ANALYSIS & MULTI-YEAR REPORT

Immediately following the completion of the field surveys, the IMS team will begin processing the pavement distress severity and extent scores in an effort to develop a Pavement Condition Index (PCI) for each roadway segment. The condition results are analyzed by a team of IMS engineers, who then develop the City of Riverside five-year Pavement Management Plan, which will include a Capital Improvement Program (CIP) and Road Maintenance Program. This section provides a brief summary of the functionality of the IMS enhanced analysis in order to emphasize our implementation expertise as well as the abilities and constraints within a pavement analysis.

The purpose of pavement management is to produce cost-effective maintenance programs that maximize available resources and roadway life. By incorporating key components of a cost-benefit analysis into the analysis operating parameters, we can develop a game plan that is optimized to meet the needs of the City of Riverside. In addition, the analysis operating parameters described within this section will be delivered in a comprehensive Excel spreadsheet that includes the segment PCI data, pavement deterioration curves, triggers (Priority Weighting Factors), and then we will prioritize the multi-year plan. The end result is an optimized five-year plan that is open sourced and can easily be managed by City staff.

Field Inspection Data and Pavement Condition Index (PCI)

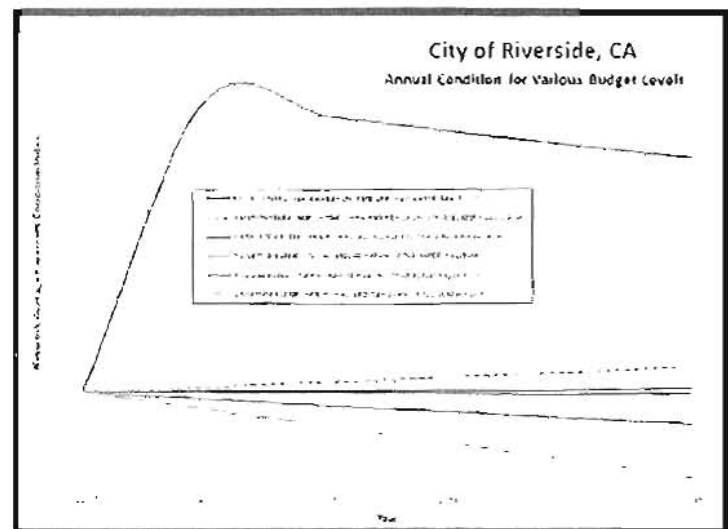
The IMS analysis allows the City to store information regarding their pavements, including surface types, number of lanes, patching estimates, cross slopes, and sidewalk and curb types with replacement estimates. Pavement condition data including surface distress, roughness, and deflection results can be stored and analyzed. Using an in-house Pavement Manager Setup module, we can develop customized condition elements, distress types (load and non-load), Indices (SDI, RI and SI), weightings, and overall PCI calculations.

In addition to the yearly programs, the net impact each budget scenario has on the expected condition of the road network over time can be determined. This budget impact can be illustrated both in terms of the yearly increase or decrease in the average network PCI score, PCI distribution, or % Backlog of roads that were not selected by the budgets. IMS converts the difficult to understand FHWA and ASTM D6433 data to a 0-10 distress rating scale with distress weighted factors (DWF), where $DWF = (\text{Area under D6433 deduct curves}/3000)$.

Modeling and Performance Curves

With an IMS analysis, the City can forecast various budget scenarios to help determine an ideal maintenance and rehabilitation schedule. The IMS approach will help decide what rehabilitation activities should be performed, when and where to perform them, and an ideal budget for the City's system to maintain it at a specific level of service

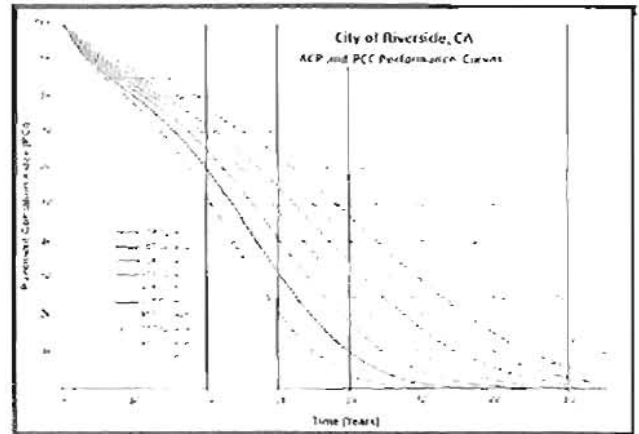
IMS engineers use pavement deterioration models that can be customized to reflect the climatic conditions and structural characteristics of the City of Riverside's road network. As a result, performance curves can be developed on factors such as functional class, pavement type, and subgrade strength.



Rehabilitation Analysis

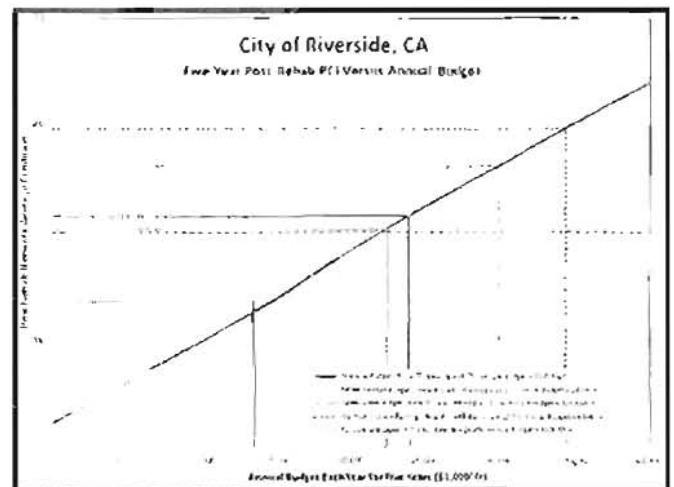
An unlimited number of pavement maintenance and rehabilitation strategies can be defined within our system. An analysis is then run, incorporating the performance curves, set points, filter criteria, and rehab alternatives to identify the overall need in terms of rehab strategies and costs for the City's road network, for today as well as year by year for the next five years.

The IMS approach allows the City to input any number of "what if" budget scenarios and produce prioritized yearly rehab programs based on those funding levels over a five-year analysis period. Typical budget scenarios include Budget \$/Year, Unlimited Budget \$, "Do Nothing" Budget, and a Target PCI Budget.



What is included in an IMS analysis and report?

- Street ownership and inventory/attribute report.
- Present condition ranking – detailed and summary condition data including; Good/Fair/Poor, Load Associated Distresses (LAD), Non-LAD, and project reviews of each street in the network, as well as the network as a whole.
- Fix all budget analysis – this identifies the upper limit of spending by rehabilitating all streets assuming unlimited funding.
- Do nothing analysis – this identifies the effects of not performing roadway rehabilitation projects.
- Steady state rehabilitation life cycle analysis – this identifies the minimum amount of rehabilitation that must be completed in order to maintain the existing level of service over 3, 5, or 10 years.
- PCI and funding levels – what funding will be necessary to maintain a PCI of 75, 80 and 85.
- Plus or minus 50% and other additional runs – additional budget runs are completed at rates of +50% and -50% of the suggested steady state analysis. Up to 10 budget scenarios will be run.
- Integration of capital projects and Master Plans – ongoing and proposed projects that affect roadway rehabilitation planning will be incorporated into the analysis
- Draft five-year rehabilitation and prioritized paving plans – based on need, available budget and level of service constraints; a minimum of three budget runs will be completed.
- Final prioritized paving plan – incorporating feedback from stakeholder departments and utilities, complete with budget and level of service constraints.



1.10 QUALITY ASSURANCE AND CONTROL

Each step in the IMS data collection process has been designed to require the data to pass a certain standard or validation before moving on to the next stage. If the data does not pass, it is returned to the source for correction.



LCMS2 is a Class I profile device that allows for the auto-quantification and classification of most ASTM D6433 distresses. The system is not subject to vehicle wander like other automated technologies, and it compensates for variation in driver ability through the automated detection of pavement edge, curb/gutter, and centerline striping.

In conjunction with the IMS Employee Policy Manual, all field operators are required to implement the following field safety procedures when operating the RST survey vehicle.

- All IMS RST vehicles must be fitted with seat belts, safety lights (flashing and/or strobe), vertical guide sticks on the front bar, "Caution" sign placard, and fire extinguisher.
- Daily RST "circle checks" are to be conducted to ensure equipment maintenance.
- RST is to travel at or near posted speed limits (over 15 mph) so as not to impede traffic and the survey is conducted in the curb or shoulder lane. Lane changes are only made when absolutely necessary.
- Avoid collecting data during high peak times on heavily traveled roadways.
- Cease survey operations during rain/snow/cold (less than 32°F) or other poor weather conditions

Quality Control and Quality Assurance Program

The strength of the LCMS2 platform is best demonstrated by its ability to collect and verify a wide array of digital images, GPS coordinates, and pavement distresses in a single pass. Through the integration of a LCMS2 laser array and the GPS system – the data collection vehicle can collect the required data elements continuously while also performing quality assurance.

At the start of the survey:

- A Project Information Form (PIF) will be created that details the survey scope and data to be collected. The project protocols will be documented and approved.
- The PIF will be compared against the RST set up and the data collection protocols.
- Equipment is calibrated.
- Field crew meets with the client to review the maps and overall project.

The summary of the IMS QC plan is as follows:

Inventory Preparation – a coverage map is prepared for review to ensure all roadways desired for survey are captured. This map is eventually loaded into the RST for survey.

Data Collection – the equipment is calibrated on a daily basis and it is also paused over "events" that would cause erroneous data to be collected (i.e. railroad tracks, speed humps, valley gutters, etc.). A field survey daily report is also sent to the Crew Chief and reviewed by a Senior Technologist for approval.

Processing Filters – processing tools are extensive and allow for erroneous data (i.e. manholes, curb lines, tool marks, rehab activity overlap, striping, macrotexture for intended rehab designs, etc.) to be filtered out of the data stream.

LCMS2 Image Review – all 16-foot LCMS2 image and cracking vectors are reviewed by a qualified Inspector in the office to ensure there are no discrepancies in the data stream or the auto-classification and quantification of distress densities.

Project Manager Review – before any data enters the analysis phase, the assigned Project Manager, Dave Bratton, reviews the forward HD imagery collected in the field and compares it to the processed PCI Data. If it does not pass the QC tolerance test, it is sent back for further processing.

On a daily basis:

- Equipment is calibrated and daily reports completed.
- All sensors are continually monitored to ensure they are receiving data in specification.
- The LCMS2 Crew Chief and operator also manually monitors the digital image, GPS, distress recorder and rut data.
- Production is tracked and records of coverage are taken. Each street is noted on the inventory and map, as well as through GPS and assignment of the LCMS2 van number.
- A select roadway section (control) is re-surveyed to ensure image quality and repeatability.
- A precision verification plan and corrective action plan is followed as necessary.
- All data is backed up and sent for processing.

At the end of the survey:

- Field crew meets with the client again to review the maps and overall project.
- Data production and coverage is reviewed to ensure all streets have been captured.
- Calibration and adjustments if a 30% difference is noted.

After data collection:

- The data is scrubbed and processed for anomaly reduction.
- The data is verified by the Project Manager, Dave Bratton.
- The detailed section level data is aggregated into the approved segmentation for client review.
- The final deliverable format is populated and undergoes a QA process performed by the Project Principal.

Quality Control Routines

IMS has developed a QA/QC management program that is suited for our LCMS2 technology and internal data management procedures. The IMS crew will also complete our daily QC routines for the LCMS2 van.

- **Calibrations & Demo:** All digital camera, GPS, DMI units, LCMS2 laser arrays and switch-input keys are calibrated prior to data collection as well as daily during the project.
- **Daily Survey Control:** Each day, selected roadway sections will be re-tested to confirm repeatability of the data. Camera and video quality assurance checks are performed.
- **Validations:** Range limits and data validation routines are integrated in the on-board processors and post processing routines. Validation checking routines monitor "out of range" data, extraneous data, and missing data.
- **Inventory & GIS Review:** All data is plotted and compared to Riverside's GIS. This will identify new roads, missed roads, duplicates and non-City roads.
- **Length Reviews:** All section lengths are compared against published values to identify survey under/over runs.
- **Test of Reasonableness:** IMS will process and compare LCMS2 data and digital image data at specified reporting interval; we will also compare individual distress and overall condition ratings. Identify non-compatible data locations and reprocess accordingly. Site visits to select sections will also be part of the test of reasonableness.

1.11 OPTIONAL SUBSURFACE DISTRESS INVESTIGATIONS

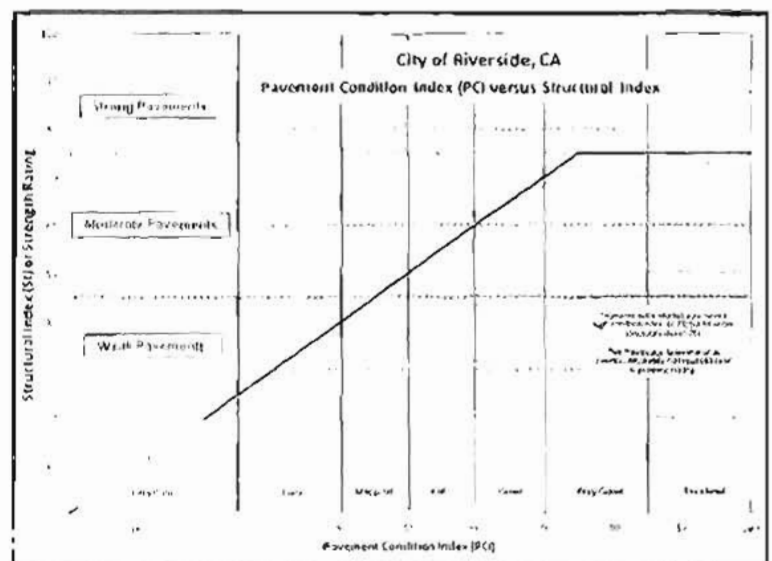
Subsurface distress investigations (Deflection Testing) are a valuable tool to assess the sub-grade condition of a roadway. For this project, IMS can perform deflection testing on the arterial network IMS will integrate the Structural Index (SI) as a component of each roadways final PCI score and as a rehabilitation activity selection constraint. The latter would ensure a roadway does not receive too light of a treatment as a result of its known structural condition.



To assess the subgrade strength of a roadway, a Dynaflect Device would be utilized for Asphalt and Concrete roadways in accordance with ASTM standards. While deflection testing can be conducted on all roadways, generally IMS recommends that network-level testing be completed on the high traffic routes such as arterials and collectors. Deflection testing is typically completed at least once in each direction on every street segment (approximately every 500 feet) along the outside lanes of the roadway. Testing shall be altered to an inside lane when it appears to be in a worse condition than the outside lane of the segment based on site observations. IMS will record the readings of a series of geophones for inclusion in the overall pavement condition rating. These readings will then be used to determine the pavement strength, load transfer capabilities, and identify properties of the base and sub-grade.

Upon completion of the deflection survey, a structural analysis is performed. Dynaflect's apply a known load to the pavement and measure the pavements response to the load. The structural adequacy of a road is expressed as a 0 to 100 score with several key ranges: roadways with a Structural Index greater than 75 are deemed to be structurally adequate for the loading and may be treated with lightweight surface treatments or thin overlays. Those between 50 and 75 typically reflect roads that require additional pavement thickness; and scores below 50 typically require reconstruction and increased base and pavement thickness.

The adjacent graph presents a sample structural adequacy plot of a recent client's roadway network against its average pavement condition. The diagonal blue line separates roadways that are performing above expectations (above the line), from those that are not, (below the line). The roadways that fall in the blue shaded box are those with a high PCI score (above 75) yet are exhibiting low structural characteristics. This is typically the result of insufficient base and structural materials during the original construction, the application of overlays that were too thin, or an inadequate amount of structural patching during rehabilitation.

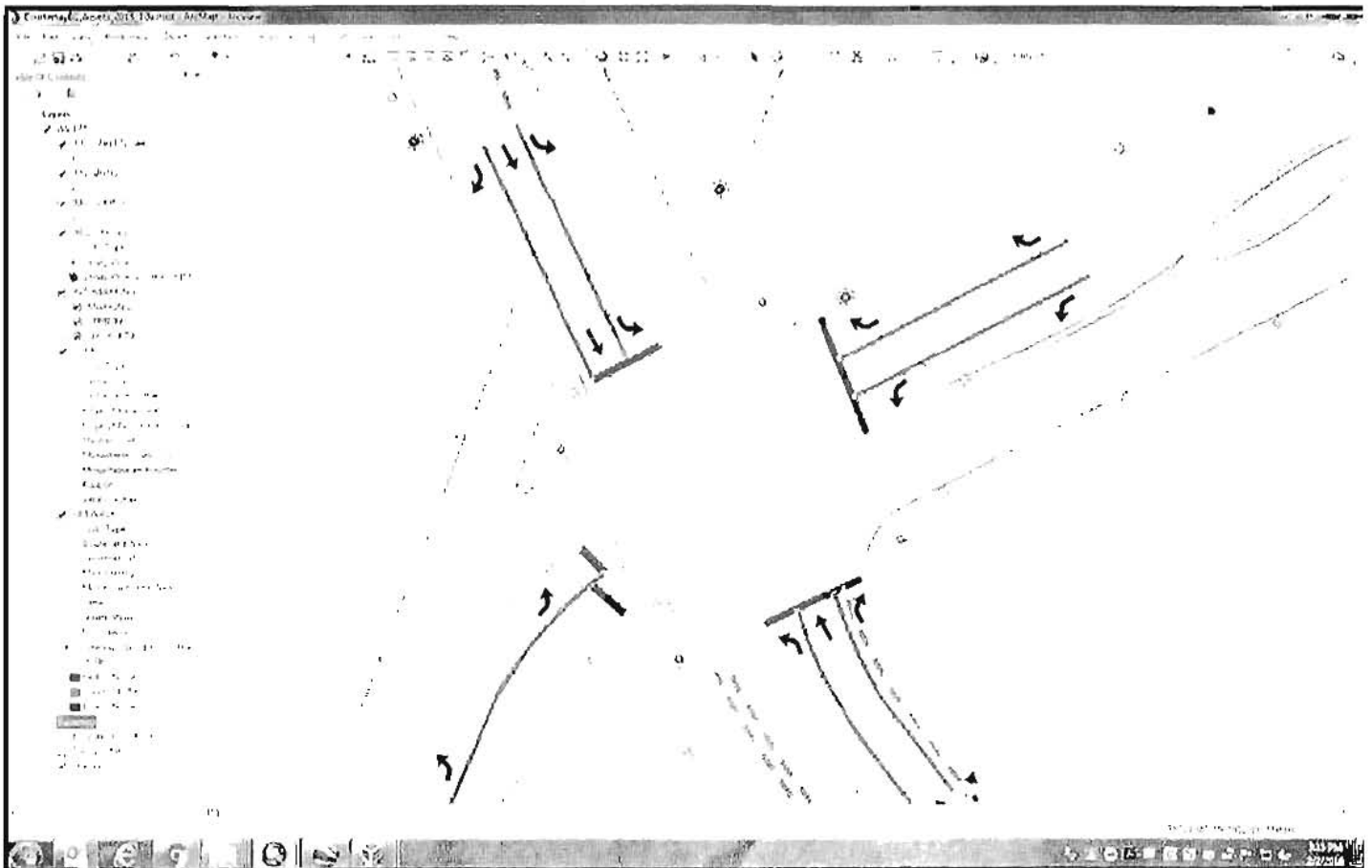


1.12 OPTIONAL RIGHT-OF-WAY ASSET INVENTORIES

The IMS Laser RST uses high-end GPS coordinate data and HD digital cameras positioned so that all assets/attributes requiring data capture are visible with the front, side, and rear cameras. For the City of Riverside, IMS can collect information for traffic signs and support, curb ramps, curb, gutter, striping, markings, traffic signals, sidewalks, ADA ramps, ditches, and virtually any other asset that can be identified in the imagery. ROW asset inventories are supplemented with air photos and GIS to ensure strong positional accuracy. The IMS technology is an open architecture system that allows virtually any type of asset to be defined for collection of location, attribute, and condition data. Once an asset is observed, the operator toggles to the individual record input screen and proceeds to input the appropriate attribute and associated information. Wherever possible "pick lists" are employed to streamline the data entry function and provide uniform, high quality data. IMS confirms the feature attributes to be collected with the client prior to data collection.

The images and GPS data are merged on a frame-by-frame basis. The images are then post-processed using a specialty piece of GIS and image viewing software. Using RST imagery, the existing centerline GIS, and aerial photography, IMS spatially plots each right-of-way asset in its real-world location.

Prior to commencing the optional ROW asset inventories, a document called the Master Asset List (MAL) will be developed. The MAL defines what assets or inventory items are to be logged and what attributes will be extracted. The MAL also defines the methodology for condition rating each asset. The image below depicts an IMS asset inventory of sidewalks, ADA ramps, pavement striping and markings, traffic signs, and crosswalks. The end deliverable was a Personal Geodatabase containing each asset and its corresponding attributes.

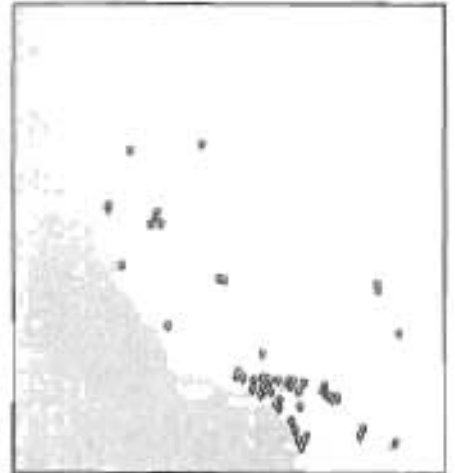


3.0 IMS SUMMARY OF QUALIFICATIONS AND EXPERIENCE

3.1 PROJECT PROFILES

California is home to a long list of IMS clients. Our projects take us to all corners of the United States and Canada, from Key West, Florida to Vancouver, British Columbia. IMS performs more than 100 pavement management projects annually and on all assignments, the IMS team utilized our LCMS2 Road Surface Tester (RST) to perform a network-wide pavement performance evaluation. While some firms perform sampling based or windshield surveys on a select portion of the network, IMS surveys 100% of the roadway length in a linear manner.

Our philosophy is based on the provision of quality pavement condition data for the implementation of multi-year pavement management plans. As illustrated in the map above, our extensive reach throughout California provides IMS with a unique understanding of the pavement condition in for cities of similar size IMS utilizes



this knowledge in combination with local maintenance practices and capabilities to develop and provide comprehensive 5-year maintenance management programs. IMS is the only pavement management consultant who has enough local, regional, and national expertise to offer such a wide-ranging comparison across multiple software platforms for PCI reporting

Recent ASTM Projects in Southern California:

City of Riverside, CA

The Lucity implementation was delayed until 2020, but the ongoing project started in 2016. IMS was awarded this StreetSaver project; the City later switched to the Lucity software. The RST performed the surface condition surveys on 1,061 miles of roadway. IMS also mobilized a Dynaflect device to collect deflection information on 288 test miles of major roadways. The project included detailed rehabilitation analysis, GIS Integration, HD images, Lucity software, and reporting. IMS developed the City's curb and gutter, sign and support, and sidewalk and ADA compliance inventories.

City of Temecula, CA

The Lucity implementation was delayed until 2020, the originally award in 2017 through competitive bid. The project consisted of a surface condition assessment of approximately 400 survey miles that also included deflection testing on the major roads. IMS performed a cost benefit analysis through the IMS Easy Street Analysis spreadsheet. The City is currently implementing the Lucity pavement and assets modules and incorporating ROW assets collected in 2017. In 2020, the City contacted IMS to utilize the HD imagery collected in 2017 to perform a sidewalk assessment. IMS engineers also logged presence of City sidewalks, as well as a good, fair, poor condition distinction.

City of Cerritos, CA

In 2007, 2012, and 2017, IMS tested approximately 173 miles of roadway in Cerritos using the RST equipped with lasers, HD digital cameras, touch screen event boards, and inertial navigation. The data was processed and formatted for loading into PAVER. IMS also enhanced upon a typical PAVER analysis by incorporating cost benefit analysis through the IMS Easy Street Analysis spreadsheet. The spreadsheet has allowed City staff to maximize the benefit of their pavement management program. All results were seamlessly loaded back into PAVER at the end of the project. IMS staff included PAVER training for up to one year after each round of data collection

3.2 LUCITY REFERENCES

CONTACT:

City of Pasadena
Ara Maloyan, P.E.
Director of Public Works
(626) 744-4233
amaloyan@cityofpasadena.net

Most Recent Contract Award**Date:**

2020 Software Implementation

CITY OF PASADENA, CA Awarded in 2018 and wrapping up in 2020, IMS was selected to perform an automated pavement condition assessment using the Laser RST on 420 test miles of roadway for the City of Pasadena. The data was then processed and formatted for loading to the City's new Lucity software that was recently put in place by the City. Development of the pavement management plan and budgets were completed using the City's rehabilitation strategies, unit rates, priorities, and pavement performance curves.

CONTACT:

City of Carlsbad
Jonathan Schauble
Associate Engineer
(760) 602-2762
jon.schauble@carlsbadca.gov

Most Recent Contract Award**Date:**

2015

*Pending proposal for 2020

CITY OF CARLSBAD, CA In 2010 and 2015, IMS completed a full pavement management implementation. The Laser RST was utilized on 504 (>2-pass on major arterials) test miles of roadway and the condition data was input into the Lucity software. A unique comprehensive analysis was completed to deliver a report to the City including a 5-year plan, budget scenarios, rehab strategy review, and configuration of operating parameters. The 2010 had some GPR testing; the 2015 had benches & trash/ recycle receptacles databases. Currently, IMS has a pending proposal for a 2020

CONTACT:

City of Long Beach
Onofre Ramirez
Project Manager
(562) 570-6183
onofre.ramirez@longbeach.gov

Most Recent Contract Award**Date:**

2020

CITY OF LONG BEACH, CA IMS was first awarded the pavement management program update for the City of Long Beach in 2013. The project consisted of pavement condition surveys for over 900 test miles that included the delivery of a sidewalk and ADA ramp inventory, HD digital images and deflection testing on the arterial roadways. We also completed a software conversion from PAVER to Lucity, as the City desired a more robust analysis tool for asset management. The IMS team developed individual pavement analysis studies and delivered the results for the City's nine Districts. IMS was recently awarded another project earlier in 2020.

CONTACT:

City of Fontana
Kieth Kramer
Public Works Director
(909) 350-6644
kkramer@fontana.org

Most Recent Contract Award**Date:**

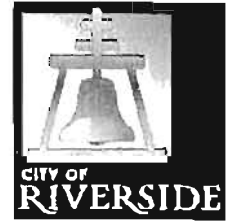
2020 Awarded

CITY OF FONTANA, CA Since 2004, IMS has completed five Citywide pavement condition surveys complete with detailed analysis and rehabilitation plan development. The 650 test miles of pavement condition data included surface distress and roughness collected with the Laser RST and arterial roadway structural data using a Dynaflect. The Lucity pavement analysis module was used for the report. All projects included GIS integration, lane mile reporting and digital images. The 2006 and 2012-13 projects also included right of way asset data collection, while the 2013 project included a small asset data collection assignment. The 2015 surveys included inventories for update condition, sidewalks, and ADA ramps. Each round of data collection was completed with delivery of a bound written report. IMS currently has a pending contract for a 2020 resurvey.

5.0 COST

The project will be completed using a combination of unit rate-based activities and lump sum activities. The spreadsheet presented below is based on the IMS work plan and deliverables. It represents a realistic budget to complete the work, and we are confident we can maintain an on-time, on-budget approach to the assignment and is intended to apply to both contacted cycles. Please find the IMS cost proposal in a file separately uploaded Planetbids.

EXHIBIT "B"
COMPENSATION



**Cost Proposal for
RFP #2026 Pavement Management Program
Annual Services (2020-2025)
Friday, July 17th, 2020**

**City of Riverside
Public Works Department
3900 Main Street
Riverside, California 92522**

8380 S Kyrene #101, Tempe, AZ 85284 P: (480) 839-4347 F: (480) 839-4348 imsanalysis.com

Consulting | Engineering | Data Collection | Software



Infrastructure Management Services
8380 S Kyrene Road, #101
Tempe, AZ 85284
(480) 839-4347
imsanalysis.com

June 19th, 2020

City of Riverside
Public Works Department
3900 Main Street
Riverside, California 92522

Reference: RFP #2026 Pavement Management Program Annual Services (2020-2025)

Dear Evaluation Committee:

IMS Infrastructure Management Services, LLC is pleased to submit our cost proposal for the City of Riverside project. The following page documents the requested tasks. The fee structure is presented with unit base costs where necessary along with mileage rates. All pricing is exclusive of any City, State or Federal taxes, levies or duties. These fees are based on the IMS work plan and deliverables as presented in our Technical Proposal. The IMS proposal is valid for ninety (90) days. We want to thank you for considering the IMS team as a viable solution for your pavement management program. Based on careful review of the intended City of Riverside project scope, we are confident that we can exceed the City's expectations in a cost effective and time efficient manner that would provide a substantial savings to each agency. Thank you for your time and consideration.

The official contact person for any questions regarding the IMS proposal is:

Jim Tourek – Client Services Manager
IMS Infrastructure Management Services, LLC 8380 S Kyrene Rd, Suite 101, Tempe, AZ 85284
Phone: (480) 462 4030 Fax: (480) 839-4348
Email: jtourek@imsanalysis.com

We want to thank you for the opportunity to assist the City with its pavement management needs. Based on careful review of the project scope, we are confident that we can provide the City with the requested services in a cost effective and time efficient manner that will provide a return of substantial savings. Thank you for your time and consideration.

Regards, IMS Infrastructure Management Services

Jim Tourek
Client Services Manager

Derek Turner
CEO/Firm Principal

This budget is the breakdown of fees associated with the annual partial network survey through fiscal year 2025.

IMS ANNUAL COST*					
TASK	DESCRIPTION	Quant	Units	Unit Rate	Total
1	Meetings (1 Minimum including Kickoff and Council Presentations) Includes any travel expenses	4	Per Meeting	\$2,000.00	\$8,000.00
2	Evaluate GIS Network for updates and determine proposed annual survey areas. Includes evaluating previous PMP report and recommending options on how to improve	1	Lump Sum	\$7,428.00	\$7,428.00
3	Complete Network Condition Surveys (23% Arterials, 25% Collectors, 20% Locals/Arterys)	1	Lump Sum	\$36,000.00	\$36,000.00
4	Evaluate Maintenance and Rehabilitation Strategies for current/future years.	1	Lump Sum	\$6,221.00	\$6,221.00
5	Funding Analysis & Developing Workplans for current/future years	1	Lump Sum	\$8,000.00	\$8,000.00
6	Training (1 Onsite Meeting)	1	Per Meeting	\$3,750.00	\$3,750.00
7	Final Report	1	Lump Sum	\$7,000.00	\$7,000.00
* Cost Proposal shall provide line item cost per year and total cost over the 5-year agreement				Each Year:	\$76,390.00
				5-Year Total:	\$381,995.00
Alt.	Remove Walking Re-Surveys (Per Year)	4	CL Mi.	(\$2,100.00)	(\$8,400.00)
				Each Year:	\$67,999.00
				5-Year Total:	\$339,995.00
	Optional Dynaflect Mob. & Testing (Partial Annual: 20% Arterials, 2-pass)	5	EA	\$11,960.00	\$59,800.00
Alternate Total w/Remove Walking Re-Surveys & Add Dynaflect (Per Year)					5-Year Total: \$399,795.00

On the following page IMS has included value added services with a further breakdown of the base fees.

Riverside FY2020 - 2021: Partial Annual Network Pavement Management Program Update

Annual: 33% Arterials/ 3 yrs., 26% Collectors/ 4 yrs., 20% Locals+Alleys/ 5 yrs. (w/ Deflection Testing on same Arterials & Collectors)

Task	Activity	Quant	Units	Unit Rate	Total
Project Initiation					
1	Project Initiation	1	EA	\$3,000.00	\$3,000.00
2	Network Referencing & GIS Linkage (200 CL Miles per Year)	246	T-Mi	\$12.00	\$2,952.00
3	Network Inventory Checks & Survey Map Development	246	T-Mi	\$6.00	\$1,476.00
Field Surveys					
4	Mobilization/Calibration (Partial Network/Annual: 33% Ar., 25% Coll., 20% others)	1	LS	\$3,000.00	\$3,000.00
5	RST Field Data Collection (2-pass test Art. Only; 1-pass Remaining)	246	T-Mi	\$100.00	\$24,600.00
	a. Walking Survey: 2% of CL Street Sections to Verify RST Results (City Picks)	4	CL Mi	\$2,100.00	\$8,400.00
Data Management					
6	Data QA/QC, Processing, & Formatting	246	T-Mi	\$16.00	\$3,936.00
7	Lucity Pavement Condition Data Load & GIS Integration (Partial Network)	1	LS	\$8,000.00	\$8,000.00
8	Operating Parameters - Initial Year Only (Pronoted)	1	LS	\$1,100.00	\$1,100.00
9	Pavement Analysis & Written Report	1	EA	\$7,000.00	\$7,000.00
10	Project Management	1	LS	\$3,585.00	\$3,585.00
	a. 4 Meetings, to include Kick-off & Council Presentation	4	EA	\$2,000.00	\$8,000.00
11	Onsite Lucity Training: 1 Day to a Group or 1-on-1	1	DA	\$3,750.00	\$3,750.00
12	Existing Client Discount	1	LS	(\$2,400.00)	(\$2,400.00)

Annual Project Total: \$76,399.00

Alt.	Remove Walking Re-Surveys	4	CL Mi.	(\$2,100.00)	(\$8,400.00)
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Alternate Annual Total: \$67,999.00

Optional Service Items and Activities

13	Dynalect Mobilization (Partial Network/Annual: 20% Arterials: 2-pass)	1	LS	\$3,000.00	\$3,000.00
	a. Deflection Testing (of 1/5th Annually, 2-pass test Arterials only)	56	T-Mi	\$160.00	\$8,960.00
	b. Traffic Control for Deflection Testing (provided by City; Estimated 32 Hours)	0	HR	(provided by City of Riverside)	
13 Alt.	Dynalect Mobilization (FULL Network: 100% Arterials: 2-pass)	1	LS	\$3,000.00	\$3,000.00
	a. Deflection Testing (of ALL Arterials, 2-pass test Arterials only)	278	T-Mi	\$150.00	\$41,700.00
	b. Traffic Control for Deflection Testing (provided by City; Estimated 140 Hours)	0	HR	(provided by City of Riverside)	
14	Lucity Annual Maintenance & Licensing (Future Years, 2021 -)				City to Procure Directly from Lucity
15	Onsite Lucity Training: 1 Day to a Group or 1-on-1 (Additional Days)	1	EA-DA	\$3,750.00	\$3,750.00
16	Right of Way Assets Data Collection (GPS & Camera Configuration)	246	T-Mi	\$25.00	\$6,150.00
	a. Sign & Support Database Development	246	T-Mi	\$100.00	\$24,600.00
	b. Sidewalk Database Development	246	T-Mi	\$50.00	\$12,300.00
	c. ADA Ramp & Compliance Survey	246	T-Mi	\$60.00	\$14,760.00
	d. Curb & Gutter Database Development	246	T-Mi	\$50.00	\$12,300.00
	e. Street Lights Database Development	246	T-Mi	\$50.00	\$12,300.00
	f. Markings & Striping Database Development	246	T-Mi	\$60.00	\$14,760.00
17	IMSVue/ Amazon Web-hosted Viewer (includes Tech Support)	1	LS	\$7,000.00	\$7,000.00
	a. IMSVue - 3 Years Annual Maintenance Fee			Included in Viewer Cost	
18	Additional or Specialty Maps for Reporting (Beyond Typical 2 Sets)	1	EA	\$150.00	\$150.00
19	Additional Onsite Meetings	1	EA	\$3,500.00	\$3,500.00
20	Additional Hard Copies of the Final Report (>3 Sets Included)	1	EA	\$175.00	\$175.00
21	Functional Class Review	1	LS	\$1,500.00	\$1,500.00
22	GIS Clean-up Services	8	HR	\$175.00	\$1,400.00
23	Lucity ROW Asset Data Load	1	EA	\$2,000.00	\$2,000.00

EXHIBIT "C"

KEY PERSONNEL

2.0 IMS KEY PERSONNEL

2.1 TEAM OWNERSHIPS & COLLABORATION

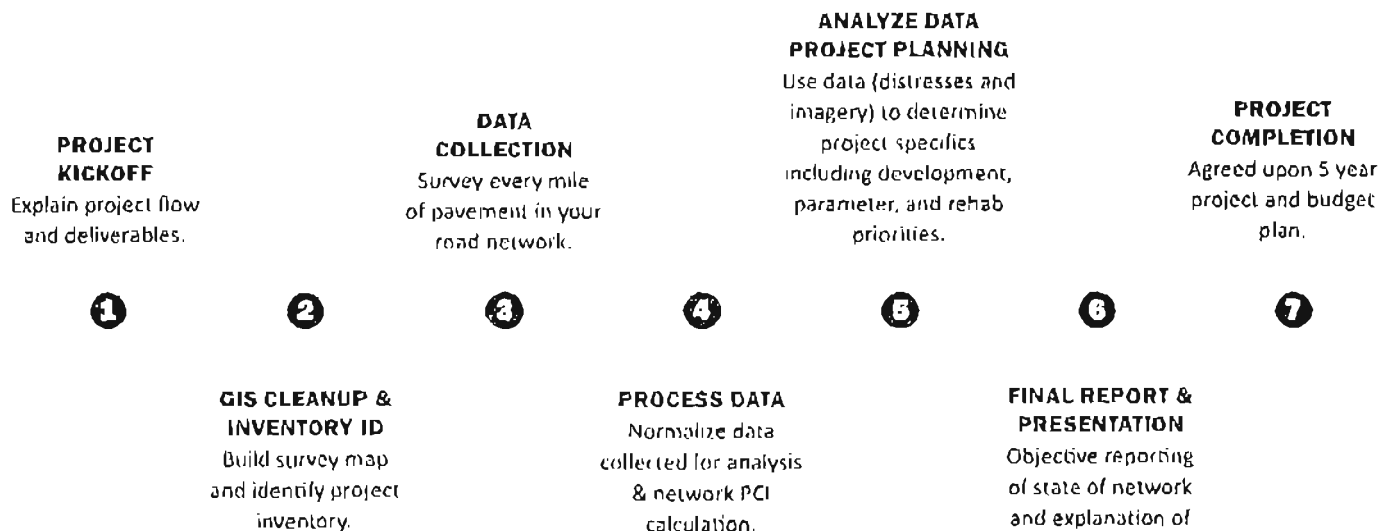
As a professional engineering firm who is 100% dedicated to asset management, IMS performs the work according to our philosophy on project ownership and collaboration. The focus of this project is to collect objective pavement condition data that is captured using automated technologies and collaborate directly with City staff in the development of a world-class Pavement Management System.

Every project is assigned a team of dedicated professionals, with the core group comprised of a Project Principal, Project Engineer, Project Manager, and Client Services Manager. Project ownership begins with the team dynamic. The Project Principal is responsible for ensuring the technical resources are available to meet the needs of each client. The Project Principal oversees the project in its entirety and lead technical deliverable discussions to ensure continuity of services and technically correct results. The Project Engineer is the "Doer" of the group. They are each responsible for preparing the survey maps, reviewing GIS linkage, and processing the condition data. Every team also needs someone who can keep the project moving forward from inception to completion; that is the job of the Project Manager. The Manager's responsibilities include scope negotiation/development, schedule development, project administration, and global project management activities. Walt Smith, P.E. will be the project manager. The Client Services Manager, Jim Tourek should be considered the Management Contact for The City.

The primary benefit of the IMS ownership philosophy is that all members of the team are points of contact throughout the entire project. No person is replaced with a "B" team. In fact, it is the responsibility of the assigned Client Services Manager to lead the development of this proposal. Collaboration as a team between both IMS and City Staff, is vital to the success of this assignment. While IMS brings a level of pavement management expertise to the table as dedicated consultants, City staff also retains local, historical, and institutional knowledge that should be utilized during this assignment.

Team collaboration will be demonstrated in the following areas:

- Project kickoff meeting to introduce the IMS team and City staff assigned to this project. Knowing who retains what information from the onset of the project is the key to success.
- Review of the IMS field inventory maps that will be loaded to the RST. The idea is to ensure the City's comfort with the data coverage and network referencing methodology.
- Scheduled RST mobilization meeting to demonstrate the equipment to City staff.



2.2 COMPANY PROFILE



IMS Infrastructure Management Services, LLC is a pavement management limited liability company with 35 years of direct experience in the industry. From our headquarters in Arizona, 48 IMS staff serve as

the premier automated pavement management firm servicing California and the United States as a whole. We have satellite offices in Illinois, Massachusetts, and British Columbia. As a professional engineering firm that is 100% dedicated to pavement and asset management, we perform the work according to our philosophy on project ownership. Every project is assigned a team of dedicated professionals, with the core group comprised of a Project Principal, a Project Engineer, and a Client Services Manager. We can ensure successful project ownership because each member of the IMS team understands who is accountable for each phase of the project.

Since 1985, IMS has progressively developed new technologies together with real-world software applications to become a recognized international leader in the field of pavement and infrastructure management. Our software solutions provide the tools required to meet the complex challenges within modern urban and rural environments.

IMS's team of professionals complete over 100 pavement and asset management projects across the U.S. annually, and we have served as the pavement management firm for the nearby agencies of Pasadena, Temecula, Riverside, Long



Beach, Beverly Hills, Colton, California Department of Water, South El Monte; and many more throughout California. Additionally, IMS has recently been awarded projects for the nearby City's of Laguna Beach and Irvine

IMS is led by CEO Derek Turner and the point of contact for a contract resulting from this RFP is Jim Tourek, Client Services Manager. He can be reached by phone at (462) 462-4030. He can also be reached by email at jtourek@imsanalysis.com, or by mail at 8380 S. Kyrene Road, Suite 101, Tempe, AZ 85284.

IMS'S ACHIEVEMENTS

- Development of 19 data collection platforms since our inception and a current fleet of 7 LCMS2 Road Surface Testers.
—
- IMS LCMS equipment is certified for ASTM D6433 data collection and we participate in ASTM sub-committee E1741 and TRB subcommittee AFD20 on pavement monitoring and valuation.
—
- Awarded projects by 1,000 City and County agencies plus 25 large-scale public works departments.
—
- Collected data for more than 15 different software platforms, ranging from our own proprietary systems to third-party programs including PAVER, Lucity, Cartograph, Cityworks, and others.
—
- Developed the data collection tools that set the standard for automated, objective surveys.
—
- Developed a turn-key sidewalk and ramp collection and analysis solution.

2.3 IMS TEAM ORGANIZATION & LEADERSHIP

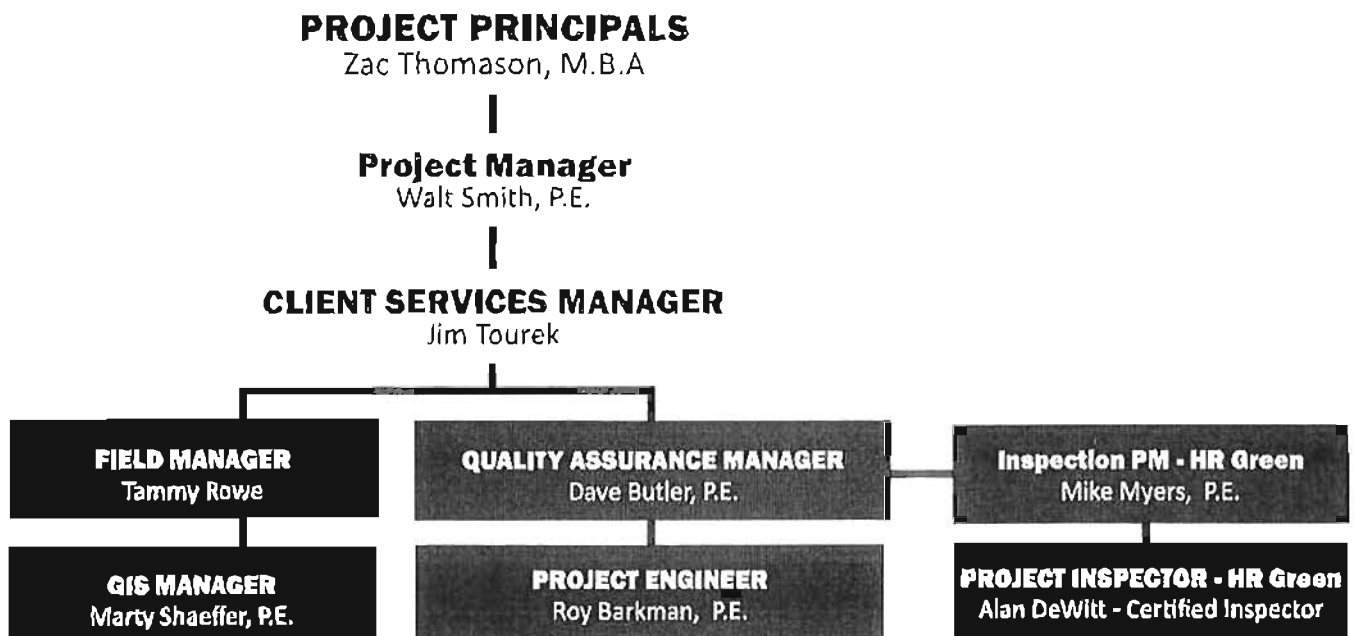
The IMS team is built around a core group of key project members who stay with the project from inception through delivery of the final results. This core group assesses decisions, implements them, and completes necessary follow-up. The core team led by Project Principal Zac Thomason includes Project Manager Walt Smith, P.E. and Jim Tourek as the Client Services Manager

The team has been structured into two streams that follow the logical work activities and flow of the project. Each work stream is headed by a specialist in their respective field of practice. For this assignment, activities relating to the QA/QC program and PCI development will be undertaken by David Butler, P.E. David was selected for this role due to his 300+ assignments and over 30 years dedicated to pavement management and roadway design. In addition, David has over 15 years of FHWA and ASTM reporting and compliance experience. Activities that relate to field surveys will be managed by Tammy Rowe, while Marty Shaeffer, P.E. will act as the GIS Manager and handle image processing. IMS will bring the local Firm HR Green to complete the 2% walking resurveys. Mike Myers, P.E. and Alan DeWitt will lead the walking effort to verify the results of the LCMS2 RST

The IMS team is organized around the following mission-critical items:

- The Principals can bring on additional resources as necessary and react to ongoing project challenges in a timely fashion. Zac Thomason has a strong background in application and database integration across all municipal departments (i.e. Information Technology, Public Works, etc.).
- Over 35 years of engineering and project management experience with a focus on pavement and right-of-way asset data collection projects. IMS staff has experience in roadway design, construction, municipal engineering and pavement analysis, putting us in a strong position to develop real-world solutions and budgets.
- IMS staff understands the needs and constraints of the modern public agency. Our knowledge of industry software options, application integration, and database reconciliation will provide the City with a unique perspective on the implementation.

TEAM FOR THE CITY OF RIVERSIDE PROJECT



2.4 RESUMES KEY PERSONNEL

13 years with IMS

**Automated Data
Pavement Management
Software Evaluation
ROW Assets
Software Implementation**

Zac Thomason, M.B.A

Project Principal & Vice President of Operations

Zac works closely with David and the IMS engineering team. He oversees the production of the data technologists and analysts assigned to the project. Zac will also coordinate with the field manager and the project principal to setup the deployment and mobilization of the LCMS2 RST for field surveys.

- B.S. in Global Business from Arizona State University
- Master's in Business Administration
- 13+ years of PM experience in the engineering industry.
- Has led over 250 successful pavement management assignments.

Recent Projects

Irvine, Laguna Beach, Pasadena, Long Beach, Monterey, Visalia, San Luis Obispo, Imperial, Imperial County, Anaheim, Orange County, Cerritos, Fontana, Lancaster, Del Mar, Imperial Beach, La Mesa, Beverly Hills, Oceanside and Coachella Valley Association of Governments, CA.

2 years with IMS

**Automated Data
Pavement Management
Software Evaluation
ROW Assets
Software Implementation**

Walter Smith, P.E.

Project Engineer

Walter is a professional engineer who has spent the last 15 years dedicated to Civil Engineering and Project Management. He is responsible for ensuring the project deliverables are supplied to the City in the manner that is expected. Walter works closely with the Engineering Manager to perform all data analysis tasks related to Lucity.

- B.S. in Civil Engineering/Construction Project Management, 15 years engineering experience.
- Spent his career with IMS specializing in Lucity Analysis.
- P.E. in Montana.
- Deeply connected to Quality Assurance and Client Satisfaction.

Recent Projects

Irvine, Pasadena, Long Beach, Visalia, Fontana, Temacula, and Fontana, CA; Glendale and Yuma County, AZ; Las Cruces, NM; Mason County, Tukwila, and Pasco, WA; Pocatello and Sandpoint, ID; and Weatherford, TX.

**27 Years of
Engineering Experience**

**Automated Data
Pavement Management
Software Evaluation
ROW Assets
Software Implementation**

Marty Shaeffer, PE

GIS Manager

Marty is a professional engineer who has spent the last 17 years dedicated to GIS technology. He is responsible for ensuring accurate linkage of the IMS data to Weld County's existing GIS and works closely with the Project Engineer. Marty also facilitates the processing of RST imagery for QA/QC.

- B.S. in Civil Engineering, 27 years engineering experience.
- 15+ years specializing in GIS mapping.
- P.E. in California, New Mexico and Arizona.
- Registered AutoCAD Developer and member of the ASCE

Recent Projects

Irvine, Laguna Beach, Pasadena, Long Beach, Monterey, Visalia, San Luis Obispo, Imperial, Imperial County, Anaheim, Orange County, Cerritos, Fontana, Lancaster, Del Mar, Imperial Beach, La Mesa, Beverly Hills, Oceanside and Coachella Valley Association of Governments, CA.

19 years with IMS

**Automated Data
Pavement Management
Software Evaluation
ROW Assets
Software Implementation**

Stephen Smith, P.E.

Project Engineer

Responsible for ensuring the technical resources are available for the data collection and processing, and then directly involved with the pavement analysis and reporting. Stephen will be integral throughout the analysis and reporting phase. Stephen will also ensure that the project remains on time and that the final report is reviewed with City staff.

- B.S. in Civil Engineering, over 30 years engineering experience.
- P.E. in Arizona, Delaware and P.Eng. in Alberta and Saskatchewan.
- 17 years specializing in pavement and right of way asset management for cities and counties.
- In excess of 100 pavement and right of way asset management and implementation projects in the last 5 years. Most involve development of inventories, GIS integration, analysis and reporting, and asset management systems.
- In excess of 300,000 miles of data collection and QA/QC using automated, manual and sampling technologies.

Recent Projects

Irvine, Laguna Beach, Pasadena, Long Beach, Monterey, Visalia, San Luis Obispo, Imperial, Imperial County, Anaheim, Orange County, Cerritos, Fontana, Lancaster, Imperial Beach, La Mesa, Beverly Hills, Oceanside and Coachella Valley Association of Governments, CA.

**32 Years of
Engineering Experience**

**Automated Data
Pavement Management
Software Evaluation
ROW Assets
Software Implementation**

Dave Butler, PE

Engineering Manager & QA/QC Manager

David is responsible for ensuring the prepared inventory and processed pavement condition data meets IMS's rigorous QA standards. He works closely with the Project Engineer to ensure the data meets the deliverable requirements.

- B.S. in civil engineering, 30+ years engineering experience.
- Over 25 years specializing in pavement and ROW asset management, software implementation, analysis and training.
- Developer of three pavement and ROW asset management applications and data models, complete with GIS integration.
- Data collection, inspection and QA/QC of well over 200,000 miles of roadways in all regions of the country.
- Participation in ASTM sub-committee E1741, TRB sub-committee AFD20 on pavement monitoring, valuation.

Recent Projects

Pasadena, Long Beach, Monterey, Visalia, San Luis Obispo, Imperial, Imperial County, Anaheim, Orange County, Cerritos, Fontana, Lancaster, Del Mar, Imperial Beach, La Mesa, Beverly Hills, Oceanside and Coachella Valley Association of Governments, CA.

7 years with IMS

**Automated Data
Pavement Management
Software Evaluation
ROW Assets
Software Implementation**

Jim Tourek

Client Services Manager

Jim is responsible for overall project and client management activities. He develops the project scope, schedule, team, and ensures the scope is adhered to throughout the project. Jim works very closely with the Project Principal and is considered a primary point of contact for our clients.

- B.S. in Construction Management from the University of Nebraska
- 25+ years of project management experience in the engineering and construction industries.
- Has led over 150 successful pavement management assignments.

Recent Projects

Pasadena, Long Beach, Monterey, Visalia, San Luis Obispo, Imperial, Imperial County, Anaheim, Orange County, Cerritos, Fontana, Lancaster, Del Mar, Imperial Beach, La Mesa, Beverly Hills, Oceanside and Coachella Valley Association of Governments, CA.