

CITY OF SAN CLEMENTE

PROFESSIONAL CONSULTANT SERVICES AGREEMENT

1. PARTIES AND DATE.

This Agreement is made and entered into this 6 day of February, 2023, by and between the City of San Clemente, a municipal corporation, organized under the laws of the State of California, with its principal place of business at 910 Calle Negocio, San Clemente, California, 92673 ("City") and **NCE** with its principal place of business at **17050 Bushard St., Suite 200, Fountain valley, CA 92708** ("Consultant"). City and Consultant are sometimes individually referred to herein as "Party" and collectively as "Parties."

2. RECITALS.

2.1 Consultant.

Consultant desires to perform and assume responsibility for the provision of certain professional **engineering** consulting services required by the City on the terms and conditions set forth in this Agreement. Consultant represents that it is experienced in providing professional **engineering** consulting services to public clients, is licensed in the State of California, if applicable, and is familiar with the plans of City.

2.2 Project.

City desires to engage Consultant to render such professional **engineering** consulting services for the **Pavement Management System update** project ("Project") as set forth in this Agreement.

3. TERMS.

3.1 Scope of Services and Term.

3.1.1 General Scope of Services. Consultant promises and agrees to furnish to the City all labor, materials, tools, equipment, services, and incidental and customary work necessary to fully and adequately supply the professional "Pavement Management System Update" consulting services necessary for the Project ("Services"). The Services are more particularly described in Exhibit "A" attached hereto and incorporated herein by reference. All Services shall be subject to, and performed in accordance with, this Agreement, the exhibits attached hereto and incorporated herein by reference, and all applicable local, state and federal laws, rules and regulations. Additionally, Consultant shall comply with all Federal requirements applicable to the Services as set forth in Exhibit "A-I."

3.1.2 Term. The term of this Agreement shall be from **January 23rd, 2023** until the services are completed to the satisfaction of the City, unless earlier terminated as provided herein

3.2 Responsibilities of Consultant.

3.2.1 Independent Contractor; Control and Payment of Subordinates. The Services shall be performed by Consultant or under its supervision. Consultant will determine the means, methods and details of performing the Services subject to the requirements of this

Agreement. City retains Consultant on an independent contractor basis and not as an employee. Consultant retains the right to perform similar or different services for others during the term of this Agreement. Any additional personnel performing the Services under this Agreement on behalf of Consultant shall also not be employees of City and shall at all times be under Consultant's exclusive direction and control. Neither City, nor any of its officials, officers, directors, employees or agents shall have control over the conduct of Consultant or any of Consultant's officers, employees, or agents, except as set forth in this Agreement. Consultant shall pay all wages, salaries, and other amounts due such personnel in connection with their performance of Services under this Agreement and as required by law. Consultant shall be responsible for all reports and obligations respecting such additional personnel, including, but not limited to: social security taxes, income tax withholding, unemployment insurance, disability insurance, and workers' compensation insurance.

3.2.2 Schedule of Services. Consultant shall perform the Services expeditiously, within the term of this Agreement, and in accordance with the Schedule of Services set forth in Exhibit "B" attached hereto and incorporated herein by reference. Consultant represents that it has the professional and technical personnel required to perform the Services in conformance with such conditions. In order to facilitate Consultant's conformance with the Schedule, City shall respond to Consultant's submittals in a timely manner. Upon request of City, Consultant shall provide a more detailed schedule of anticipated performance to meet the Schedule of Services.

3.2.3 Endorsement on PS&E/ Other Data. Consultant shall sign all plans, specifications, estimates (PS&E) and engineering data furnished by Consultant, and where appropriate will indicate Consultant's authorized signature and professional registration number.

3.2.4 Conformance to Applicable Requirements. All work prepared by Consultant shall be subject to the approval of City.

3.2.5 Substitution of Key Personnel. Consultant has represented to City that certain key personnel will perform and coordinate the Services under this Agreement. Should one or more of such personnel become unavailable, Consultant may substitute other personnel of at least equal competence upon written approval of City. In the event that City and Consultant cannot agree as to the substitution of key personnel, City shall be entitled to terminate this Agreement for cause. As discussed below, any personnel who fail or refuse to perform the Services in a manner acceptable to the City, or who are determined by the City to be uncooperative, incompetent, a threat to the adequate or timely completion of the Project or a threat to the safety of persons or property, shall be promptly removed from the Project by the Consultant at the request of the City. The key personnel for performance of this Agreement are as follows: Vivek, Jha, Associate.

3.2.6 City's Representative. The City hereby designates Shawn Ryan, Senior Civil Engineer, to act as its representative in all matters pertaining to the administration and performance of this Agreement ("City's Representative"). City's Representative shall have the power to act on behalf of the City for review and approval of all products submitted by Consultant but not the authority to enlarge the Scope of Work or change the total compensation due to Consultant under this Agreement. The City Manager shall be authorized to act on City's behalf and to execute all necessary documents which enlarge the Scope of Work or change the Consultant's total compensation subject to the provisions contained in Section 3.3 of this Agreement. Consultant shall not accept direction or orders from any person other than the City Manager, City's Representative or his/her designee.

3.2.7 Consultant's Representative. Consultant hereby designates Vivek Jha, Associate to act as its representative for the performance of this Agreement ("Consultant's Representative"). Consultant's Representative shall have full authority to represent and act on behalf of the Consultant for all purposes under this Agreement. The Consultant's Representative shall supervise and direct the Services, using his/her best skill and attention, and shall be responsible for all means, methods, techniques, sequences, and procedures and for the satisfactory coordination of all portions of the Services under this Agreement.

3.2.8 Coordination of Services. Consultant agrees to work closely with City staff in the performance of Services and shall be available to City's staff, consultants and other staff at all reasonable times.

3.2.9 Standard of Care; Performance of Employees. Consultant shall perform all Services under this Agreement in a skillful and competent manner, consistent with the standards generally recognized as being employed by professionals in the same discipline in the State of California. Consultant represents and maintains that it is skilled in the professional calling necessary to perform the Services. Consultant warrants that all employees and subconsultants shall have sufficient skill and experience to perform the Services assigned to them. Finally, Consultant represents that it, its employees and subconsultants have all licenses, permits, qualifications and approvals of whatever nature that are legally required to perform the Services, and that such licenses and approvals shall be maintained throughout the term of this Agreement. As provided for in the indemnification provisions of this Agreement, Consultant shall perform, at its own cost and expense and without reimbursement from the City, any services necessary to correct errors or omissions which are caused by the Consultant's failure to comply with the standard of care provided for herein. Any employee of the Consultant or its sub-consultants who is determined by the City to be uncooperative, incompetent, a threat to the adequate or timely completion of the Project, a threat to the safety of persons or property, or any employee who fails or refuses to perform the Services in a manner acceptable to the City, shall be promptly removed from the Project by the Consultant and shall not be re-employed to perform any of the Services or to work on the Project.

3.2.10 Laws and Regulations. Consultant shall keep itself fully informed of and in compliance with all local, state and federal laws, rules and regulations in any manner affecting the performance of the Project or the Services, including all Cal/OSHA requirements, and shall give all notices required by law. Consultant shall be liable for all violations of such laws and regulations in connection with Services. If Consultant performs any work knowing it to be contrary to such laws, rules and regulations, Consultant shall be solely responsible for all costs arising therefrom. Consultant shall defend, indemnify and hold City, its officials, directors, officers, employees, agents, and volunteers free and harmless, pursuant to the indemnification provisions of this Agreement, from any claim or liability arising out of any failure or alleged failure to comply with such laws, rules or regulations.

3.2.11 Safety. Consultant shall execute and maintain its work so as to avoid injury or damage to any person or property. In carrying out its Services, the Consultant shall at all times be in compliance with all applicable local, state and federal laws, rules and regulations, and shall exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed. Safety precautions, where applicable, shall include, but shall not be limited to: (A) adequate life protection and lifesaving equipment and procedures; (B) instructions in accident prevention for all employees and subconsultants, such as safe walkways, scaffolds, fall protection ladders, bridges, gang planks, confined space procedures, trenching and shoring, equipment and other safety devices, equipment and wearing apparel as are necessary or lawfully required to prevent accidents or

injuries; and (C) adequate facilities for the proper inspection and maintenance of all safety measures.

3.2.12 Insurance. Consultant agrees to procure and maintain, at Consultant's expense all insurance specified in Exhibit "C" attached hereto and by this reference incorporated herein. Consultant shall require all subconsultants to carry the same policies and limits of insurance that the Consultant is required to maintain, unless otherwise approved in writing by the City.

3.3 Fees and Payments.

3.3.1 Compensation. Consultant shall receive compensation, including authorized reimbursements, for all Services rendered under this Agreement at the rates set forth in Exhibit "D" attached hereto and incorporated herein by reference. The total compensation shall not exceed **forty-six thousand, six hundred dollars (\$46,600)** without written approval of the City Council or City Manager as applicable (**Tasks 1-4 as shown in Exhibit "D" with \$5,000 contingency**). Extra Work may be authorized, as described below, and if authorized, will be compensated at the rates and manner set forth in this Agreement.

3.3.2 Payment of Compensation. Consultant shall submit to City a monthly invoice which indicates work completed and hours of Services rendered by Consultant. The invoice shall describe the amount of Services provided since the initial commencement date, or since the start of the subsequent billing periods, as appropriate, through the date of the invoice. City shall, within 30 days of receiving such invoice, review the invoice and pay all non-disputed and approved charges thereon. If the City disputes any of Consultant's fees, the City shall give written notice to Consultant within thirty (30) days of receipt of an invoice of any disputed fees set forth therein.

3.3.3 Reimbursement for Expenses. Consultant shall not be reimbursed for any expenses unless authorized in writing by City, or included in Exhibit "D" of this Agreement.

3.3.4 Extra Work. At any time during the term of this Agreement, City may request that Consultant perform Extra Work. As used herein, "Extra Work" means any work which is determined by City to be necessary for the proper completion of the Project, but which the Parties did not reasonably anticipate would be necessary at the execution of this Agreement. Consultant shall not perform, nor be compensated for, Extra Work without written authorization from the City.

3.3.5 Rate Increases. In the event that this Agreement is renewed pursuant to Section 3.1.2, the rate set forth in Exhibit "D" may be adjusted each year at the time of renewal as set forth in Exhibit "D."

3.3.6 Labor Code Requirements.

3.3.6.1 Prevailing Wages. Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on "public works" and "maintenance" projects. **"If"** the Services are being performed as part of an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and **"Since"** the total compensation is \$1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. Consultant shall make copies of the prevailing rates of per diem wages for each craft,

classification or type of worker needed to execute the Services available to interested parties upon request, and shall post copies at the Consultant's principal place of business and at the project site. Consultant shall defend, indemnify and hold the City, its officials, officers, employees, agents, and volunteers free and harmless from any claim or liability arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

3.3.6.2 Registration. If the Services are being performed as part of an applicable "public works" or "maintenance" project, in addition to the foregoing, then pursuant to Labor Code sections 1725.5 and 1771.1, the Consultant and all subconsultants must be registered with the Department of Industrial Relations ("DIR"). Consultant shall maintain registration for the duration of the project and require the same of any subconsultants. This project may also be subject to compliance monitoring and enforcement by the DIR. It shall be Consultant's sole responsibility to comply with all applicable registration and labor compliance requirements, including the submission of payroll records directly to the DIR. Notwithstanding the foregoing, the contractor registration requirements mandated by Labor Code sections 1725.5 and 1771.1 shall not apply to Services performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code sections 1725.5 and 1771.1.

3.4 Accounting Records.

3.4.1 Maintenance and Inspection. Consultant shall maintain complete and accurate records with respect to all costs and expenses 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 four (4) years from the date of final payment under this Agreement.

3.5 General Provisions.

3.5.1 Termination of Agreement.

3.5.1.1 Grounds for Termination. City may, by written notice to Consultant, terminate the whole or any part of this Agreement at any time, with or without cause, by giving written notice to Consultant of such termination, and specifying the effective date thereof, at least seven (7) days before the effective date of such termination. Upon termination, Consultant shall be compensated only for those services which have been adequately rendered to City, and Consultant shall be entitled to no further compensation. Consultant may not terminate this Agreement except for cause.

3.5.1.2 Effect of Termination. If this Agreement is terminated as provided herein, City may require Consultant to provide all finished or unfinished Documents and Data and other information of any kind prepared by Consultant in connection with the performance of Services under this Agreement. Consultant shall be required to provide such document and other information within fifteen (15) days of the request.

3.5.1.3 Additional Services. In the event this Agreement is terminated in whole or in part as provided herein, City may procure, upon such terms and in such manner as it may determine appropriate, services similar to those terminated.

3.5.2 Delivery of Notices. All notices permitted or required under this Agreement shall be given to the respective parties at the following address, or at such other address as the

respective parties may provide in writing for this purpose:

Consultant: **NCE**
17050 Bushard St., Suite 200
Fountain Valley CA 92708
ATTN: Vivek JHA, PE

City: City of San Clemente
910 Calle Negocio
San Clemente, CA 92673
ATTN: Shawn Ryan, PE, Senior Civil Engineer

Such notice shall be deemed made when personally delivered or when mailed, forty-eight (48) hours after deposit in the U.S. Mail, first class postage prepaid and addressed to the party at its applicable address. Actual notice shall be deemed adequate notice on the date actual notice occurred, regardless of the method of service.

3.5.3 Ownership of Materials and Confidentiality.

3.5.3.1 Documents & Data; Licensing of Intellectual Property. This Agreement creates a non-exclusive and perpetual license for City to copy, use, modify, reuse, or sublicense any and all copyrights, designs, and other intellectual property embodied in plans, specifications, studies, drawings, estimates, and other documents or works of authorship fixed in any tangible medium of expression, including but not limited to, physical drawings or data magnetically or otherwise recorded on computer diskettes, which are prepared or caused to be prepared by Consultant under this Agreement ("Documents & Data"). Consultant shall require all subconsultants to agree in writing that City is granted a non-exclusive and perpetual license for any Documents & Data the subconsultant prepares under this Agreement. Consultant represents and warrants that Consultant has the legal right to license any and all Documents & Data. Consultant makes no such representation and warranty in regard to Documents & Data which were prepared by design professionals other than Consultant or provided to Consultant by the City. City shall not be limited in any way in its use of the Documents & Data at any time, provided that any such use not within the purposes intended by this Agreement shall be at City's sole risk.

3.5.3.2 Confidentiality. All ideas, memoranda, specifications, plans, procedures, drawings, descriptions, computer program data, input record data, written information, and other Documents & Data either created by or provided to Consultant in connection with the performance of this Agreement shall be held confidential by Consultant. Such materials shall not, without the prior written consent of City, be used by Consultant for any purposes other than the performance of the Services. Nor shall such materials be disclosed to any person or entity not connected with the performance of the Services or the Project. Nothing furnished to Consultant which is otherwise known to 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 or other similar medium without the prior written consent of City.

3.5.3.3 Confidential Information. The City shall refrain from releasing Consultant's proprietary information ("Proprietary Information") unless the City's legal counsel determines that the release of the Proprietary Information is required by the California Public Records Act or other applicable state or federal law, or order of a court of competent jurisdiction, in which case the City shall notify Consultant of its intention to release Proprietary Information.

Consultant shall have five (5) working days after receipt of the Release Notice to give City written notice of Consultant's objection to the City's release of Proprietary Information. Consultant shall indemnify, defend and hold harmless the City, and its officers, directors, employees, and agents from and against all liability, loss, cost or expense (including attorney's fees) arising out of a legal action brought to compel the release of Proprietary Information. City shall not release the Proprietary Information after receipt of the Objection Notice unless either: (1) Consultant fails to fully indemnify, defend (with City's choice of legal counsel), and hold City harmless from any legal action brought to compel such release; and/or (2) a final and non-appealable order by a court of competent jurisdiction requires that City release such information.

3.5.4 Cooperation; Further Acts. The Parties shall fully cooperate with one another, and shall take any additional acts or sign any additional documents as may be necessary, appropriate or convenient to attain the purposes of this Agreement.

3.5.5 Attorney's Fees. If either party commences an action against the other party, either legal, administrative or otherwise, arising out of or in connection with this Agreement, the prevailing party in such litigation shall be entitled to have and recover from the losing party reasonable attorney's fees and all other costs of such action.

3.5.6 Indemnification.

3.5.6.1 To the fullest extent permitted by law, Consultant shall defend (with counsel of City's choosing), indemnify and hold the City, its directors, officials, officers, employees, volunteers and agents free and harmless from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage or injury of any kind, in law or equity, to property or persons, including wrongful death, in any manner arising out of, pertaining to, or incident to any alleged acts, errors or omissions, or willful misconduct of Consultant, its officials, officers, employees, subcontractors, consultants or agents in connection with the performance of the Consultant's Services, the Project or this Agreement, including without limitation the payment of all damages, expert witness fees and attorney's fees and other related costs and expenses. Consultant's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by Consultant, the City, its officials, officers, employees, agents, or volunteers.

3.5.6.2 If Consultant's obligation to defend, indemnify, and/or hold harmless arises out of Consultant's performance as a "design professional" (as that term is defined under Civil Code section 2782.8), then, and only to the extent required by Civil Code section 2782.8, which is fully incorporated herein, Consultant's indemnification obligation shall be limited to claims that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the Consultant, and, upon Consultant obtaining a final adjudication by a court of competent jurisdiction, Consultant's liability for such claim, including the cost to defend, shall not exceed the Consultant's proportionate percentage of fault.

3.5.7 Entire Agreement. This Agreement contains the entire Agreement of the parties with respect to the subject matter hereof, and supersedes all prior negotiations, understandings or agreements. This Agreement may only be modified by a writing signed by both parties.

3.5.8 Governing Law. This Agreement shall be governed by the laws of the State of California. Venue shall be in Orange County.

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

3.5.10 City's Right to Employ Other Consultants. City reserves right to employ other consultants in connection with this Project.

3.5.11 Successors and Assigns. This Agreement shall be binding on the successors and assigns of the parties.

3.5.12 Assignment or Transfer. Consultant shall not assign, hypothecate, or transfer, either directly or by operation of law, this Agreement or any interest herein without the prior written consent of the City. Any attempt to do so shall be null and void, and any assignees, hypothecates or transferees shall acquire no right or interest by reason of such attempted assignment, hypothecation or transfer.

3.5.13 Construction; References; Captions. Since the Parties or their agents have participated fully in the preparation of this Agreement, the language of this Agreement shall be construed simply, according to its fair meaning, and not strictly for or against any Party. Any term referencing time, days or period for performance shall be deemed calendar days and not work days. All references to Consultant include all personnel, employees, agents, and subconsultants of Consultant, except as otherwise specified in this Agreement. All references to City include its elected officials, officers, employees, agents, and volunteers except as otherwise specified in this Agreement. The captions of the various articles and paragraphs are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, or intent of this Agreement.

3.5.14 Amendment; Modification. No supplement, modification, or amendment of this Agreement shall be binding unless executed in writing and signed by both Parties.

3.5.15 Waiver. No waiver of any default shall constitute a waiver of any other default or breach, whether of the same or other covenant or condition. No waiver, benefit, privilege, or service voluntarily given or performed by a Party shall give the other Party any contractual rights by custom, estoppel, or otherwise.

3.5.16 No Third-Party Beneficiaries. There are no intended third party beneficiaries of any right or obligation assumed by the Parties.

3.5.17 Invalidity; Severability. If any portion of this Agreement is declared invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions shall continue in full force and effect.

3.5.18 Prohibited Interests. Consultant maintains and warrants that it has not employed nor retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Agreement. Further, Consultant warrants that it has not paid nor has it agreed to pay any company or person, other than a bona fide employee working solely for Consultant, any fee, commission, percentage, brokerage fee, gift or other consideration contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, City shall have the right to rescind this Agreement without liability. For the term of this Agreement, no member, officer or employee of City, during the term of his or her service with City, shall have any direct interest in this Agreement, or obtain any present or anticipated material benefit arising therefrom.

3.5.19 Equal Opportunity Employment. Consultant represents that it is an equal opportunity employer and it shall not discriminate against any subconsultant, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex

or age. Such non-discrimination shall include, but not be limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination. Consultant shall also comply with all relevant provisions of City's Minority Business Enterprise program, Affirmative Action Plan or other related programs or guidelines currently in effect or hereinafter enacted.

3.5.20 Labor Certification. By its signature hereunder, Consultant certifies that it is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions of that Code, and agrees to comply with such provisions before commencing the performance of the Services.

3.5.21 Authority to Enter Agreement. Consultant has all requisite power and authority to conduct its business and to execute, deliver, and perform the Agreement. Each Party warrants that the individuals who have signed this Agreement have the legal power, right, and authority to make this Agreement and bind each respective Party.

3.5.22 Counterparts. This Agreement may be signed in counterparts, each of which shall constitute an original.

3.6 Subcontracting.

3.6.1 Prior Approval Required. Consultant shall not subcontract any portion of the work required by this Agreement, except as expressly stated herein, without prior written approval of City. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed on the respective dates set forth opposite of their signatures.

CITY OF SAN CLEMENTE

By: Sean Joyce

Its: City manager

Dated: 2-10, 2023

ATTEST:

Paula Amy
CITY CLERK of the City of
San Clemente, California

APPROVED AS TO FORM:
BEST BEST & KRIEGER

[Signature]
City Attorney

APPROVED AS TO AVAILABILITY
OF FUNDING:

[Signature]
Finance Authorization

Vivek Jha

(“CONSULTANT”)

By: Vivek Jha

Its: Associate & Southern California

Operations Manager

Dated: January 23, 2023

EXHIBIT "A"
SCOPE OF SERVICES

WORKER'S COMPENSATION INSURANCE CERTIFICATION

WORKERS' COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:

(ONE OF THE BOXES BELOW MUST BE CHECKED)

I have and will maintain a certificate of consent from the California Labor Commission to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work to be performed under this contract.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work to be performed under this contract. My workers' compensation insurance carrier and policy number are:

Carrier RLI Insurance Company

Policy Number PSW0001955

I certify that, in the performance of the work under this Agreement, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and I hereby agree to indemnify, defend, and hold harmless the City of San Clemente and all of its officials, employees, and agents from and against any and all claims, liabilities, and losses relating to personal injury or death, economic losses, and property damage arising out of my failure to provide such worker's compensation insurance. I further agree that, if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

Dated: February 15, 2023

NCE
Consultant

By: Vivek Jha

Associate & Southern California Operations Manager

Title

17050 Bushard St, Suite 200

Address

Fountain Valley, CA 92708



City of San Clemente

PROPOSAL

Pavement Management System Update

December 12, 2022



Submitted By:



17050 Bushard Street, Suite 200
Fountain Valley, CA 92708
Phone: (714) 848-8897



December 12, 2022

Attn: Shawn Ryan, PE, Senior Civil Engineer
City of San Clemente
Public Works Department, Engineering Division
910 Calle Negocio, Suite 100
San Clemente, CA 92673

RE: Proposal – Pavement Management System Update

Dear Mr. Ryan and Members of the Selection Committee:

NCE is familiar with the City of San Clemente's (City's) street network, as we have worked on the City's Pavement Management System (PMS) since 2013. More recently, NCE updated the City's PMS and the required Orange County Transportation Authority (OCTA) deliverables in 2021. As per the last PMS update, the City's street network was in good condition, with the City's network at a Pavement Condition Index (PCI) of 84. Specifically, the City's Master Plan Arterial Highway (MPAH) had a PCI of 86, and the local streets and alleys had a PCI of 83 and 72, respectively. In addition to updating the City's PMS in 2021, NCE also inventoried right-of-way assets, including signs, pavement striping and marking, and sidewalks.

As part of this project, NCE will partner with the City to update the PMS database, recommend rehabilitation strategies to improve pavement conditions, develop a street rehabilitation list, and deliver a report in OCTA's most current PMS template to ensure compliance and receipt of Measure M2 funding.

With more than 100 person-years of experience with PMS updates, NCE has more knowledge and understanding of pavement management than any other pavement consulting firm. Our highly trained technical staff are experienced in data collection and have worked together on numerous other similar projects. They have developed an excellent reputation for dedication, integrity, productivity, quality of work, and service to our clients. Specifically, the NCE team provides the following capabilities to the City:

- **Previous San Clemente experience** – NCE successfully updated the City's previous PMS update in 2015 and 2020/21. NCE also conducted a peer review of the City's pavement management report in 2013. In addition to the PMS work, NCE has also assisted the City with developing an inventory of sign, sidewalk, and pavement marking and striping. Lastly, NCE is also assisting with developing the Clean Ocean (Stormwater) Fee renewal. Our proposed team can provide the City with the technical and management experience to deliver the PMP project on schedule and within budget as we have in the past. We are familiar with City's PMP and road network and have established working relationships with City staff.
- **Understanding of Measure M2 reporting requirements** – NCE understands OCTA's stringent reporting requirements for Measure M2 compliance. Our firm has worked with OCTA since 2008 in providing training to Orange County agency staff and we helped OCTA develop the reporting guidelines and are current with new modifications. **The newest reporting guidelines require each agency to submit GIS deliverables, which is a major change from the previous reports.**
- **Local experience** – NCE has extensive experience in Southern California, and we have worked for more than 90 cities/counties locally on similar PMP projects. In addition to the above, NCE has worked with more than 200 local agencies across California delivering PMP projects.

Fountain Valley, CA
17050 Bushard Street, Suite 200
Fountain Valley, CA 92708
(714) 848-8897

- **Sustainable, innovative pavement and mix design capabilities** – NCE is on the forefront of new pavement design methods as well as mix designs and specifications that include warm mixes, recycling, use of rubber tires, as well as long life pavements. We can assist City staff in the use of sustainable materials and recycling where possible to meet AB32 goals. NCE has served as the design consultant for CalRecycle’s Rubberized Asphalt Concrete Engineering and Technical Assistance contract for the past three cycles to provide statewide technical assistance and technology transfer for pavement recycling.
- **Specialized emphasis on pavements** – NCE’s has assisted several agencies in quantifying the impact of utility cuts on pavement life, as well as waste vehicles and developed either a fee schedule or franchise fee associated with premature pavement failures.
- **Real-life knowledge** – NCE understands local agencies’ needs and the types of problems frequently encountered, such as lack of trained personnel or funds, budgetary concerns, and other institutional issues inherent in the use of pavement management systems. NCE understands the constraints and has assisted agencies in arriving at realistic solutions.
- **Right of way Asset Inventory** – NCE’s has extensive experience in inventorying right of way asset for our clients including the City. The right of way assets is provided in independent Geodatabase format which can be imported into the clients existing GIS database or work order program.
- **Certified Inspectors** – NCE’s field inspectors and engineers are qualified through the OCTA Inspector Certification Programs to ensure accurate and reliable results. NCE’s field inspectors are also certified through the Metropolitan Transportation Commission (MTC’s), the only agency to administer StreetSaver® certification.
- **Rigorous quality control** – NCE’s projects include a Quality Control/Quality Assurance (QC/QA) Manager to provide a thorough review of documents prepared for deliverables who reports directly to the Project Manager. Additionally, NCE’s engineers and technicians undergo a mandatory internal training/calibration once a year for field condition surveys as well as for other PMP-related activities.

NCE has the capability to deliver responsive, cost-effective and high-quality pavement management and pavement engineering services. This contract will be managed from our Fountain Valley office, located less than 35 minutes away from the City. We can respond and be at the City’s offices within hours if necessary. These services will be accomplished through a systematic and organized method of work and communication led by NCE’s proposed **Project Manager, Vivek Jha, MS, PE**. Mr. Jha will be the contact for all correspondence during the selection process. As an Associate of NCE, Mr. Jha is authorized to sign contracts on behalf of NCE. His contact information is as follows:

NCE Proposal Contact

Vivek Jha, MS, PE, Project Manager
Associate/Southern California Operations Manager
P: (909) 362-7936 | E: vjha@ncenet.com

NCE Project Office

17050 Bushard Street, Suite 200
Fountain Valley, CA 92708
P: (714) 848-8897 | W: www.ncenet.com

NCE looks forward to your favorable review of our proposal and the opportunity to continue our work with the City. Please do not hesitate to contact me with any questions and/or comments you may have.

Sincerely,

NCE



Vivek Jha, PE
Associate



Table of Contents

- 1. Project Understanding and Approach.....1
 - 1.1 Project Understanding.....1
 - 1.2 Project Approach.....1
- 2. Methodology and Work Plan3
 - 2.1 Scope of Work3
 - Task 1. Kickoff Meeting and Project Management3
 - Task 2. Pavement Condition Survey and Pavement Condition Index (PCI) Calculations3
 - Quality Control5
 - Data Entry and PCI Calculations6
 - Task 3. Update Maintenance and Rehabilitation (M&R) History and Decision Tree7
 - Task 4. Budgetary Analysis and Report7
 - Task 5A. Right of Way Sign Inventory.....9
 - Task 5B. Additional Right of Way Inventory (OPTIONAL).....9
 - Task 6. Ground Penetrating Radar (GPR) (OPTIONAL)10
- 3. Project Organization and Staffing11
 - 3.1 Firm Profile11
 - 3.2 Firm Qualifications11
 - Pavement Management Expertise12
 - Pavement Design & Analysis12
 - Sustainable and Innovative Pavement Technologies13
 - GIS Analysis, Modeling, and Mapping using the latest ESRI™ Software14
 - Pavement and Civil Engineering.....14
 - Special Equipment.....14
 - 3.3 Organizational Chart.....14
 - 3.4 Project Team Responsibilities.....15
 - 3.5 Project Team Allocation of Hours by Task.....17
 - 3.6 Project Team Resumes17
- 4. Related Experience.....23
- 5. Project Schedule.....27
- 6. Proposed Fee.....29
- 7. Statement of Compliance.....31
- 8. Other Information33

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1. Project Understanding and Approach

1.1 Project Understanding

NCE understands that the **City of San Clemente (City)** is seeking professional consulting services to assist in collecting pavement distress data and updating the StreetSaver® Pavement Management Program (PMP).

The City's pavement network comprises approximately 138.4 centerline miles of publicly maintained streets. The last condition surveys were performed by NCE in 2020/21. As part of the last update, the entire City's street network was evaluated. For the 2022/23 update, the City desires to perform pavement condition surveys on the entire Master Plan Arterial Highway (MPAH) (25.7 centerline miles) and one-third of the local street and alleys network (~37.5 centerline miles).

In addition, all traffic signs previously collected in the City's Lucity database will be field verified and identified with the California Manual on Uniform Traffic Control Devices (MUTCD) code. In 2021, NCE inventoried the City's sign and pavement marking. As part of this project, we will only update the inventory where new signs have been installed. This approach will provide substantial cost savings to the City. As an optional task, NCE will also inventory additional right of way assets such as striping and stenciling, traffic signals, and curb markings.

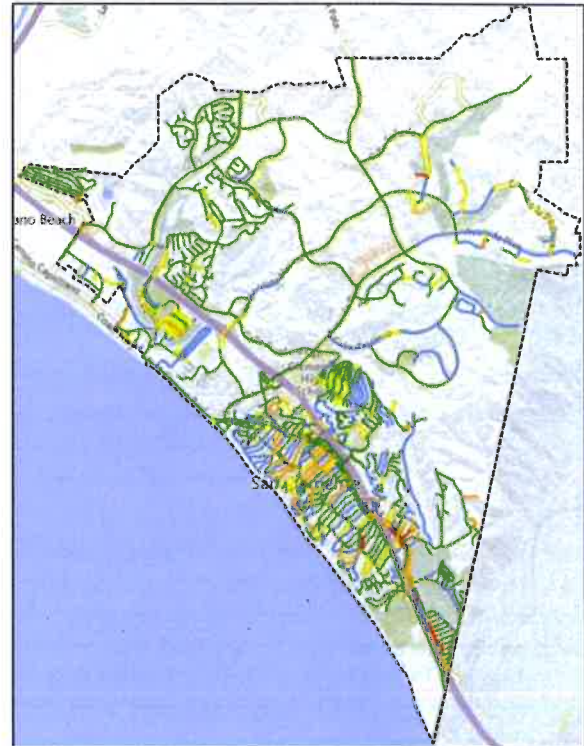


Figure 1 – City's Existing Network Condition

1.2 Project Approach

A detailed scope of services is described in Section 2 – Methodology and Work Plan. However, briefly, NCE's approach is to hit the ground running with the information and experience we have gathered from the last update in 2021. This allows significant cost savings to the City as we are already familiar with the street network. Combined with our close relationship with OCTA and their requirements, the City can be assured that we will provide deliverables that will ensure the City's compliance with Measure M2.

We have also included optional tasks that can be delivered at minimal cost i.e., sign identification as well as the inventory of other assets within the right-of-way as our vehicle can collect both pavement distress as well as other asset data. We have previously done this for other agencies such as the Counties of Orange, Monterey, and Glenn as well as the City of Redondo Beach, San Clemente, and Kingman.

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2. Methodology and Work Plan

2.1 Scope of Work

Task 1. Kickoff Meeting and Project Management

NCE will first kick off the project with City staff via a virtual conference call; as a minimum, items to be discussed will include the following:

- Scope of work and project schedule
- Points of contact
- Updated Geographic Information System (GIS) shapefiles
- New management sections to add to the database
- Scheduling and access requirements for fieldwork
- Public safety concerns, requirements, and procedures
- Quality Control activities
- Maintenance and rehabilitation practices, and history
- Budget scenarios
- Other issues as appropriate

Prior to the kickoff meeting, NCE will prepare a detailed agenda which will be sent to City staff for review before the meeting. Additional progress meetings may be held at appropriate milestones to review the work performed and to address any questions or issues that arise.

Deliverables:

- Agenda and summary of meetings.

Task 2. Pavement Condition Survey and Pavement Condition Index (PCI) Calculations

NCE will perform pavement condition surveys on the entire Master Plan of Arterial Highways (25.7 centerline miles) and one-third of the local street and alley network (37.5 centerline miles), in accordance with ASTM D6433 standards. The evaluation of the pavement surface distress is based on three components:

- Type is defined as **'What kind of crack or defect is it?'** based on environmental distresses (e.g., block, longitudinal/transverse cracking, weathering) or load related distresses (e.g., alligator cracking, rutting).
- Severity is defined as **'How bad is the defect?'** in terms of the measurement or degree of wear associated with the condition.
- Extent refers to quantity or **'How much?'** of the pavement is affected by a particular distress.



Figure 2 – Pavement Distortions

For this project, our team is proposing a sophisticated semi-automated approach similar to the last cycle. Our goal is to provide accurate, repeatable, and economical pavement condition assessments using our **OCTA pre-qualified** mobile data collection equipment/team.

Our Roadway Collection Vehicle System is comprised of many sub-components in order to provide semi-automated, roadway results, such as travel distances, longitudinal roughness, transverse pavement profiles, wheel track rutting depths, as well as incorporating our GPS system, roadway reflectivity, and innovative 3D 360° imagery LiDAR mobile mapping solutions. Our pavement distress data collection process involves integrated distress laser pavement roadway scanners, which are all used to collect the type, severity, extent, start and stop points of all MTC pavement surface distresses.

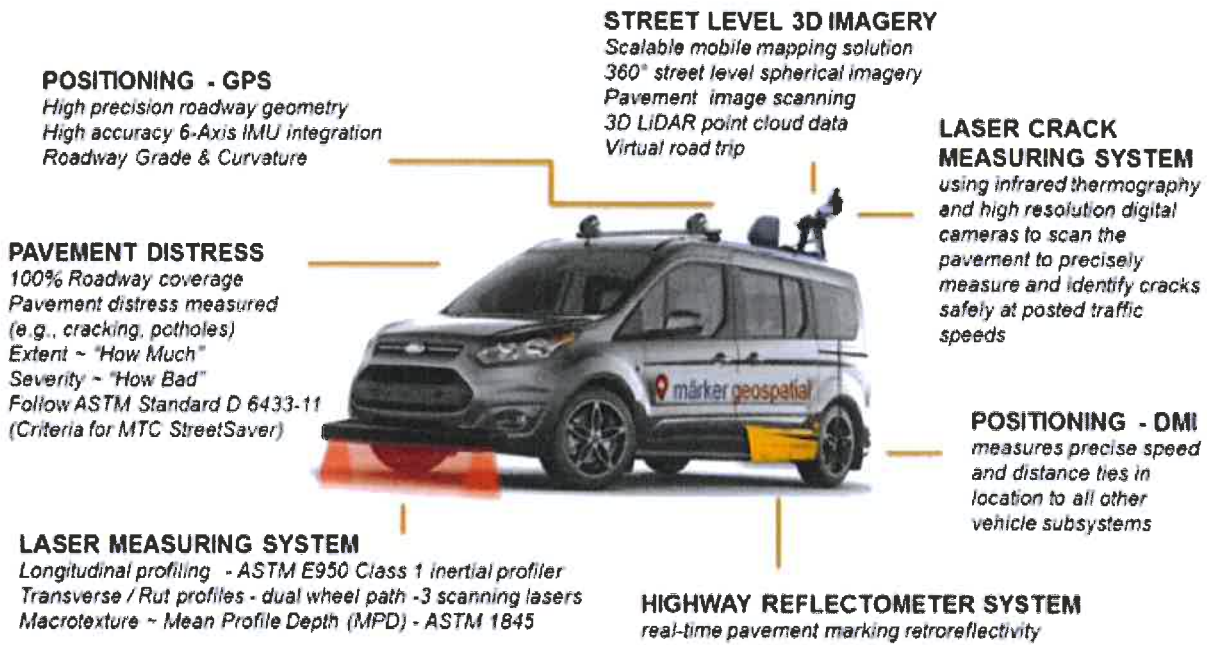
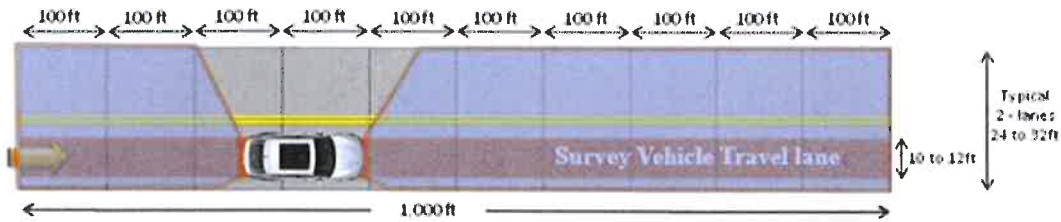


Figure 3 – Märker Geospatial Capabilities

In addition, our team complements this semi-automated process with **OCTA pre-qualified** inspectors in our survey vehicle to identify and confirm all pavement distress data by using our on-board surface distress recording subsystem. These specially designed pavement distress data entry devices are integrated with the vehicle’s GPS to allow inspectors to accurately quantify the severity and location of each pavement distress. This process allows 100 percent of the pavement area to be inspected at posted speed limits to avoid impeding or disrupting traffic flow. One survey pass per pavement section will be performed on one to two lane streets. Additional passes will be performed on streets with three or more lanes or divided streets (see survey coverage area below).



One or Two lane roads



Four + lane roads:

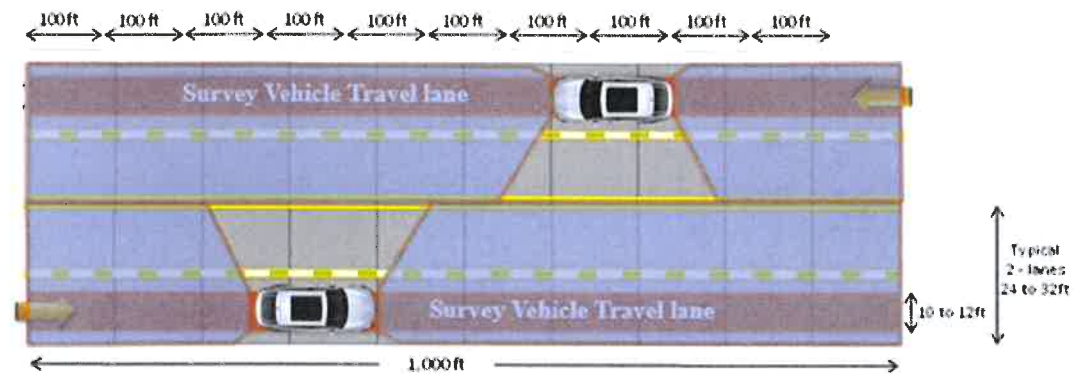


Figure 4 – Survey Coverage Area

Our team will be responsible for providing all equipment necessary for performance of this task. Should City personnel wish to observe our field crew during the inspection surveys, we will be more than happy to accommodate this.

As part of the data collection and entry, NCE will also collect and confirm additional street segment characteristics including street names, functional classification, pavement surface type, pavement area, and number of travel lanes. This information will be cross-checked with the existing information in the StreetSaver database. If required, the data will be updated to reflect the correct information.

Note that this scope of work and condition surveys do not address issues including, but not limited to traffic, safety and road hazards, geometric issues, road shoulders, sidewalks, curb and gutters, drainage issues or short-term maintenance that should be performed.

Quality Control

Quality Control/Quality Assurance (QC/QA) checks are critical on a project such as this when such a large amount of data needs to be collected and processed. As part of NCE's goal to provide a high-quality product for our clients, we incorporate a QC/QA component into all of our projects. For this project, we have proposed the inclusion of a QC Manager, Lisa Senn, who will have the following project responsibilities:

- Calibration of data collection activities
- Review of field activities, including spot checks on the field crews
- Reviewing field procedures and making changes as needed
- Comparing the field data collected with on-site conditions
- Review of all data entry functions, including random spot checks
- Review of reports and analyses to ensure quality products

Field QA/QC Step 1 - Correlation: The first step in this process is for NCE's Project Manager, Field Supervisor, and Field Technicians to meet in the field and drive a few roads and review some of the variety of pavement conditions that exist in the City. This is required to calibrate the team's view of the various distresses.

Field QA/QC Step 2 - Calibration: The QC team will conduct an independent calibration of equipment used to perform pavement condition assessments on the City's pavement networks. This task is required to ensure that the pavement data collected is consistent with standard protocols. Up to 25 pavement sites will be selected to the calibration. They will include a range of:

- Pavement Types (AC or PCC)
- Functional Classifications
- Pavement condition or age

Field QA/QC Step 3 - Re-inspection "Checks": A minimum of five percent of the sections will be re-inspected by other team members. Sections with a Pavement Condition Index (PCI) difference between the two assessments are flagged for re-inspection. At the time of re-inspection, the actual distresses will be re-inspected and verified, and any corrections made, if necessary. Distress types and severities must be the same, and re-measured quantities within $\pm 10\%$ of the original measured quantity.

If corrections are required on more than 10% of the re-inspected sample units, then an additional 5% will be re-inspected. This will continue until more than 95% of the re-inspected sections meet the acceptability criteria. The costs associated with additional re-inspections due to a failure to meet the acceptance criteria will be borne by NCE.

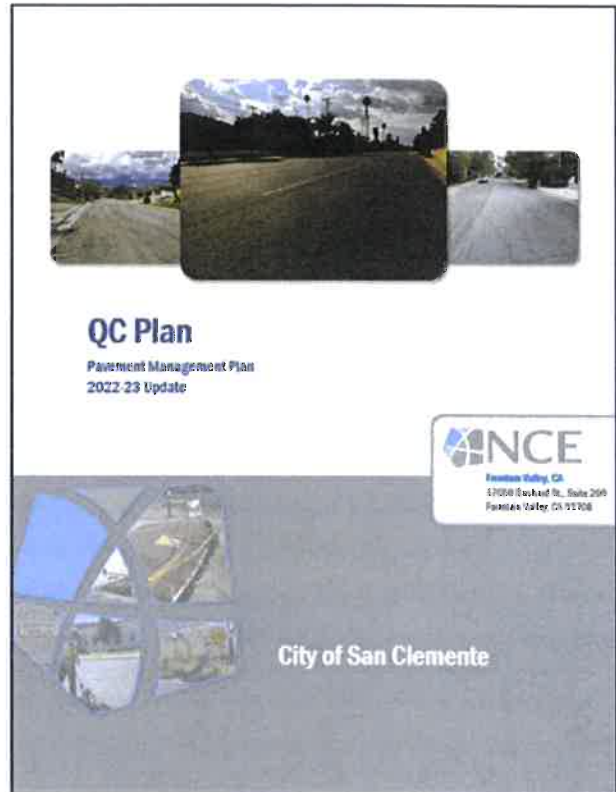
Prior to the start of the field assessments, the NCE team will meet with City staff to discuss City protocols for distress collection. Lane closures are not required as part of distress collection. Typically, any stopped vehicles will be parked in parking lanes, in nearby parking lots or on the shoulders, and will not in any way prevent the free flow of traffic.

Data Entry and PCI Calculations

All information collected from the condition surveys will then be uploaded into the StreetSaver® database. This task will be performed at NCE's office in order to provide Quality Control of all data entered into the system. NCE will then perform the PCI calculations and correct any errors found. A PCI listing report will be prepared and submitted to the City.

Deliverables:

- QC/QA Plan for City's approval
- PCI report
- Updated StreetSaver® database with street names, functional classification, pavement surface type, pavement area, number of travel lanes, and PCI



Task 3. Update Maintenance and Rehabilitation (M&R) History and Decision Tree

Development of the M&R strategies and reviewing the City's decision tree is a critical component of effective PMPs as it has a direct and significant impact on the budget scenarios and Work Plan. NCE, therefore, emphasizes the completion of this step as a separate task.

To do this, NCE will review with City staff, and revise as needed the M&R strategies. This will include a discussion of condition-appropriate treatments including conventional options such as slurry seals and overlays, as well as more cost-effective or recyclable treatments such as multi-layer seals, rubberized asphalt overlays, cold-in-place recycling, or full-depth reclamation. Based on our past projects and recent discussions with the City staff, the City predominantly does slurry seal with localized base repairs on majority of its street network. The City also does grind and overlay with base repairs on some of its streets. The primary purpose of this task will be to identify the unit cost of base repairs, slurry seal and grind and overlay to account for the recent fluctuation in asphalt prices based on recent bid tabs from the City as well as other cities in Orange County. Once revisions to the M&R strategies are confirmed, the unit costs will be estimated based on recent bid tabs from the City. The resulting updated Decision Tree will then be entered into the StreetSaver® database.

In addition, any M&R projects performed between 2020/21 and the present will be entered into the database as historical events. This assumes that City will provide a list or map of all M&R treatments performed in this time frame (since the last PMP update in 2020/21).

Deliverables:

- Updated StreetSaver® database with revised decision tree
- Updated StreetSaver® database with M&R history

Task 4. Budgetary Analysis and Report

NCE will perform a Budget Needs analysis for an analysis period of 7 years as per the OCTA requirement. This will identify the needed M&R for each pavement section and estimate the total annual financial impact over the entire analysis period. The Budget Needs analysis forms the basis for the Budget Scenario evaluations.

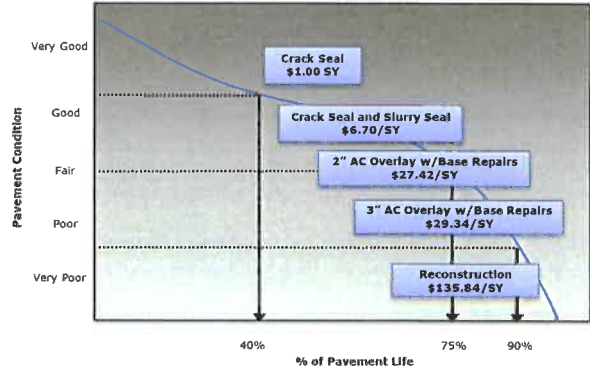


Figure 5 – Unit Cost for M&R Alternatives per City's 2021 PMP Report

Table 1. Budget Needs Analysis per City's 2021 PMP Report

Fiscal Year	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	Total
Budget Needs (\$M)	15.6	3.8	5.5	4.6	2.8	2.5	5.1	39.9
Rehabilitation (\$M)	11.9	2.4	4.0	2.2	0.6	0.2	0.6	21.9
Preventive Maintenance (\$M)	3.7	1.4	1.5	2.4	2.2	2.3	4.5	18.0
PCI without Treatment	83	81	79	77	75	74	72	N/A
PCI with Treatment	88	87	86	86	84	84	84	N/A

As per the OCTA requirement, NCE will perform up to 3 Budget Scenarios. These scenarios optimize the use of limited funding by selecting the most cost-effective sections for treatment. The scenarios prioritize street sections for repair under constrained, realistic, budgetary assumptions. Three budget- or target-driven scenarios will be performed as per the OCTA requirements. Examples of funding scenarios include:

- Impacts of existing funding level on PCI over the analysis period
- Funding levels to increase current PCI by one point for reporting period
- Funding levels required to maintain the PCI over the analysis period

The results will be used to develop a multi-year (e.g., seven-year) rehabilitation program that includes the treatment and when it will be applied to streets. This multi-year program will include the list of streets in a priority order based on the cost-benefit analysis, present pavement condition, current funding levels, accrued backlog levels, and future major and routine maintenance needs.

NCE will then prepare a draft PMP report that summarizes the overall condition of the pavement network, the maintenance & rehabilitation strategies, the results of budget needs analyses and scenarios, and the list of selected road sections for maintenance and rehabilitation. NCE will also provide PCI condition maps for the current network condition and the projected network condition for the various budget scenarios.

Upon receipt of the City's comments on the draft report, a final report will be completed and submitted to the City. As part of this task, NCE will also assist (up to 4 hours) in preparing a presentation for the City council.

Deliverables:

- Draft report (electronic) to be submitted by the end of March 21, 2023, if NTP is provided by January 9, 2023
- Final report (4 hard copies and electronic) to be submitted by the end of April 21, 2023, if NTP is provided by January 9, 2023

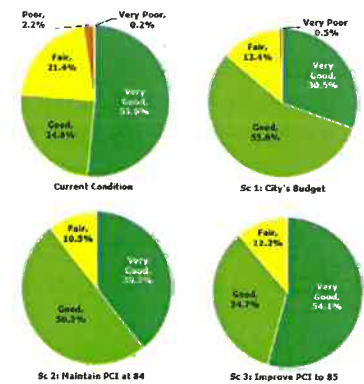


Figure 6 – Resulting Pavement Condition Breakdown for Scenarios from 2021 Report

Task 5A. Right of Way Sign Inventory

NCE collected the right of way sign inventory in 2020/21 and submitted the database with CAMUTCD codes for the entire network to the City. As part of this task, NCE will use the inventory data from the last report (2020/21) and augment with any new signs that has been added by the City since the last set of data was collected in 2020. **If no new signs were added by the City since the last inspection in 2020, then NCE will re-submit the previous inventory data at minimal to no cost to the City. Based on the City’s specific needs and the work that has been done by the City, we can provide an separate cost for this task.**

The cost provided with this proposal accounts for surveying the entire City’s Street network and updating all the new signs that have been installed since the last data collection in 2020. As part of this Task, NCE will inventory all the traffic signs within the City’s right of way, which is estimated to be 330 miles. NCE, having done this task as part of the last PMP update in 2020/21 is familiar with the details of this task and the data structure in the City’s Lucity work-order system. The City’s existing asset inventory contains corresponding FacilityID’s or unique ID’s used with Lucity. NCE will maintain these relevant Facility ID’s for future integration by the City with their work system. Newly collected assets that are not already in the existing database will be added to the database without a FacilityID.

NCE will collect the data using our distress data collection van and then analyze the data to populate/tag it as per the California MUTCD code, similar to what was done in 2020/21 asset inventory. As part of this project, NCE will use the data from the 2020/21 asset inventory and update it with any new traffic signs that have been installed since the last update. This approach will lead to substantial cost savings for the City while still having an up-to-date sign inventory. The attributes that will be collected as part of the sign inventory are shown in Table 2 under Section 8 - Other Information. Below is the summary of the Sign Inventory per the 2020/21 asset inventory report.

Table 2: Sign Inventory Update Summary as per the 2020/21 Report

Sign Type	Count
Regulatory	6,056
Warning	1,021
Guide	2,288
Object Marker	439
Custom	2,220
Other	817
Total Signs	12,841

Deliverable:

- Geodatabase file with signs identified as per California MUTCD
- Hard Drive with images

Task 5B. Additional Right of Way Inventory (OPTIONAL)

If desired, NCE can inventory striping and stencils, traffic signals, and curb markings. The data is captured as part of Task 5A and can be a significant cost savings to the City. Additional costs are incurred only when the data is extracted and populated in a geodatabase.

In addition, our team can also collect additional assets including curb ramps, cross gutters, guardrails and barricades etc. If the City is interested in additional inventory, our team will provide the cost associated with each asset.

Deliverable:

- Geodatabase file with striping, stencils, traffic signals and curb markings
- Hard Drive with Images

**Task 6. Ground Penetrating Radar (GPR)
(OPTIONAL)**

As an optional task, NCE will collect GPR data for the entire City street network. GPR is a non-destructive way to obtain a continuous asphalt concrete (AC) thickness profile. The GPR data together with limited coring, can be used by the City to determine the pavement thickness for a particular section of the roadway or for the entire network.

Please note the scope proposed in this proposal is limited to data collection. A separate fee proposal will be provided by NCE based on the lane miles that the City would like analyzed. The final output of the thickness profile can be profiled in plots or saved in a geodatabase. The average thickness of each section can also be uploaded into the City's StreetSaver® database if desired.

Deliverable:

- Unprocessed GPR Data



*Figure 7 – Hybrid StreetSaver® Training
at the City Office*



3. Project Organization and Staffing

3.1 Firm Profile

NCE, a corporation chartered in the State of Nevada, is a client-focused professional consulting firm integrating the disciplines of engineering, science, and planning to address the infrastructure and resource challenges facing our communities today and in the future. **Unique from other civil engineering firms, we have specialized in pavement technology, including pavement management, design, and research for more than three decades.**

We have performed pavement condition surveys ranging from state highways in 12 states to local street networks in over 200 cities and counties in California. We have surveyed over 100,000 miles of pavements, including alleys and parking lots. Our field data collection ranges from **walking surveys as per the American Society for Testing and Materials (ASTM) D6433 protocols** to using specialized automated equipment to collect data such as pavement distresses, roughness, structural strength (deflection testing) to asset data (signs, signals, curb ramps, marking, sidewalks, etc.). Our services include pavement evaluation, testing and design, civil engineering, and the research and design of sustainable and innovative pavement technologies.

NCE was established in 1990, and we have since grown to over 126 employees in seven offices throughout California, Nevada, and Arizona. More than 85% of NCE's revenues come from local, state, and federal agencies providing NCE with an in-depth understanding of current regulations, policies, and procedures, as well as best practices.

Services for this contract will be provided from our local Fountain Valley office, which is located approximately 35 minutes from the City's office.

3.2 Firm Qualifications

NCE's civil engineers and technicians have extensive experience in collecting pavement distress data, conducting analyses as well as developing plans, specifications, and construction cost estimates for infrastructure projects. Our team has extensive experience with state and local design standards and is familiar with both Caltrans pavement design standards and Standard Specifications as well as the American Public Works Association Standard Specifications for Public Works Construction "Greenbook". The City can count on our team to provide superior, responsive service on this project. Agencies repeatedly choose to work with NCE staff because of our collaborative style, our commitment to making sure each project is a success, and the confidence they have in our ability to complete the project to their satisfaction. Our fundamental goal is to produce high-quality work products, while maintaining a reputation for timely service. NCE provides the core capabilities and services listed below to our clients.



Collaboration. Commitment. Confidence.

32

YEARS STRONG



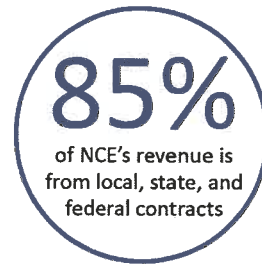
7
OFFICES

EMPLOYEES

126

Project Office:
17050 Bushard Street, Suite 200
Fountain Valley, CA 92708
P: (714) 848-8897
F: (714) 848-2667

Additional Office Locations:
Sacramento, CA
Oakland, CA
Richmond, CA
Lake Tahoe, NV
Reno, NV
Scottsdale, AZ



nccenet.com

- Asset/Pavement Management
- Pavement Testing, Analysis, and Design
- Civil Engineering Design
- GIS and Database Management
- Pavement Rehabilitation and Sustainability
- Deflection Testing and Coring
- Bike and Pedestrian Path Design
- Complete Streets and ADA Retrofit Design
- Green Infrastructure and Streetscapes
- Landscape Architecture
- Environmental Studies and Documents
- Regulatory Compliance and Permitting
- Stormwater and Water Resource Management
- Watershed Planning and Wetland Delineation
- Water Quality/Erosion Control Systems
- Sustainable Design/Low Impact Development
- Construction Documents (PS&E)
- Construction Management/Inspection
- Utility Relocation Design
- Hydrology and Hydraulic Analysis
- Stakeholder Facilitation/Public Outreach
- Hazardous Materials Assessments.

Pavement Management Expertise

NCE has extensive experience evaluating and implementing pavement management systems for numerous public agencies throughout California and the west coast. We are a nationally recognized pavement specialty firm, with broad capabilities and expertise in the areas of pavement management, civil engineering, and pavement design, evaluation, and analysis. We provide pavement management services and are proficient with most software currently in use, including PAVER™, StreetSaver®, and Cartegraph, which account for 76% of all California agencies. We are active in the pavement and asset management committees at the Transportation Research Board, a national research organization. With NCE's prior experience with hundreds of other cities on pavement management systems, as well as pavement designs, NCE will deliver accurate, reliable, consistent pavement data which may then be used by the City to develop the pavement management strategies and make future funding decisions.

NCE works closely with OCTA on numerous issues; we developed the original countywide PMP guidelines and can ensure that the City's submittals will be compliant with Measure M2.

NCE understands the City utilizes StreetSaver® as their PMP. NCE is well versed in StreetSaver®, as we have conducted OCTA's training for StreetSaver® for over ten years and assisted with the development of OCTA's M2 requirements. In addition, our technicians are OCTA certified inspectors. NCE and proposed staff offer the City a wealth of knowledge and skills working the program and utilizing the data to apply and recommend new pavement technologies.

Pavement Design & Analysis

NCE's expertise in pavement treatment alternatives includes cost saving, cutting-edge, and green/sustainable paving technologies, such as warm mix asphalt and in-place recycling technologies.

Pavement designs, plans, specifications, and estimates (PS&E) for preventive maintenance, rehabilitation, and reconstruction are NCE's specialty and we offer extensive experience and expertise with pavement treatment alternatives. Our civil and geotechnical engineers not only understand the types of pavements and treatment options, but also understand the significance and cost implications of proper roadway support on competent subgrade

soils to limit future settlement and cracking. Pavement design begins with an accurate assessment of the existing structural adequacy. Unlike traditional civil firms who rely on core samples, we employ our pavement survey expertise in conjunction with deflection data, continuous thickness data using ground penetrating radar (GPR), and materials testing to assess the engineering properties of the existing roadway more accurately.

Sustainable and Innovative Pavement Technologies

There are numerous pavement rehabilitation techniques available today with new binders, new additives, and polymers all of which may be applied in various layers to preserve pavement life. NCE constantly seeks to identify the most cost-efficient alternatives for cities and counties, such as CIR, cement stabilized pulverized base (CSPB), asphalt rubber hot mix asphalt (ARHM), warm mix asphalt, and terminal blend asphalt rubber binders. Many of the technologies NCE can implement will meet potential City sustainability or environmental goals and policies. Some examples are described in the following paragraphs.

Sustainable Pavements – NCE is involved with projects at both the national and local levels on issues, such as sustainable pavements, and premature failures. For example, Dr. Tom Van Dam is NCE’s Principal Investigator for the FHWA on Sustainable Pavement Systems. He has developed technical guidelines and a webinar series and is an internal resource for NCE when addressing sustainability for our projects.

Cool Pavements – NCE prepared a report to discuss cool pavement alternatives for the City of Chula Vista as a means of mitigating the urban heat island impact. This included the use of pavement alternatives, such as porous or permeable pavements, pavers, concrete pavements, and use of light-colored aggregates, etc.

Composite Pavements – NCE worked for the Strategic Highway Research Program (SHRP2 R21) to develop best practice standards for asphalt concrete (AC)/portland cement concrete (PCC) composite pavements nationwide. This project resulted in the development of best practices in construction, specifications, and quality management procedures for these pavements. NCE is currently teaching a series of workshops for State Highway Agencies nationwide to assist them

in implementing key best practices for composite pavements. While this work was funded and aimed at State Highway Agencies, the fundamental concepts of composite pavements and the best ways to implement them can be translated to cities, too.

Cold-In-Place Recycling – A cost-effective alternative to traditional mill and fill pavement treatments, cold-in-place recycling can yield cost savings of as much as 30% using existing AC materials, which produces less truck hauling and better time efficiency during construction. Longer pavement sections (generally at least 500,000 sf of pavement area) that require deeper mill and fills (typically at least three inches) are good candidates for cold-in-place recycling with potentially large cost savings.

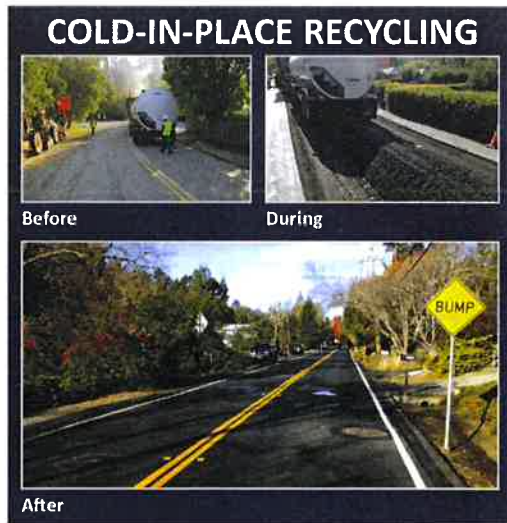


Figure 8 – Cold-In-Place Recycling

Full Depth Reclamation (FDR) – Full-depth reclamation is a process that reconstructs failed AC pavements by recycling the existing roadway materials. The old AC and aggregate base materials are pulverized and mined utilizing specialized equipment. The full-depth reclamation method recycles the materials in-situ and can offer significant cost savings over conventional roadway reconstruction techniques. It is generally cost-effective for areas as little as 25,000 square feet.

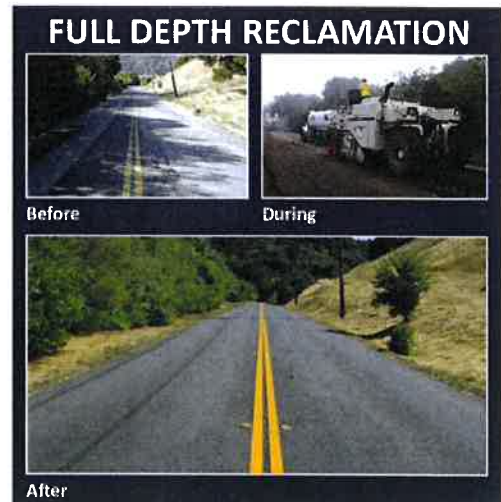


Figure 9 – Full Depth Reclamation

GIS Analysis, Modeling, and Mapping using the latest ESRI™ Software

NCE staff have an in-depth knowledge and understanding of the GIS needs of public entities and the importance of geospatial data in making critical resource, impact analysis, and management decisions. These decisions require well thought out tools that allow for efficient management, deployment, and dissemination of spatial data (both internal and external for the public). Our experience with GIS development and analysis, cartography, and asset management is extensive and includes projects for municipalities across California and Nevada. Our services include mobile data collection, integration with asset and PMP software, and detailed mapping capabilities using the latest ESRI™ software which include ArcGIS® and ArcPro.

Pavement and Civil Engineering

NCE's civil and pavement engineers and technicians have experience developing PS&E for many city, county, and state roadway projects. The benefit of this experience is that we thoroughly understand the impact recommended pavement designs can have on the roadway system. Elements include drainage improvements, ADA curb ramps and sidewalks, curb and gutter, traffic striping and signs, and utility relocation. NCE has excellent working relationships with pavement and grading contractors and we partner with reputable contractors to provide constructability review and cost efficiencies.

Special Equipment

NCE can evaluate pavement structural conditions with deflection testing using our Falling Weight Deflectometer (FWD). The FWD is a specialized tool that provides data to allow for preparation of cost-effective pavement designs. In-situ conditions can be quickly evaluated to determine issues, such as the extent of subgrade problems or the presence of voids/unstable soils. Pavement designs for phased or staged constructions are possible, as well as the ability to model and use new materials and technologies. NCE can also use GPR to determine the thickness of AC as well as depth of the top rebar in concrete pavement in a non-destructive manner. The GPR data can then be calibrated using limited core information. The GPR data can be collected at the same time as automated pavement distress data, thus leading to huge cost savings.



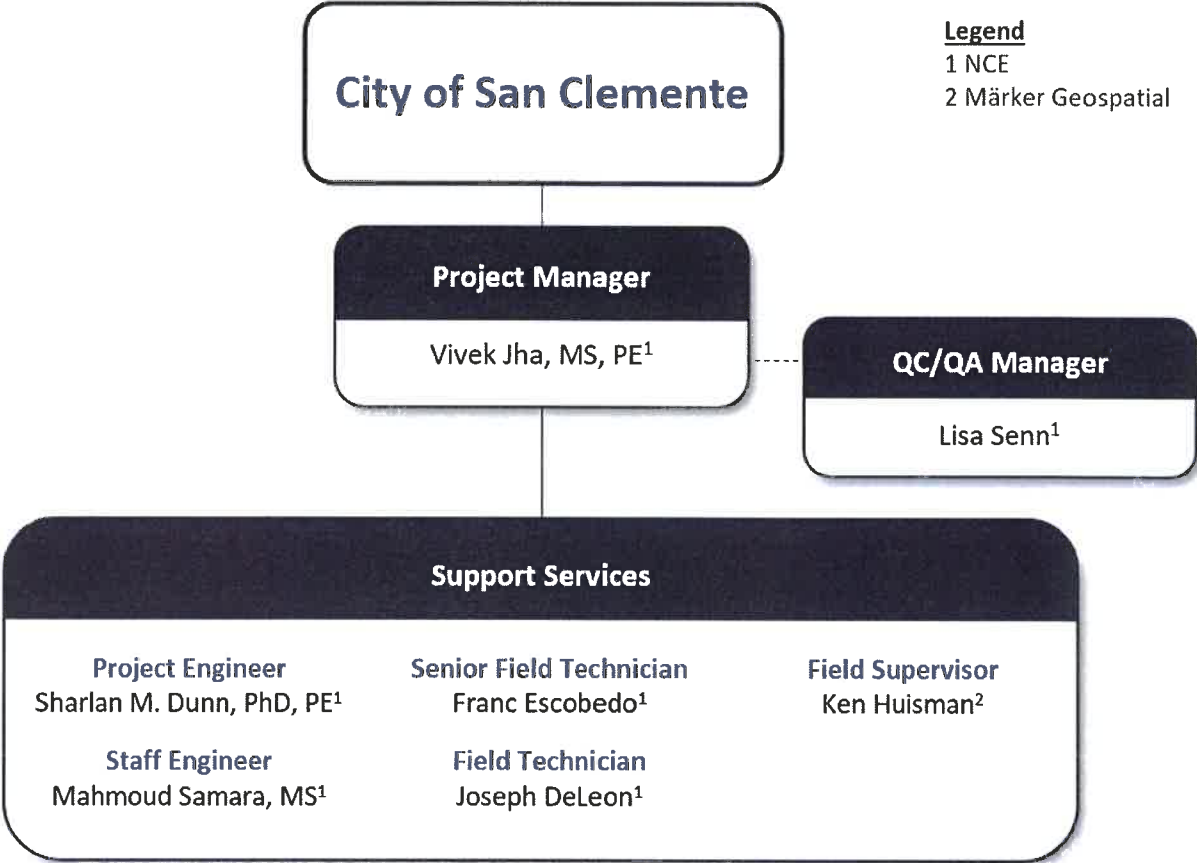
Figure 10 – Falling Weight Deflectometer

3.3 Organizational Chart

NCE has assembled a proven project team of highly qualified individuals who have the knowledge, expertise, and experience with PMP/PMS implementations, conversions, and updates using MTC's StreetSaver® pavement management software. NCE is dedicated to continuous training in the latest versions of software, design, and construction techniques. We not only frequently participate in such training, but also instruct and conduct extensive training including field distress and software workshops to 200+ technical staff within the engineering community.

The City can count on our team to provide superior, responsive service on this project. The NCE team is committed to the project for its duration; no personnel designated as key to the project shall be removed or replaced without the prior written concurrence of the City. The organizational chart provided below shows the structure and team we propose for this project, as well as the communication/reporting relationships of the key staff in relation to the City for this project.

The NCE team will be led by our proposed Project Manager, **Mr. Vivek Jha, MS, PE**. He is supported by an experienced and trusted team of professionals that have successfully worked together on multiple projects. In addition, all team members, including subconsultants, will be managed as an extension of NCE.



3.4 Project Team Responsibilities

Vivek Jha, MS, PE | Project Manager

Vivek is NCE’s proposed Project Manager. Vivek will be responsible for day-to-day project management and will be the City’s single point of contact. He will manage the development of the scope, budget, planning, scheduling, coordination and quality of the project and will also participate in key meetings. As part of the PMP update, he will direct the data collection activities, PCI calculations, budget analyses, and the preparation of reports. ***Vivek is locally based out of NCE’s Fountain Valley, California office. He has over 12 years of extensive experience in pavement design and evaluation, rehabilitation and maintenance, as well as pavement and asset management. Vivek has submitted multiple PMP reports and OCTA report ensuring NCE clients received their M2 funding. He is available 25% of the time to work on this project.***

Lisa Senn | QC/QA Manager

Lisa will be responsible for implementing NCE's quality control management program for the project. She will address QC/QA procedures and expectations for each team member and will provide the quality assurance review and its documentation of the documents that will be submitted to the client. *Lisa has over 23 years of experience completing pavement engineering and transportation projects, including managing PMP projects throughout Southern California; and has been with NCE for 11 years. In addition, Lisa was NCE's Project Manager for the City of San Clemente's previous PMP updates. She is available 20% of the time to work on this project.*

Sharlan M. Dunn, PhD, PE | Project Engineer

Sharlan will oversee the pavement and asset data collection and provide the analysis and interpretation of the data to update the City's 2023 PMP and deliver OCTA's submittal in compliance with Measure M2 requirement. *Sharlan has eight of experience in pavement management, maintenance, rehabilitation, design, and planning projects including various pavement engineering projects in Southern California; and has been with NCE for four years. Sharlan has worked on numerous Southern California PMP projects and successfully prepared OCTA PMP submittals. She is available 40% of the time to work on this project.*

Franc Escobedo | Senior Field Technician

Franc will perform the functions relating to data collection. Franc will also be actively involved in the quality control process. Franc has completed the MTC "Distress Identification" courses for Asphalt Concrete and Portland Cement Pavements and is pre-qualified as an OCTA Pavement Inspector. *Franc is locally based out of NCE's Fountain Valley, California office. He has twenty-two years of experience in collecting distress data for pavement management systems for NCE clients in Orange County. He is available 50% of the time.*

Joseph DeLeon | Field Technician

Joseph will perform the functions relating to data collection. Apart from conducting field inspections, he performs all functions related to data collection and is an active participant in the quality control process. Joseph has completed the MTC "Distress Identification" courses for Asphalt Concrete and Portland Cement Pavements and is pre-qualified as an OCTA Pavement Inspector. *Joseph is locally based out of NCE's Fountain Valley, California office. He has five years of experience in collecting distress data for pavement management systems for NCE clients in Orange County. He is available 50% of the time.*

Ken Huisman (Märker Geospatial) | Field Supervisor

Ken will be the field supervisor for this project responsible for data collection. *He brings more than 27 years of extensive experience in the pavement and infrastructure management consulting industry. Mr. Huisman has supervised the creation of large and complex public pavement infrastructure and GIS databases for many municipal, state, and federal projects. He has worked collectively with the NCE team on several pavement management programs using StreetSaver® and PAVER™, including the Cities of Anaheim, Baldwin Park, Burbank, Corona, Diamond Bar, Hermosa Beach, Manhattan Beach, Mission Viejo, Newport Beach, Redondo Beach, as well as the Counties of Orange, Santa Barbara, and San Diego. Marker is available 20% of the time. Ken is prequalified by OCTA for Automated data collection.*

3.5 Project Team Allocation of Hours by Task

Task Name	Vivek Jha	Lisa Senn	Sharlan M. Dunn	Mahmoud Samara	Franc Escobedo	Joseph DeLeon	Donna Alexander
Role	Project Manager	QA/QC Manager	Project Engineer	Staff Engineer	Senior Technician	Technician	Project Admin
% Availability	25	20	40	50	50	50	20
Task 1. Kickoff Meeting and Project Management	2	1	4	2			
Task 2. Pavement Condition Survey and PCI Calculations	1	4	2	4	22	32	1
Task 3. Update M&R History and Decision Tree	3	1	4	6	6		1
Task 4. Budgetary Analysis and Report	4	8	16	40			1
Task 5A. Right of Way Sign Inventory	1	2	4		8		1
Task 5B. Right of Way Sign Additional Assets (OPTIONAL)	1	4	8		16		1
Task 6. GPR Data Collection (OPTIONAL)	1		4	8			1

Note: The project members identified above are available to start working from January 9, 2023 or earlier and will be available for the entire duration of the project.

3.6 Project Team Resumes

Focused resumes highlighting education, experience, and applicable credentials for each key team member are provided on the following pages.

Vivek Jha, MS, PE | Project Manager

Vivek has over 12 years of experience in the pavement field. He specializes in pavement design and evaluation, rehabilitation and maintenance, and pavement and asset management. He has a wealth of experience in using non-destructive technology (such as automated distress data, GPR, and FWD) for pavement evaluation and design. Vivek is also adept at managing entire project life cycle including developing and maintaining project schedule, controlling project cost, tracking and documenting variance, developing technical reports, QA/QC of other reports and data. Vivek is a registered professional engineer in Maryland and New Jersey.

Representative Projects

Pavement Management Program Update

City of Anaheim, CA

Project Manager. The City has approximately 584 centerline miles and NCE has been assisting the City with updating the PMP since 2013 including transitioning from PAVER™ to StreetSaver®. Vivek is currently managing the latest round of their PMP update using StreetSaver®. He is responsible for the analysis and quality control of pavement distress data, updating maintenance and rehabilitation decision trees and the treatment unit costs, and the development of budget scenarios and summary reports including submitting the OCTA report for Measure M2 funding.

Pavement Management Program Update

City of Mission Viejo, CA

Deputy Project Manager. The City has approximately 178 centerline miles of local and collector streets and 52 miles of arterial highways. Vivek assisted the City with the latest round (2022) of their PMP update using StreetSaver®. As part of this project Vivek was responsible for the overall QA/QC of the project and ensuring the timely submission of the deliverables (draft and final reports and OCTA Report).

Pavement Management Program

City of Aliso Viejo, CA

Project Manager. The City has approximately 75 centerline miles of public streets. NCE assisted the City in updating the PAVER™ PMP. The previous citywide update was completed in 2018 in compliance with OCTA's M2 requirements. Vivek was responsible for the analysis and quality control of pavement distress data, updating M&R decision trees and the treatment unit costs, and the development of budget scenarios and summary reports.

Pavement Management and Road Surveying

San Diego County, CA

Project Manager. Deputy Project Manager. Covering an area of nearly 1,500 square miles, the County maintains approximately 1,950 centerline miles of roadways. The network is comprised of approximately 1,843 centerline miles of asphalt concrete roadways, with the remainder being exposed cement concrete or unpaved disintegrated granite. Vivek assisted in summarizing the work done by the County and its impact on the "Road to 70" goal and determined the determining the PCI of the underserved communities in each CPG. He is currently assisting the County in identifying sections with missing As-Built data based on 2015/16 and 2021 network distress survey.



Education

MS, Civil Engineering, Rowan University, 2009

BS, Civil Engineering, Sardar Patel College of Engineering, Mumbai, India, 2007

Registrations/Certifications

Professional Engineer – Civil
MD #52713

Professional Engineer – Civil
NJ #24GE05734600

Pavement Management
Training Levels 1 & 2, 2014

HMA Plant Technologist,
Superpave Levels 1 & 2

HMA Construction
Technologist

Affiliations

Advisory Board Member,
CREATES

ACRP Panel Member,
Automated Pavement
Condition Survey Practices at
Airports

Joined NCE

2022

Total Years of Experience

13 years

Lisa Senn | QC/QA Manager

Lisa's experience includes managing projects, overseeing field surveys and quality control procedures for cities and counties throughout California. A natural teacher, Lisa trains engineers, technicians, agencies, and municipalities on various aspects of pavement management, software, and field distress. Lisa has served as Project Manager and Key Trainer for OCTA PAVER™ and StreetSaver® Pavement Management Training Workshops. In addition, she was NCE's Project Manager for San Clemente's previous PMP update.

Representative Projects

Training and Technical Support

Orange County Transportation Authority, Orange County, CA

Project Manager and Key Trainer. OCTA in accordance with Measure 2 funding for the County and its agencies hired NCE and its staff to train local agencies and staff on the proper methods of collecting distresses on both asphalt concrete and Portland cement concrete. As well as how to perform budget analysis, updating unit costs for M&R work and preparing reports and other data required to be eligible for the funding. In addition, Ms. Senn has been the primary trainer for classes held each year since 2011. Classes cover the ASTM D6433-11 distresses (PAVER™) used during surveys. These classes include classroom discussions as well as field training on how recognize distress, how to collect area of distress, and how to determine severity of distress. Once distresses are collected Ms. Senn instructs participants on the use of the software. Class sizes vary between 10 to 35 participants.

Training and Technical Support

City of Santa Barbara, CA

Project Manager. In 2009, the City of Santa Barbara opted to provide in-house PMS operations, as opposed to consultants collecting distress data and preparing reports. Lisa prepared classes to teach the PAVER™ distress collection and quality control of collected pavement distress data, updating maintenance and rehabilitation decision trees and the treatment unit costs and the development of budget scenarios and summary reports. She assisted staff on the development of the cost-effective maintenance treatments and strategies and preparation of custom multiple-year detailed street maintenance plans and budget option reports.

Multiple Pavement Management System Implementations and Updates

Various Cities and Counties, CA

Project Manager and/or Quality Control Manager. For Pavement Management Program/System updates and implementations, Lisa is responsible for the analysis and quality control of pavement distress data, updating maintenance and rehabilitation decision trees and the treatment unit costs, and the development of budget scenarios and summary reports. She has developed the cost-effective maintenance treatments and strategies, prepared custom multiple-year detailed street maintenance plans and budget option reports, and linked GIS maps with management sections in the client's PMP database. She is also an advanced user of both the PAVER™ and StreetSaver® pavement management software. Some of her Southern California PMP/PMS clients include the following cities, counties and local agencies:

- Aliso Viejo
- Anaheim
- Buena Park
- Commerce
- Dana Point
- Diamond Bar
- OCTA
- Lake Forest
- Mission Viejo
- MTC
- Orange City
- Orange County
- San Clemente
- Seal Beach
- Stanton
- Yorba Linda



Education

AA, Business Administration,
Cuesta College, 1988

Certifications

Pavement Management
Training Levels 1 & 2, 2017

Affiliations

American Public Works
Association
Maintenance Superintendent
Association

Joined NCE

2011

Total Years of Experience

23 years

Sharlan M. Dunn, PhD, PE | Project Engineer

Sharlan has eight years of experience in pavement design, management, and research work. After joining NCE in 2018, she has enjoyed working on pavement design and pavement management projects for local agencies and airports throughout California. She currently serves as a project engineer for pavement management, maintenance, rehabilitation, design, and planning projects.

Her current clients include the Cities of Anaheim, Bakersfield, Davis, Fairfield, Fresno, Los Gatos, Oakland, Pacifica, and Sacramento, as well as the Counties of Alameda, Calaveras, Monterey, and San Diego. She is MTC certified to perform pavement condition surveys and is the instructor for several of MTC's StreetSaver® User Week workshops.

Representative Projects

Utility Cut Impact Study

City of Anaheim, CA

Project Engineer. This project was performed to determine the functional and structural impact of utility cuts on streets in Anaheim. In consultation with the City, Sharlan identified candidate utility cuts throughout the city, coordinated field data collection, performed analyses, and developed a utility cut fee schedule for the city that represents the amount of pavement damage utility companies are responsible for when they cut a pavement to perform underground utility work.

Valley View Avenue Rehabilitation Project

City of La Mirada, CA

Project Engineer. NCE provided pavement evaluation and design services Valley View Avenue, a highly traveled commercial corridor nearly a mile long with heavily deteriorated pavement. A pavement condition survey was conducted with distresses identified along with areas for potential base repairs. Coring, sampling and laboratory testing was performed and a pavement design and soils investigation report were prepared and included potential treatments with a focus on sustainable treatments and cost saving measures. Technical specifications were provided.

Pavement Management System Development and Updates

Various Cities and Counties; California, Idaho, Washington

Project Engineer. Sharlan has been involved in developing and updating pavement management system plans for several cities and counties in California, Washington, and Idaho. She has been responsible for pavement distress data collection, analysis, and quality control; maintenance and rehabilitation decision tree development with treatment unit cost estimates; budget scenario analyses; report preparation; and presentations to agency councils. She is fluent with both StreetSaver® and PAVER™ pavement management software. Some of her current/past PMS clients include:

- Anaheim
- Bakersfield
- Bell
- Campbell
- Citrus Heights
- Fairfield
- Fresno
- Fresno COG
- Glenn County
- Kings County
- Monterey County
- MTC
- Novato
- Oakland
- Presidio Trust
- Sacramento International Airport
- San Diego County
- Santa Ana



Education

PhD, Civil Engineering,
Purdue University, 2018

MS, Civil Engineering,
Brigham Young University,
2014

BS, Civil Engineering,
Brigham Young University,
2011

Registration/Certification

Professional Engineer – Civil,
CA #93268

MTC StreetSaver® Rater
Certification (expires 2023)

Affiliations

American Society of Civil
Engineers

Joined NCE

2018

Total Years of Experience

8 years



Franc Escobedo | Senior Field Technician

Franc Escobedo has over 22 years of experience as a pavement management technician for NCE. He has performed numerous pavement condition inspections throughout California, Idaho and Washington. His experience includes distress collection across various PMPs, including StreetSaver®, PAVER™, Cartographs, and Hansen systems. Additionally, Franc has completed both the OCTA PAVER™ and MTC “Distress Identification” courses for both Asphalt Concrete and Portland Cement Pavements and now assists with the training of agency staff on both courses.

Franc performs all activities relating to pavement data collection using hardcopy forms or tablets. As part of the quality control process, he performs crosschecks of data in the PMS database. He regularly performs quality control checks of field collected data and pavement maintenance history to ensure that PMS databases are accurate and up-to-date. During this process, he generates detailed reports that are necessary to perform his crosschecks of the collected data.

Representative Projects

Pavement Management and Road Surveying
San Diego County, CA

Field Technician. Collecting distress data for AC/PCC surfaces as per ASTM D6433 standards. Inspected control sections for a prior automated survey.

Pavement Condition Surveys
Various Cities and Counties, CA

Field Technician. Listed below are a collection of agencies that he has performed condition inspections. Projects included various forms of inspections for pavement distress data collection, such as walking, windshield and/or automated survey. Some of his current/past PMP/PMS clients include:

- Aliso Viejo
- Anaheim
- Bakersfield
- Baldwin Park
- Bell
- Buena Park
- Burbank
- Camarillo
- Campbell
- Chula Vista
- Commerce
- Contra Costa County
- Corona
- Dana Point
- Diamond Bar
- Downey
- East Palo Alto
- Fresno County
- Elk Grove
- Fullerton
- Hayward
- Highland
- Hillsborough
- Humboldt County
- Inyo County
- La Habra
- Lake Forest
- Las Vegas
- Lemon Grove
- Manhattan Beach
- Marin County
- Mendocino County
- Mission Viejo
- Mono County
- Monterey
- Monterey County
- Mountain View
- Napa County
- Newport Beach
- Oakland
- Orange
- Orange County
- Oxnard
- Richmond
- San Clemente
- San Diego City
- San Diego County
- San Francisco
- San Marino
- San Mateo County
- Santa Barbara
- Santa Cruz
- Santa Cruz County
- Santa Monica
- Seal Beach
- Siskiyou County
- Sonoma County
- Stanislaus County
- Thousand Oaks
- Torrance
- Tuolumne County
- Tustin
- Vernon
- Vista
- West Covina
- Yorba Linda



Education
Computer Operations Program, Computer Learning Center, Los Angeles, CA, 1983-84
Network Engineering and Administrative Program
Computer Learning Center, Anaheim, CA, 1997
Certified Network Administration
Computer Learning Center, Anaheim, CA 1997

Certifications
MTC StreetSaver® Rater Certification Program (expires 2023)
OCTA PAVER™ Certification (expires 2023)

Joined NCE
2004

Total Years of Experience
22 years



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4. Related Experience

NCE is a leader in the field of pavement management and design and has successfully diversified its services over the last 30 plus years while still maintaining its reputation as experts in the field of pavement research, management, design and reconstruction. NCE’s expertise in pavement management systems is exemplified by our close relationship with OCTA; our firm prepared OCTA’s Countywide PMP guidelines, as well as conducts the PAVER™ training for over 100 city/county engineers in Orange County. NCE is well versed in California’s pavement management standards, regulations and the latest software. We remain at the forefront of the latest PMP technology and methodology.

NCE has performed PMP/PMS implementations and updates for more cities and counties than any other firm in California.

More than 85% of NCE’s revenue is from local, state, and federal contracts. NCE understands public agencies, particularly cities and counties – their culture, funding, and relationships. NCE professionals know what is required technically and politically to deliver projects. NCE has performed pavement condition surveys ranging from state highways to local street networks in California, Oregon, Nevada, Washington, and Idaho.

NCE experts have surveyed more than 100,000 miles of pavement. The map below illustrates the California agencies where we have performed pavement related work. NCE has completed over 200 identical or similar projects throughout California delivering similar services, including PMP/PMS updates for over 80 cities and counties in Southern California alone. We are currently providing or have provided PMP/PMS related services for the following agencies:

- City of Aliso Viejo*
- City of Anaheim*
- City of Baldwin Park
- City of Bell
- City of Buena Park*
- City of Burbank
- City of Carson (CA)
- City of Corona
- City of Dana Point*
- City of Downey
- City of Garden Grove*
- City of Huntington Park
- City of Laguna Niguel*
- City of Lemon Grove
- City of Lake Forest*
- City of Manhattan Beach
- City of Mission Viejo*
- City of Moreno Valley
- City of Newport Beach*
- City of Orange*
- City of Redondo Beach
- City of Santa Ana*
- City of Santa Monica
- City of Seal Beach*
- City of Stanton*
- City of Temple City
- City of Torrance
- City of Ventura
- City of West Covina
- City of Whittier
- City of Yorba Linda*
- County of Orange*
- County of Santa Barbara
- County of San Diego



NCE provided OCTA Measure M2 compliance submittals for many of the clients denoted with an asterisk (*). The City of San Clemente can be assured that NCE will continue to prepare submittals efficiently and cost-effectively.

Below are examples of relevant PMP projects in Southern California that NCE has successfully delivered within the last five (5) years with references that can attest to our level of experience and client satisfaction. These projects also demonstrate the PMP expertise as well as the experience and capabilities that we can provide to the City.

NCE | Pavement Management Program Updates, City of San Clemente



Client:

Zak Ponsen, PE, Senior Civil Engineer
City of San Clemente
910 Calle Negocio, Suite 100
San Clemente, CA 92673

Phone:

(949) 366-4741

Email:

PonsenZ@San-Clemente.org

Dates:

2013 – 2021

NCE was selected by the City to perform a pavement management program update in 2013, 2015 and 2021. During this time frame, NCE was tasked with performing visual/walking surveys and semi-automated survey on the City's Master Plan Arterial Highway and Local street sections. This was needed in order to fulfill the requirements of OCTA's Measure 2 guidelines. As part of the update, NCE performed the following:

138.4
Center Miles

- A peer review of the 2013 report
- Field verified pavement inventory
- Performed distress/condition surveys of all City maintained streets using ASTM D6433
- Calculated PCI for each street section.
- Performed budgetary analyses including three funding scenarios
- Developed a seven-year maintenance and repair work plan
- Prepared final report included in submittal to OCTA
- Sign, pavement marking, and sidewalk asset inventory performed in 2021

Key Personnel: Lisa Senn (Project Manager), Franc Escobedo & Joseph DeLeon (Field Technicians)

NCE | Pavement Management Program Updates, City of Dana Point



Client:

Matthew Sinacori, PE
Public Works Director/City Engineer
City of Dana Point
33282 Golden Lantern
Dana Point, CA 92629

Phone:

(949) 248-3574

Email:

MSinacori@danapoint.org

Dates:

2013 – 2022

The City has a street network of approximately 93.5 centerline miles or approximately 490 pavement sections. NCE's scope of work consisted of:

- Converted PAVER™ databases to StreetSaver® in 2016
- Verified all street inventory, i.e., lengths, widths and locations
- Inspecting all streets using ASTM D6433-11 protocols. (2014, 2016, 2018, 2020 and 2022)
- Updated maintenance history
- Developed maintenance strategies and updated the decision tree
- Performed multiple budget scenarios
- Linked the database to a GIS shapefile
- Developed a seven-year work plan
- Prepared reports for OCTA certification

93.5
Center Miles

In addition, data on various non-pavement assets were collected in 2014 and stored using the EarthMine software. Concurrent with the pavement condition survey, mobile data collection units gathered high-resolution 360 degree geo-referenced right-of-way street level digital imagery along with 3D point cloud data. This mobile mapping system has the ability to visualize, measure, edit, and validate infrastructure assets (such as pavements, markings, lanes, surface areas, shoulders, signs, and drainage features) with a high level of accuracy.

Key Personnel: Lisa Senn (Project Manager), Franc Escobedo & Joseph DeLeon (Field Technicians)

NCE | Pavement Management Plan Updates, City of Anaheim



Client:

Jason Thiem
Associate Civil Engineer
City of Anaheim
200 South Anaheim Boulevard
Anaheim, CA 92805

Phone:

(714) 765-5100 Ext. 5473

Email:

jthiem@anaheim.net

Dates:

2017 – Ongoing

NCE updated Anaheim's PMS in compliance with OCTA's Measure M2 requirements from 2013 to 2021 and the contract continues through 2023. The street network consists of approximately 584 centerline miles of pavement including 155 miles of Arterial Highway System (AHS) and 429 centerline miles of Local Street System (LSS). Project tasks have included:

- Distress/condition inspections as per ASTM D6433
- Collected ride quality (International Roughness Index) and digital images of the pavements
- Updated the maintenance and rehabilitation (M&R) history
- Created shapefiles and KML files with the pavement condition information
- Implemented a rigorous QC plan for data control and delivery
- Performed funding scenarios:
 - Targeted seven-year network average Arterial PCI of 75 and PCI 71 for local streets with no more than a 12% backlog
 - Maintained the current backlog of streets, i.e., PCI<40 or 12%
 - Maintained current PCI: Arterial PCI of 73 and local street PCI of 69
 - Performed additional scenarios per OCTA guidelines
- Prepared all reports and submittals to OCTA
- Identified missing sidewalk gaps.

584

Center Miles

In 2019, the City converted its pavement management database from PAVER™ to StreetSaver® as it allows the analysis for Target Driven PCIs.

Key Personnel: Vivek Jha (Project Manager), Lisa Senn (QC Manager), Sharlan M. Dunn (Project Engineer), Franc Escobedo & Joseph DeLeon (Field Technician), Ken Huisman (Field Supervisor)

NCE | Pavement Management Program Updates and StreetSaver® Conversion, Orange County



Client:

Krishnamenon Nadaraja, PE
Senior Civil Engineer
Orange County
300 North Flower Street
Santa Ana, CA 92703

The County and its contracted cities have a road network of approximately 674 centerline miles or approximately 3,604 pavement sections. The County Road network consists of approximately 378.4 centerline miles. NCE's scope of work consists of:

- Converted the PAVER™ databases to StreetSaver® in 2016
- Verifying all road inventory (lengths, widths, and locations)
- Inspecting all roads using ASTM D6433 protocols
- Updating the maintenance history
- Developing maintenance strategies and updating the decision tree
- Performing multiple budget scenarios
- Linking the database to a GIS shapefile
- Developing a seven-year work plan
- Preparing reports for OCTA certification

378.4

Center Miles

Data on various non-pavement assets were collected and stored using the EarthMine software. Concurrent with the pavement condition inspection, mobile data collection units gathered high-resolution 360-degree geo-

NCE | Pavement Management Program Updates and StreetSaver® Conversion, Orange County

Phone:
(714) 245-4516

Email:
krishnamenon.nadaraja@ocpw.ocgov.com

Dates:
2009 – 2024 (ongoing)

referenced right-of-way street level digital imagery along with 3D point cloud data. This mobile mapping system has the ability to visualize, measure, edit, and validate infrastructure assets with a high level of accuracy.

The County has just requested NCE to begin the PMP updates for 2023.

“Thank you to you and your team for all your efforts in providing the County of Orange with the Year 2 deliverables. Due to the difficulties encountered with the large number of assets within the County, this was quite a task. We are very happy with the final product and look forward to the kickoff meeting for Year 3. The extensive work put in by NCE and Cartegraph is much appreciated.”

– Steven R. Clayton, Pavement Management Supervisor, County of Orange

Key Personnel: Lisa Senn (Project Manager), Vivek Jha (Project Engineer), Franc Escobedo & Joseph DeLeon (Field Technician), Ken Huisman (Field Supervisor)

NCE | Pavement Management Program Implementation and Updates, City of Mission Viejo



Client:
Rich Schlesinger, PE
City Engineer
City of Mission Viejo
200 Civil Center
Mission Viejo, CA 92691

Phone:
(949) 470-3079

Email:
rschlesinger@cityofmissionviejo.org

Dates:
1997 – 2022

NCE implemented Mission Viejo’s PMS in 1997 and has performed updates every two years since then (with the most recent update completed in 2022). The City has approximately 178 centerline miles of local and collector streets and 52 miles of Master Plan Arterial Highway (about 1,082 pavement sections). All of the City’s streets were inspected and a database was created to store the pavement inventory and pavement condition data. Pavement maintenance and rehabilitation historical records were also entered into the database. NCE has performed the following tasks:

- Condition inspections as per ASTM D6433-11
- Calculated a Pavement Condition Index (PCI)
- Updated M&R strategies and life cycle costs
- Determined the budget needs of the road network
- Provided input for Grant Applications
- Prepared seven-year Capital Improvement Program
- Prepared submittal to OCTA for Measure M2 program
- Presentation to City staff
- Technical assistance.

178
Center Miles

In addition, the City has used both the StreetSaver® and PAVER™ software programs.

Key Personnel: Vivek Jha (Deputy Project Manager), Lisa Senn (Project Manager), Franc Escobedo & Joseph DeLeon (Field Technician), Ken Huisman (Field Supervisor)



5. Project Schedule

Task Description	Weeks After NTP														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	NTP: 1/9/2023				2/10/23	2/17/23					3/24/23				4/21/23
Task 1. Kickoff Meeting and Project Management	X														
Task 2. Condition Surveys & PCI Calculations					◆										
Task 3. Update M&R History & Decision Tree						◆									
Task 4. Budgetary Analysis & Reports											◆				◆
Task 5A. Right of Way Sign Inventory											◆		City's Review		◆

Assumptions:

NTP to be provided by January 9, 2023

◆ Milestone

Task 1 - Includes 1 kick-off meeting and 1 progress meeting (both virtual)

Task 2 includes all MPAH and 1/3rd of the local street and alley network (approximately ~70 centerline miles).

Task 2 to be completed within 5 weeks of NTP

Task 2 includes QC

Task 2 does not include any weather delays.

Task 3 includes updating M&R history since last PMP update in 2021.

Task 4 & 5 includes 2 weeks for City's review of the draft report.

Task 4 - Draft Report to be submitted by 3/24/23 & Final report to be submitted by 4/21/23.

Task 5 includes right of way sign inventory with CAMUTCD codes for the entire City.

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6. Proposed Fee

NCE's cost estimate for the above scope is shown in the table below. The proposed price will be valid for a period of at least 90 days.

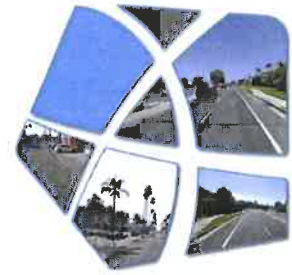
**City of San Clemente
 PAVEMENT MANAGEMENT SYSTEM UPDATE
 Cost and Time Estimate**

Role	Hourly Breakdown by Task							Sub	Expenses	Task Totals
	Project Manager	QC/QA	Project Engineer	Staff Engineer	Senior Technician	Technician	Project Administrator			
Name	Vivek Jha	Lisa Senn	Shantan Montgomery Dunn	Mahmoud Samara	Franc Escobedo	Joseph DeLeon	Donna Alexander	Marker		
Rate: \$/Hr	\$ 220	\$ 190	\$ 175	\$ 150	\$ 110	\$ 100	\$ 100			
Task										
Task 1. Kickoff Meeting and Project Management	2	1	4	2					\$ 4,170	\$ 5,800
Task 2. Condition Surveys & PCI Calculations-Walking	1	4	2	4	22	32	1	\$ 11,528	\$ 1,422	\$ 20,600
Task 3. Update M&R History & Decision Tree	3	1	4	6	6		1		\$ 90	\$ 3,300
Task 4. Budgetary Analysis & Reports	4	8	18	40			1		\$ 600	\$ 11,900
Task 5A. Right of Way Sign Inventory	1	2	4		8		1	\$ 10,577	\$ 143	\$ 13,000
Task 5B. Right of Way Sign Additional Assets (OPTIONAL)	1	4	8		16		1	\$ 23,881	\$ 379	\$ 26,500
Task 6. GPR Data Collection (OPTIONAL)	1		4	8			1		\$ 12,780	\$ 15,000
Totals without Optional Tasks	11	16	30	52	36	32	4	\$ 22,105	\$ 6,425	\$ 54,600
Totals with Optional Task 5B	12	20	38	52	52	32	5	\$ 45,986	\$ 6,894	\$ 83,100
Totals with Optional Task 6	12	16	34	60	36	32	5	\$ 22,105	\$ 19,205	\$ 69,600
Totals with Optional Tasks 5B & 6	13	20	42	60	52	32	6	\$ 45,986	\$ 19,584	\$ 98,100

Assumptions:

- Task 1 assumes one kickoff meeting and one progress meeting (both virtual).
- Task 2 includes surveys for approximately 73 centerline miles of streets with semi-automated surveys.
- Task 3 assumes one virtual meeting to update the decision tree.
- Task 4 includes one draft report (electronic); one final report (4 hard copies & 1 electronic).
- Task 5 includes support for council presentation at no extra cost to the City.
- Task 5 assumes data collection and extraction of the sign inventory on the entire City's street network.
- Task 6 assumes data collection for the entire City's network.

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7. Statement of Compliance

This proposal is in strict compliance with the Request for Proposal and the City's Standard Professional Services Agreement and no exceptions to either are proposed.

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8. Other Information

Provided on the following pages are the following:

1. Schedule of Charges
2. Proposed Sign Inventory Database Structure
3. San Clemente 2021 PMP Update QC Plan prepared by NCE

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SCHEDULE OF CHARGES 2022 – PAVEMENT MANAGEMENT PROJECTS

PROFESSIONAL SERVICES

Principal.....	\$250/hour
Associate	\$220/hour
Senior	\$190/hour
Project.....	\$175/hour
Staff.....	\$150/hour

TECHNICAL SERVICES

Senior Construction Manager*.....	\$170(\$195-PW)/hour
Senior Designer	\$155/hour
Senior Technician/ Construction Inspector*.....	\$110(\$145-PW)/hour
CAD Technician.....	\$115/hour
Senior Field Scientist	\$125/hour
Field Scientist.....	\$100/hour
Project Administrator	\$90/hour
Field/Engineering Technician*	\$100(\$115-PW)/hour
Technical Editor	\$100/hour
Technical Admin.....	\$100/hour

CONTRACT LABOR

From time to time, NCE retains outside professional and technical labor on a temporary basis to meet peak workload demands. Such contract labor will be charged at regular Schedule charges.

LITIGATION SUPPORT

Engineer/Scientist	\$330/hour
Court Appearances & Depositions	\$550/hour

EQUIPMENT

Plotter Usage.....	(separate fee schedule)
Truck	\$140/day
Automobile.....	IRS Standard Mileage Rate+15%
Falling Weight Deflectometer Testing	\$3,500/Day
Coring	\$4,500/Day
Environmental Equipment.....	(separate fee schedule)

OUTSIDE SERVICES

Rental of equipment not ordinarily furnished by NCE and all other costs such as special printing, photographic work, travel by common carrier, subsistence, subcontractors, etc.....cost + 15%

**COMMUNICATION/
REPRODUCTION**

In-house costs for long-distance telephone, faxing, postage, printing and copying project labor charges x 5%

TERMS

Billings are payable upon presentation and are past due 30 days from invoice date. A finance charge of 1.5% per month, or the maximum amount allowable by law, will be charged on past-due accounts. NCE makes no warranty, either expressed or implied, as to its findings, recommendations, specifications, or professional advice except that they are prepared and issued in accordance with generally accepted professional practice.

*A surcharge of \$25/hour applied for technicians and construction inspectors to comply with Prevailing Wage (PW) per requirements of California Department of Industrial Relations.

Table 3: Sign Inventory Database Structure (* indicates updated field)

Field Name	Field Type	Field Description
OBJECTID*	Object ID	Unique Record ID.
Shape*	Geometry	Updated GIS x and y coordinates for sign support locations. Horizontal Coordinate System: NAD 1983 State Plane California Zone VI FIPS 0406 (US Feet)
FACILITYID*	Text	Unique Sign ID. Note: All signs with a FACILITYID field value >= "SMSI-30000" are new signs that didn't previously exist in the City's sign database.
SIGNTYPE*	Text	Sign Type (Regulatory, Warning, Guide, Object Marker, Custom, or Other). Note: "Custom" if the sign does not appear to be a CA MUTCD standard sign, see custom sign pictures for reference - MUTCD= SC_XXXX. "Others" include - "UNKNOWN" = not visible/not facing street, "REMOVED" = sign no longer exists, or "NOT CITY STREET" = not on a City-maintained roadway.
SIGNHEIGHT	Double	
MUTCD*	Text	CA MUTCD sign code. Note: CA MUTCD manual available online from Caltrans at https://dot.ca.gov/programs/safety-programs/camutcd/ .
FACING*	Text	Refers to the direction of travel the sign is facing. Example: A sign is facing "North" to northbound traffic. Double-sided signs such as "street name" signs may contain "North/South, East/West" as they face two directions simultaneously.
LASTEDITOR*	Text	Group/individual last performed record edits (ESRI-Anonymous, NCE-MG, OHANAJ).
POLETYPE*	Text	Sign support "pole" type (Concrete, Fiberglass, Metal Pole, Painted Metal, Square Channel, Street Light, U-Channel, Wood Post, Other, or "N/A - Not available").
SIGNPOSITION*	Text	Sign Position (Roadside, Median, Bridge Soffit, Parking Lot, Other, or <Null>).
NOTES	Text	
ATTACHMENT	Text	
DOUBLEPOST*	Text	Sign resides on multiple or "double" sign supports (Yes, No, or <Null>).
VRR*	Text	Sign VRR (Yes, No, or <Null>).
OPERATIONALSTATUS	Short Integer	
MGNOTES*	Text	As needed NCE/Marker Geospatial field "observation" notes.
SCLFACID*	Text	Unique ID [SCLFACID] for San Clemente street centerline shapefile as provided by City (CENTERLINES_2020.shp).
POLEID*	Text	Unique street sign Pole ID. Note: Multiple signs located on the same support carry the same [POLEID].
FACILITYIDBAK*	Text	Backup of the Unique Sign ID prior to the 2020 update. Newly added records are blank.
GlobalID	Global ID	

Field Name	Field Type	Field Description
SIGNWIDTH	Double	
SIGNDESCRIPTION*	Text	CA MUTCD Sign Description. Note: Descriptions taken online from Caltrans at https://dot.ca.gov/programs/safety-programs/sign-specs .
ATTACHED	Text	
SIGNTEXT	Text	
HORIZFROM	Text	
HORIZCLEAR	Text	
VERTFROM	Text	
ANGLE	Text	
DISTTOTOP	Double	
REFLCOAT	Text	
SHEETING	Text	
SUPMATERIAL	Text	
INSTALLDATE	Date	
CONDITION	Text	
LASTUPDATE*	Date	Date of survey/record update.
SIGNELEV	Double	
STREET	Text	
OWNEDBY	Text	
MAINTBY	Text	
COLLECTMETHOD	Text	
ROUTEGRID*	Text	Unique ID [ROUTE_GRID] for San Clemente maintenance grid shapefile as provided by City (GRID_10_CSC.shp).
LUCITYLINK	Long Integer	
INLUCITY	Short Integer	
LASTSYNDATE	Date	
LUCITYCATEGORYCODE	Text	
LUCITYCATEGORYTEXT	Text	
LOCATION	Text	
ACTIVEFLAG	Short Integer	
TRACTNAME	Text	



QC Plan

Pavement Management Plan
2021 Update



Fountain Valley, CA
17050 Bushard St., Suite 200
Fountain Valley, CA 92708



City of San Clemente

The content of this report is the confidential property of NCE and should not be copied, modified, retransmitted, or used for any purpose except with NCE's written authorization.



TABLE OF CONTENTS

1. Introduction.....	1
1.1. Objectives.....	1
1.2. Structure	2
2. QC Plan	2
2.1. Condition Inspection Procedures.....	2
2.2. Accuracy Required For Data Collection	3
2.3. Inspectors' Qualifications and Experience	4
3. Safety Procedures.....	6

Appendix C1 - Resumes of Field Inspectors



1. Introduction

When performing data collection in any field, the need for quality control is paramount as it is essential for accurate planning, analysis, and design. This is particularly true for collecting pavement distress data for a pavement management system. NCE's "Quality Assurance Management Plan" (QAMP) affirms that:

"NCE is dedicated to achieving technical and management excellence and to delivering professional engineering and environmental services that meet or exceed our clients' needs. NCE's Quality Control (QC) Program is designed to achieve these goals. This QA Management Plan (QAMP) describes NCE's QA Program, which is based on four principles: client satisfaction, employee participation, problem prevention, and continuous quality improvements."

NCE's QAMP establishes minimum quality standards for performance and procedures for assuring that our clients receive quality service. It requires the participation of employees at every level. It encourages project managers and technical staff to take pride in their work and responsibility for ensuring that the work is done correctly the first time. The program is designed to reduce the incidence of problems related to quality and results in implementation, where necessary, of corrective actions and modification of work procedures to minimize the incidence of future problems.

NCE has also prepared detailed and specific Quality Control (QC) Plans for projects, and the most notable example is for the **Long Term Pavement Performance (LTPP) – Western Regional Support Contract** for the Federal Highway Administration. This is a 150-page document that covers data collection on highways, including deflection, profile, pavement distresses, traffic, maintenance and rehabilitation history, materials testing and sampling as well as a document control.

1.1. Objectives

This document constitutes a formal QC Plan for the City of San Clemente (City). It was prepared on September 9, 2020 and last revised on April 14, 2021. Specifically, it is intended for the 2021 Pavement Management Plan update. The focus is on the collection of network-level pavement distress data (defined by NCHRP Synthesis 401 *Quality Management of Pavement Data Collection*, as "Network-level data collection involves collection of large quantities of pavement condition data, which is often converted to individual condition indices or aggregated into composite condition indices.")



1.2. Structure

The following components are addressed in this QC Plan:

- Condition inspection procedures used
- Accuracy required for data collection
- Inspector qualifications and experience
- Safety

2. QC Plan

2.1. Condition Inspection Procedures

The governing document in performing condition inspections for City is ASTM D6433-11 "Standard Practice for Roads and Parking Lots Pavement Condition Index (PCI) Surveys." Both asphalt concrete (AC) and Portland cement concrete (PCC) pavements are included in this protocol. The following distresses are collected for each pavement type.

Asphalt Concrete (AC) Pavements

1. Alligator (fatigue) cracking
2. Bleeding
3. Block cracking
4. Bumps and sags
5. Corrugation
6. Depression
7. Edge cracking
8. Joint reflection cracking
9. Lane/Shoulder drop off
10. Longitudinal and transverse cracking
11. Patching and utility cut patching
12. Polished aggregate
13. Potholes
14. Railroad crossing
15. Rutting
16. Shoving
17. Slippage cracking
18. Swell
19. Raveling
20. Weathering

Portland Cement Concrete (Jointed)

1. Blowup/Buckling
2. Corner breaks
3. Divided slab
4. Durability ("D") cracking
5. Faulting
6. Joint seal damage
7. Lane/shoulder drop off
8. Linear cracking
9. Patching (large) and utility cuts
10. Patching (small)
11. Polished aggregate
12. Popouts
13. Pumping
14. Punchout
15. Railroad crossing
16. Scaling, map cracking and crazing
17. Shrinkage cracks
18. Spalling (corner)
19. Spalling (joint)



Any exceptions to the above procedures will be discussed with the City before any inspections are performed. These are usually related to distresses or situations that are not covered in the manuals. Examples include slippage cracks, roller check marks or edge cracking on streets with no curbs and gutters. Others include the raveling of surface seals or surveying the open-graded AC mixes. Any modifications will be documented and submitted to the City for approval.

The distress or condition inspections are performed as semi-automated inspections, and the entire pavement is inspected. Field crews are typically composed of a two-person crew traveling in a van. Crew will collect and record visual distresses using equipment installed in the van.

The data will be summarized into sample units and entered into the StreetSaver® database. The size of the sample unit will be 2,500± 1,000 square feet as per ASTM D6433-11 protocols. In addition, the sample units will match the existing management sections set up in the StreetSaver® database.

Before the actual inspection work begins the NCE team will perform two Field QC Steps. These are outlined as follows:

Step 1: Calibration

The first steps in this process is having NCE's Project Manager, Marker Geospatial's field manager and a field technician meet in the field and drive a few roads and review some of the variety of pavement conditions that exist in the City. This is a valuable exercise to calibrate and synchronize the team's view of the various distresses and ensure a consistent product.

Step 2: Quality Control

The QC team conducted an independent review of the pavement condition data collected on the City's pavement networks. Since semi-automated distress data collection is different from StreetSaver's walking protocols, this is required to ensure that the pavement data collected is consistent with those protocols.

Up to 24 pavement sites were selected for quality control purposes. They included a range of:

- Pavement Types (AC or PCC)
- Functional Classifications
- Pavement condition or age



An independent NCE technician will be selecting the 24 sites in the City and performing a detailed walking inspection. The semi-automated team will then perform a blind test on these sites (they will not know the location of these sites) and the results compared.

Acceptability Criteria

The types and severities of the distresses must be the same and quantities within $\pm 10\%$ of each other. If corrections are required on more than 10% of the calibration sites, then additional sites will be selected and compared. This will continue until more than 95% of the calibration sites meet the acceptability criteria.

2.2. Accuracy Required for Data Collection

The accuracy required for data collection has two components, both of which are further described in the following paragraphs.

- Re-inspections
- PCI comparisons with past inspections

2.2.1 Re-Inspection "Check"

At least 5% of all inspections are randomly re-inspected by other team members. A different inspector will review these sites and determine the revised pavement distress measurements. If the initial inspection is determined to be inaccurate, the original inspector is given refresher training before being allowed to continue with any further inspections. Should the data be inaccurate for a certain day, all the data for that day will be re-inspected following refresher training to ensure accuracy.

Acceptability Criteria

At the time of re-inspection, the actual distresses will be re-inspected and verified, and any corrections made, if necessary. Distress types and severities must be the same and re-measured quantities within $\pm 10\%$ of the original measured quantity.

If corrections are required on more than 10% of the re-inspected sample units, then an additional 5% will be re-inspected. This will continue until all more than 95% of the re-inspected sections meet the acceptability criteria.



2.2.2 PCI Comparison with Past Inspections

As another level of quality control, the new PCIs are compared with the previous PCIs. If they differ by more than ± 10 PCI points, these sections are automatically flagged for further investigation.

If PCI Increases 10 Points

The section is investigated to see if a maintenance and rehabilitation event has occurred since the last inspection, but which has not been recorded. This can only be resolved with feedback from the City. Typically, it may include activities such as:

- Crack sealing activities - changes medium or high severity cracking to low severity
- Patching activities - alligator cracking that has been removed and patched, so that the resultant PCI is increased.
- Surface seals
- Overlay

Therefore, an up-to-date maintenance and rehabilitation history file in the StreetSaver® database is desirable, both for historical accuracy as well as to provide additional quality control.

If PCI Decreases 10 Points

The section is checked to see if the average deterioration rate (usually 3 to 4 points per year) is exceeded. If the drop in PCI is within the range of what is acceptable, no further action is required. If the drop is more than the acceptable range, a re-inspection will be performed. The default performance curves in the pavement management software form the basis for what is acceptable.

2.3. Inspectors' Qualifications and Experience

All NCE's inspectors are required to attend formal training on condition distress inspections. For example, any of NCE's inspectors working on the LTPP project are required to attend a week-long training workshop every year to maintain their certifications. The Regional Transportation Commission (RTC) of Washoe County requires inspectors to be calibrated prior to performing any work using the ASTM D6433 protocols (also known as the pavement management inspections).



For pavement management (or ASTM D6433) inspections, NCE's technicians undergo the OCTA technician certification exercise held in December 2019 and the internal training during January 2020.

Similarly, in agencies that use the StreetSaver® system, NCE's inspectors attend the distress training conducted by the Metropolitan Transportation Commission (MTC). After the formal training, they work with an experienced inspector before they are allowed to work on their own. Within the first month of working on their own, up to 20% of their work is checked weekly. Any necessary corrections are made immediately.

Finally, NCE conducts a one-day training and calibration workshop for all NCE staff involved with data collection. This is conducted once a year. The 2020 workshop was in January.

Inspector Name	Date of ASTM D-6433 Training	Training Conducted by:
Franc Escobedo	January 6, 2020	Lisa K. Senn
Joseph De Leon	January 6, 2020	Lisa K. Senn
Katrina Cai	January 6, 2020	Lisa K. Senn

Resumes of technicians utilized on this project are included in Appendix C1.



3. Safety Procedures

NCE administers a health and safety program in compliance with the Nevada Occupational Safety and Health Act (Section 618.383) and Cal OSHA Title VIII, Section 3203. The program is documented in NCE's *Workplace Safety Program Manual*.

Generally, the safety procedures include:

- Inspectors to wear a Class 2 safety vest at all times;
- Flashing beacon on all vehicles utilized for inspections; and
- Stopped vehicles to be parked at locations away from moving traffic (e.g. nearby parking, shoulders etc.).
- For higher volume streets, inspectors will use the sidewalk and or medians, and move in the face of traffic when conducting survey. This will furnish them with more time and provides them with better chances in escaping a dangerous situation involving incoming vehicles.

On streets where there is a high volume of traffic or high speeds, additional measures may be necessary, such as:

- Inspections to occur during off-peak periods or on weekends;
- Additional inspector to watch out for traffic; and
- Traffic flaggers in extreme cases.

All NCE inspectors are required to annually update their online safety programs as administered by "Click Safety". Class Taken are:

- C2 Cal Personal Protective Equipment R2
- C2 Workzone Traffic Safety Tips
- G2 Cal/OSHA Heat Illness

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EXHIBIT "B"
SCHEDULE OF SERVICES

(SEE PAGE 27 OF EXHIBIT "A")

EXHIBIT "C"
INSURANCE REQUIREMENTS

3.2.12 Insurance.

3.2.12.1 Time for Compliance. Consultant shall not commence work under this Agreement until it has provided evidence satisfactory to the City that it has secured all insurance required under this section. In addition, Consultant shall not allow any subconsultant to commence work on any subcontract until it has provided evidence satisfactory to the City that the subconsultant has secured all insurance required under this section.

3.2.12.2 Types of Insurance Required. As a condition precedent to the effectiveness of this Agreement for work to be performed hereunder, and without limiting the indemnity provisions of the Agreement, the Consultant, in partial performance of its obligations under such Agreement, shall procure and maintain in full force and effect during the term of the Agreement the following policies of insurance. If the existing policies do not meet the insurance requirements set forth herein, Consultant agrees to amend, supplement or endorse the policies to do so.

(A) Commercial General Liability: Commercial General Liability Insurance which affords coverage at least as broad as Insurance Services Office "occurrence" form CG 0001, or the exact equivalent, with limits of not less than \$1,000,000 per occurrence and no less than \$2,000,000 in the general aggregate. Defense costs shall be paid in addition to the limits. The policy shall contain no endorsements or provisions (1) limiting coverage for contractual liability; (2) excluding coverage for claims or suits by one insured against another (cross-liability); or (3) containing any other exclusion(s) contrary to the terms or purposes of this Agreement.

(B) Automobile Liability Insurance: Automobile Liability Insurance with coverage at least as broad as Insurance Services Office Form CA 0001 covering "Any Auto" (Symbol 1), or the exact equivalent, covering bodily injury and property damage for all activities with limits of not less than \$1,000,000 combined limit for each occurrence.

(C) Workers' Compensation: Workers' Compensation Insurance, as required by the State of California and Employer's Liability Insurance with a limit of not less than \$1,000,000 per accident for bodily injury and disease.

(D) Professional Liability (Errors & Omissions): Professional Liability insurance or Errors & Omissions insurance appropriate to Consultant's profession with limits of not less than \$1,000,000 per claim. Covered professional services shall specifically include all work to be performed under the Agreement and delete any exclusions that may potentially affect the work to be performed (for example, any exclusions relating to lead, asbestos, pollution, testing, underground storage tanks, laboratory analysis, soil work, etc.). If coverage is written on a claims-made basis, the retroactive date shall precede the effective date of the initial Agreement and continuous coverage will be maintained or an extended reporting period will be exercised for a period of at least three (3) years from termination or expiration of this Agreement.

3.2.12.3 Insurance Endorsements. Required insurance policies shall contain the following provisions, or Consultant shall provide endorsements on forms approved by the City to add the following provisions to the insurance policies:

(A) Commercial General Liability:

(1) Additional Insured: The City, its officials, officers, employees, agents, and volunteers shall be additional insureds with regard to liability and defense of suits or claims arising out of the performance of the Agreement.

Additional Insured Endorsements shall not (1) be restricted to "ongoing operations"; (2) exclude "contractual liability"; (3) restrict coverage to "sole" liability of Consultant; or (4) contain any other exclusions contrary to the terms or purposes of this Agreement. For all policies of Commercial General Liability insurance, Consultant shall provide endorsements in the form of ISO CG 20 10 10 01 (or endorsements providing the exact same coverage) to effectuate this requirement.

(2) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

(B) Automobile Liability:

(1) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

3.2.12.4 Professional Liability (Errors & Omissions):

(A) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

(B) Contractual Liability Exclusion Deleted: This insurance shall include contractual liability applicable to this Agreement. The policy must "pay on behalf of" the insured and include a provision establishing the insurer's duty to defend.

3.2.12.5 Workers' Compensation:

(A) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

3.2.12.6 Primary and Non-Contributing Insurance. All policies of Commercial General Liability and Automobile Liability insurance shall be primary and any other insurance, deductible, or self-insurance maintained by the City, its officials, officers, employees, agents, or volunteers shall not contribute with this primary insurance. Policies shall contain or be endorsed to contain such provisions.

3.2.12.7 Waiver of Subrogation. All policies of Commercial General Liability and Automobile Liability insurance shall specifically allow Consultant or others providing insurance evidence in compliance with these specifications to waive their right of recovery prior to a loss. Consultant hereby waives its own right of recovery against the City, its officials, officers, employees, agents, and volunteers, and shall require similar written express waivers and insurance clauses from each of its subconsultants.

3.2.12.8 Deductibles and Self-Insured Retentions. Any deductible or self-insured retention greater than \$5,000 must be approved in writing by the City and shall protect the City, its officials, officers, employees, agents, and volunteers in the same manner and to the same extent as they would have been protected had the policy or policies not contained a deductible or self-insured retention.

3.2.12.9 Evidence of Insurance. The Consultant, concurrently with the execution of the Agreement, and as a condition precedent to the effectiveness thereof, shall deliver either certified copies of the required policies, or original certificates on forms approved by the City, together with all endorsements affecting each policy. Required insurance policies shall not be in compliance if they include any limiting provision or endorsement that has not been submitted to the City for approval. The certificates and endorsements for each insurance policy shall be signed by a person authorized by that insurer to bind coverage on its behalf. At least fifteen (15 days) prior to the expiration of any such policy, evidence of insurance showing that such insurance coverage has been renewed or extended shall be filed with the City. If such coverage is cancelled or reduced and not replaced immediately so as to avoid a lapse in the required coverage, Consultant shall, within ten (10) days after receipt of written notice of such cancellation or reduction of coverage, file with the City evidence of insurance showing that the required insurance has been reinstated or has been provided through another insurance company or companies.

3.2.12.10 Failure to Maintain Coverage. In the event any policy of insurance required under this Agreement does not comply with these specifications or is canceled and not replaced immediately so as to avoid a lapse in the required coverage, City has the right but not the duty to obtain the insurance it deems necessary and any premium paid by City will be promptly reimbursed by Consultant or City will withhold amounts sufficient to pay premium from Consultant payments. In the alternative, City may cancel this Agreement effective upon notice.

3.2.12.11 Acceptability of Insurers. Each such policy shall be from a company or companies with a current A.M. Best's rating of no less than A- VII and authorized to transact business of insurance in the State of California, or otherwise allowed to place insurance through surplus line brokers under applicable provisions of the California Insurance Code or any federal law.

3.2.12.12 Enforcement of Agreement Provisions (non estoppel). Consultant acknowledges and agrees that actual or alleged failure on the part of the City to inform Consultant of non-compliance with any requirement imposes no additional obligation on the City nor does it waive any rights hereunder.

3.2.12.13 Requirements Not Limiting. Requirement of specific coverage or minimum limits contained in this Appendix are not intended as a limitation on coverage, limits, or other requirement, or a waiver of any coverage normally provided by any insurance.

3.2.12.14 Insurance for Subconsultants. Consultant shall include all subconsultants engaged in any work for Consultant relating to this Agreement as additional insureds under the Consultant's policies, or the Consultant shall be responsible for causing subconsultants to purchase the appropriate insurance in compliance with the terms of these Insurance Requirements, including adding the City, its officials, officers, employees, agents, and volunteers as additional insureds to the subconsultant's policies. All policies of Commercial General Liability insurance provided by Consultant's subconsultants performing work relating to this Agreement shall be endorsed to name the City, its officials, officers, employees, agents and

volunteers as additional insureds using endorsement form ISO CG 20 38 04 13 or an endorsement providing equivalent coverage. Consultant shall not allow any subconsultant to commence work on any subcontract relating to this Agreement until it has received satisfactory evidence of subconsultant's compliance with all insurance requirements under this Agreement, to the extent applicable. The Consultant shall provide satisfactory evidence of compliance with this section upon request of the City.

EXHIBIT "D"
COMPENSATION

(SEE PAGE 29 OF EXHIBIT "A")

WORKER'S COMPENSATION INSURANCE CERTIFICATION

WORKERS' COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:

(ONE OF THE BOXES BELOW MUST BE CHECKED)

I have and will maintain a certificate of consent from the California Labor Commission to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work to be performed under this contract.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work to be performed under this contract. My workers' compensation insurance carrier and policy number are:

Carrier _____

Policy Number _____

I certify that, in the performance of the work under this Agreement, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and I hereby agree to indemnify, defend, and hold harmless the City of San Clemente and all of its officials, employees, and agents from and against any and all claims, liabilities, and losses relating to personal injury or death, economic losses, and property damage arising out of my failure to provide such worker's compensation insurance. I further agree that, if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

Dated: _____, 20__

Consultant

By: _____

Title

Address
