



City of San Bernardino

PROPOSAL FOR RFP F-24-03

Pavement Management Program and Asset Inventory

March 6, 2024



Submitted By:

Fountain Valley Office

17050 Bushard Street, Suite 200

Fountain Valley, CA 92708

Phone: 714.848.8897

1. Executive Summary

March 5, 2024

Mr. Ramon "Eddie" Mendez

Principal Engineer

City of San Bernardino

Public Works Department

290 North D Street

San Bernardino, California 92401

RE: Request for Proposals for RFP F-24-03 Pavement Management Program and Asset Inventory

Dear Mr. Mendez and Members of the Selection Committee:

Pavement networks are often the most valuable asset that an agency owns. This asset is not only expensive to replace but is an essential component to the traveling public's safety. Agencies are looking for more cost-effective ways to perform engineering, maintenance, management, and rehabilitation of roadways more than ever before to stretch funding allocations. An essential tool to assist in cost-effective roadway maintenance planning is a current pavement management program (PMP) and current accurate pavement condition data.

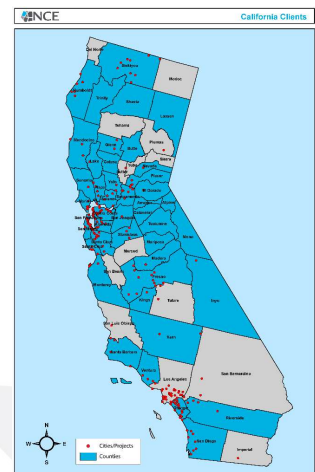
The Road Maintenance and Rehabilitation Act (RMRA) provides approximately \$11.9 million for FY2023/24 for the City of San Bernardino (City). In addition, the Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA) will provide more than \$40 billion in funds for infrastructure and transportation systems for California agencies. However, additional funding comes with new requirements; an updated PMP is an essential tool to support agencies in not just reporting to the California Transportation Commission (CTC), but also future efforts to pursue additional funding or grant applications.

Summary of Key Proposal Elements

As part of this project, NCE will partner with the City to develop PMP database, recommend rehabilitation strategies to improve pavement conditions, develop a seven-year rehabilitation program, provide on-site StreetSaver® training and technical support, and assist with presentations to appropriate City staff and elected officials. In addition to the PMP, NCE will also provide asset data collection services. i.e., road right-of-way (ROW) assets such as sidewalks, traffic signs, curb ramps, pavement traffic markings and striping, and curb markings.

NCE is a nationally recognized pavement and asset management firm with broad capabilities and expertise in the areas of asset and pavement management systems as well as civil and pavement design, and training. The NCE team has more than 100 person years of combined experience with PMPs and asset collections. Our highly trained technical staff are experienced in data collection and have worked together on numerous asset and pavement management projects in California as shown on the map to the right. They have developed an excellent reputation for dedication, integrity, productivity, quality of work, and service to our clients. Additionally, NCE is a Metropolitan Transportation Commission (MTC) certified consultant, and our team has widespread experience providing distress inspections and updating the StreetSaver®, PMP database(s). The NCE team can provide the following benefits and distinguishing features to the City:

- Extensive local PMP experience (90 cities/counties in Southern California).
- StreetSaver® experience and proficiency.
- Expertise in pavement engineering.
- OCTA and MTC-certified inspectors and data Collection vehicle
- Innovative pavement strategies with sustainable options
- Experienced with developing work plan(s) based on PCI only.
- Highly skilled in data collection of non-pavement assets.
- Rigorous quality control practices.



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

NCE as a Company

NCE 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. In that time frame, we have stayed at the forefront of pavement and material technology and gained the trust of local agencies and State DOTs to the U.S. Department of Transportation and the National Academies, to deliver realistic and economical pavement solutions while creating safe, durable, and sustainable designs.

We have also performed pavement condition surveys ranging from state highways in 12 states to local street networks in over 220 cities and counties in California. We have surveyed over 120,000 miles of pavements, including alleys, trails, and parking lots. Our field data collection ranges from walking surveys as per the American Society for Testing and Material (ASTM) or StreetSaver® 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.). The automated approach not only saves time and money but is also safe. In addition, it allows the majority (~100%) of the network to be surveyed as compared to the walking survey where only a sample of the network is surveyed. In addition, roadside assets such as traffic signs, curb ramps, pavement stripping, and sidewalks can also be collected and inventoried in the same mobilization as the semi-automated/automated survey. Our services include PMP, asset management, 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 125 employees strategically working across seven offices throughout California, Nevada, and Arizona. This contract will be managed from our local Fountain Valley office.

For this contract, NCE has teamed with märker geospatial, LLC (märker) to conduct automated surveys (6D LiDAR). märker's testing vehicle and staff are also MTC and OCTA certified, further ensuring that we meet the accuracy requirements specified by MTC and OCTA. NCE has worked with märker staff for over a decade on many successful PMPs for cities and counties where the technology is appropriate, including the Cities of Anaheim, Baldwin Park, Burbank, Corona, Diamond Bar, Hermosa Beach, Highland, Manhattan Beach, Mission Viejo, Newport Beach, Orange, Redondo Beach, San Clemente, and Thousand Oaks, and the Counties of Orange, San Diego, and Santa Barbara. We have also included Transconomy LLC (Transconomy) for automated asset inventory. Transconomy provides cutting-edge tools for collecting roadway images and automatically extracting assets to create GIS-based inventories of transportation infrastructure using AI and Machine Learning. NCE has recently teamed with Transconomy staff on local transportation asset management projects for the Cities of Thousand Oaks and Santa Maria.

NCE has the capability to deliver responsive, cost-effective, and high-quality pavement management and pavement engineering services. 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 City's contact person during the RFP review process. As CEO/President of NCE, Margot Yapp, PE, is authorized to sign contracts on behalf of the firm. Their contact information follows.

Authorized to Bind Company

Ms. Margot Yapp, PE
Principal-in-Charge
Phone: (510) 215-3620
Email: MYapp@ncenet.com

NCE Proposal Contact

Mr. Vivek Jha, MS, PE
Project Manager
Phone: (909) 362-7936
Email: VJha@ncenet.com

NCE Project Office

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

Closing

NCE acknowledges Addenda issued on the City's website. Questions and answers were released, and we have reviewed them. NCE accepts the City's professional services agreement, can meet the insurance coverage requirements, and accepts the terms and conditions of the RFP. NCE does not have any actual, apparent, or potential conflicts of interest with regards to- and any other work performed by NCE for the City. This proposal and cost proposal are valid for 120 calendar days from the date of its submittal. We look forward to your favorable review of our proposal and the opportunity to work the City of San Bernardino.

Sincerely,

NCE



Margot Yapp, PE
President/Chief Executive Officer



Vivek Jha, MS, PE
Associate/Southern California Operations Manager



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3. Identification of Proposer

a. Legal name and address of the company.	Nichols Consulting Engineers, CHTD. (dba NCE) 17050 Bushard Street, Suite 200 Fountain Valley, CA 92708
b. Legal form of company (partnership, corporation).	NCE was incorporated in the State of Nevada in 1990 as a C Corporation.
c. If company is a wholly owned subsidiary of a "parent company," identify the "parent company."	N/A
d. Name, title, address, email address, and telephone number of the proposal contact person.	Vivek Jha, Associate/Southern California Operations Manager 17050 Bushard Street, Suite #200, Fountain Valley, CA 92708 Phone: (714) 848-8897 ext. 102; Mobile: (909) 362-7936 Email: VJha@ncenet.com
e. California Business License Number.	California Foreign Corporation: 1916885 <i>NCE is registered with the California Secretary of State to conduct business within the State of California. A copy of our certificate is shown below.</i> California DIR: 1000017867

STATE OF CALIFORNIA
Office of the Secretary of State
STATEMENT OF INFORMATION
CORPORATION
California Secretary of State
1500 11th Street
Sacramento, California 95814
(916) 653-3515

For Office Use Only
-FILED-
File No.: BA20231676093
Date Filed: 11/1/2023

Entity Details
Corporation Name: NICHOLS CONSULTING ENGINEERS, CHTD.
Entity No.: 1916885
Formed In: NEVADA

Street Address of Principal Office of Corporation
Principal Address: 1003 W CUTTING BOULEVARD
SUITE 110
PT RICHMOND, CA 94804

Mailing Address of Corporation
Mailing Address: 300 E 2ND ST
SUITE 1210
RENO, NV 89501

Attention
Street Address of California Office of Corporation
Street Address of California Office: 1003 W CUTTING BOULEVARD
SUITE 110
PT RICHMOND, CA 94804

Officers

Officer Name	Officer Address	Position(s)
<input checked="" type="checkbox"/> MARGOT T YAPP	1003 W CUTTING BOULEVARD SUITE 110 PT RICHMOND, CA 94804	Chief Executive Officer
GREGORY FASIANO	8796 FOLSOM BLVD STE 250 SACRAMENTO, CA 95825	Secretary
<input checked="" type="checkbox"/> DARREN LEITZKE	300 E 2ND ST SUITE 1210 RENO, NV 89501	Chief Financial Officer

Additional Officers

Officer Name	Officer Address	Position	Stated Position
<input checked="" type="checkbox"/> KEVIN SENN	300 E 2ND ST SUITE 1210 RENO, NV 89501	Treasurer	

Agent for Service of Process
Agent Name: MARGOT T YAPP
Agent Address: 1003 W CUTTING BOULEVARD
SUITE 110
PT RICHMOND, CA 94804

Type of Business
Type of Business: CIVIL AND ENVIRONMENTAL ENGINEERING

Email Notifications
Opt-in Email Notifications: Yes, I opt-in to receive entity notifications via email.

Labor Judgment

Page 1 of 2

No Officer or Director of this Corporation has an outstanding final judgment issued by the Division of Labor Standards Enforcement or a court of law, for which no appeal therefrom is pending, for the violation of any wage order or provision of the Labor Code.

Electronic Signature
☒ By signing, I affirm that the information herein is true and correct and that I am authorized by California law to sign.

Darren J Leitzke
Signature: _____ Date: 11/01/2023

B2225-0858 11/01/2023 10:34 AM Received by California Secretary of State

Page 2 of 2



4. Staffing Resources

Firm Staffing and Key Personnel

Staff Assigned to Perform Requested Services

NCE's proposed key personnel such as Principal-in-Charge, Project Manager, and QA/QC Manager, as well as other project staff assigned to perform services for the City's project are listed in the matrix below. Additionally, the NCE team proposed to do the work is comprised of licensed engineers and MTC certified inspectors who have fulfilled the following roles for many other asset and pavement management projects similar to this one. Their qualifications are highlighted below in this section.

Staff Name	Project Role	Job Title
Margot Yapp, PE	Principal-in-Charge	CEO/President/Principal
Vivek Jha, MS, PE	Project Manager	Associate/Southern California Operations Manager
Shahram Misaghi, MS, PE	QA/QC Manager	Associate Engineer
Timin Punnackal, PE	Project Engineer	Project Engineer
Debaroti Ghosh, PhD, EIT	Project Engineer	Project Engineer
Mahmoud Samara, MS, EIT	Staff Engineer	Staff Engineer
Shaun Russo	Staff Engineer/ PMP Analyst	PMP Analyst
Franc Escobedo	Senior Field Technician	Senior Field Technician
Joesph DeLeon	Senior Field Technician	Senior Field Technician
Jonathan Moore	Field Technician	Field Technician
Ken Huisman/ märker	Field Supervisor/ Automated Surveys	Vice President/COO
Ammar Waqar/ Transconomy	Task Manager/ Data Processing	Technology Task Manager

Total number of proposed staff assigned to perform services for the City's project: NCE Staff: 10; and Subconsultant Staff: 2.

Capacity and Available Resources

NCE provides and commits qualified personnel from start to finish for our projects, and we will certainly do so for the City's project. Based on our existing workload and projections, the NCE team is capable of seamlessly integrating the City of San Bernardino's project into our company future work plans. NCE's proposed Project Manager, Vivek Jha, MS, PE, has the demonstrated ability to manage multiple complex assignments and he is supported by a highly qualified group of personnel who have performed data collection for assets as well as pavement-related engineering work such as pavement condition surveys and other pavement management services for several projects simultaneously. The project personnel identified in this document will be available to the extent required for the duration of this contract and are ready to begin work with the City. This team has a local presence that can provide additional resources and expertise to ensure your expectations for quality, budget and schedule are achieved.

NCE Personnel Responsible for Working with the City

NCE's proposed personnel that are designated to work directly with City staff are identified below. These individuals are committed to attending the interview and in-person presentation, if NCE is chosen as a finalist.

Vivek Jha, MS, PE, will serve as NCE's Project Manager for the project. Vivek will be responsible for day-to-day project management and will be the City's single point of contact. He will work directly with City staff and will be responsible for overall communications between NCE, the City, and subconsultant staff. Vivek 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.

Timin Punnackal, PE, will serve as NCE's Project Engineer for the project. Timin will assist the pavement and asset data collection and provide the analysis and interpretation of the data to update the City's 2024 PMP. Timin will also oversee the pavement data collection and assist in carrying out budget scenarios and developing the draft and final PMP Report.

Shaun Russo will serve as NCE's Staff Engineer/ PMP Analyst for the project. Shaun will provide support to key engineering staff. He will be involved with all aspects of the PMP update and will assist with the asset data collection process.

Project Team Organization

NCE has assembled a project team of highly qualified individuals who have the knowledge and experience implementing similar or identical PMP updates with expertise in **StreetSaver® as well as project final deliverables, including LA Metro and OCTA submittal requirements**. We are committed to providing our clients with continuity in staff and quality of service. Our technical staff benefit from active pavement research and implementation that NCE is completing with both Caltrans and Federal Highway Administration (FHWA), in addition to an investment in continuous training in emerging design and construction techniques that we routinely share with hundreds of others in the engineering community through teaching seminars, field distress and software workshops, and publication of articles in professional journals.

The City can count on our team to provide superior, responsive service on this project. **Figure 1** (organization chart) shows the structure and team we propose for this project, and the lines of communication and reporting inter-relationships among key, support, and subconsultant staff. All proposed project team members, including subconsultants will be managed as an extension of NCE.

NCE Team Members

NCE brings a collaborative and innovative problem-solving mentality to address all aspects of the City's pavement management program. NCE's proposed project personnel have the relevant experience and in-depth understanding of the City's objectives required to successfully provide the pavement and asset management services described in *Exhibit A – Proposed Scope of Services* contained in the RFP. The NCE team will be led by our **Project Manager, Vivek Jha, MS, PE**. Vivek has extensive experience in PMP and asset management, especially in delivering PMP reports as per OCTA and LA Metro requirements. Vivek is based in our Fountain Valley office. He is supported by an experienced and trusted team of professionals that have successfully worked together on multiple projects, including our **Principal-in-Charge, Margot Yapp, PE**, and our **QA/QC Manager, Shahram Misaghi, MS, PE**. The NCE team also includes other key and support personnel who will be very instrumental in delivering the project to successful completion.

Roles and Responsibilities of Other Project Personnel

Margot Yapp, PE, will serve as NCE's Principal-in-Charge for the project. Margot will be responsible for ensuring Vivek and the NCE team has the resources necessary to successfully deliver all services and will oversee the project through the phases. She will also assist Vivek to establish budgets, schedules, and monitor the adherence of terms of contract expectations.

Shahram Misaghi, MS, PE, will serve as NCE's QA/QC Manager for the project. Shahram will be responsible for implementing NCE's quality assurance and quality control management (QA/QC) program for the City's PMP update. He will address QA/QC 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 City.

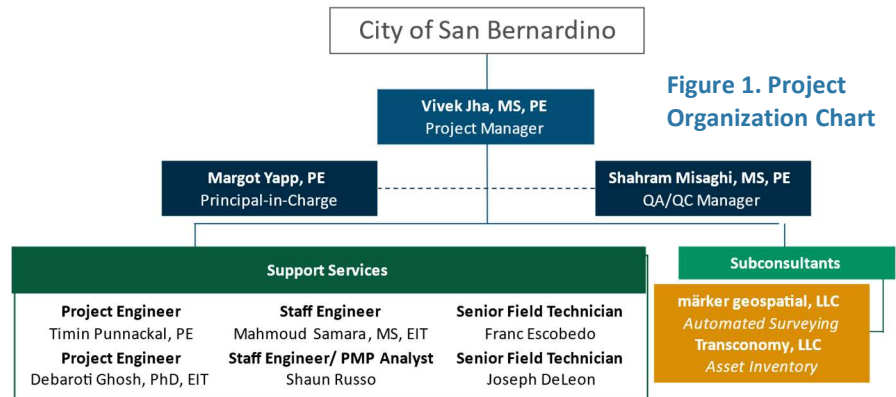
Debaroti Gosh, PhD, EIT, will serve as NCE's Project Engineer for the project. Debaroti will oversee the pavement data collection and assist in carrying out budget scenarios and developing the draft and final PMP Report.

Mahmoud Samara, MS, EIT, will serve as NCE's Staff Engineer for the project. He will provide support to key engineering staff.

Franc Escobedo and Joseph DeLeon will serve as NCE's Senior Field Technicians for the project. They will lead/perform the functions relating to data collection and field QA/QC.

Ken Huisman (märker geospatial) will as Field Supervisor/Data Collection Task Manager for the project. Ken will coordinate and manage all facets of the automated survey fieldwork, including crew coordination, survey scheduling, quality components, and timely completion of all fieldwork collection deliverables.

Ammar Waqar (Transconomy) will serve as Technology Lead/Data Processing Task Manager for the project. Ammar will be responsible for data processing for the project.



The NCE team led by our proposed Project Manager Vivek Jha has recently completed several similar asset/pavement management projects together in Southern California.

Brief Biographies

Brief biographies of NCE's proposed project personnel designated to work directly with City staff are provided below. One-page focused resumes of our project team are provided at the end of *Section 4. Staffing Resources*, of this document.



Vivek Jha, MS, PE, Project Manager. Vivek is an experienced Project Manager and serves as an Associate/Southern California Operations Manager at NCE. He brings over 14 years of extensive experience in the pavement and asset management field with expertise in pavement design and evaluation, rehabilitation and maintenance, and pavement and asset management. He is also adept at managing the entire project life cycle including developing and maintaining the project schedule, controlling project cost, tracking, and documenting variance, developing technical reports, QA/QC of other reports and data, in addition to leading stakeholder meetings. He is also well-experienced with AASHTO 1993, CalTrans Pavement Design, Pavement ME/MEPDG, PCI, Coring, DCP, GPR, FWD, and PMP software such as StreetSaver® and PAVER™. Since joining NCE in 2022, Vivek has overseen, managed, and/or worked on a variety of complex asset and pavement management related projects for local public agencies throughout Southern California, including the Cities of Aliso Viejo, Anaheim, Baldwin Park, Burbank, Carson, Cathedral City, Corona, Diamond Bar, Hermosa Beach, Highland, Lemon Grove, Mission Viejo, Orange, Redondo Beach, Santa Barbara, Santa Maria, Thousand Oaks, and Yorba Linda, and the County of Orange, San Diego, and Santa Barbara.



Timin Punnackal, PE, Project Engineer. Timin is a Professional Civil Engineer with over 12 years of experience in various transportation projects. He is experienced in acquiring and assimilating a variety of asset data for subsequent analysis and reporting and has expertise with ArcGIS network analysis and Google API tools to perform geocoding and routing for location data. Timin is proficient in using analysis and PMP software, such as StreetSaver®. His recent PMP Southern California clients include the Cities of Aliso Viejo, Anaheim, Baldwin Park, Cathedral City, Corona, Diamond Bar, Glendale, Mission Viejo, Orange, Redondo Beach, San Marino, Santa Maria, Thousand Oaks, and Yorba Linda, and the Counties of Orange and San Diego.



Shaun Russo, Staff Engineer/ PMP Analyst. Shaun recently joined NCE in 2023 as a pavement management program analyst. He brings over five years of experience leading various Public Works projects throughout Southern California. He has completed projects for over 60 local agencies including pavement management programs, sidewalk management programs, right-of-way asset inventories, and GIS technical support. He has worked on all aspects of pavement and sidewalk management programs. His recent PMP clients include the Cities of Buena Park, Cypress, Fountain Valley, Fullerton, Huntington Beach, Irvine, Laguna Hills, Newport Beach, Orange, Santa Ana, Seal Beach, Stanton, Tustin, and Yorba Linda, and the County of Orange.

Subconsultants

märker geospatial, LLC (märker)



NCE has included **märker geospatial, LLC (märker) on our team to assist in providing automated/semi-automated pavement data collection services.** märker has provided hundreds of successful pavement and asset management projects specifically for municipal governments for over 30 years. The märker team has implemented numerous industry-leading technologies in order to successfully collect, process, and deliver accurate, up-to-date pavement conditions, along with other various public works roadway and roadside infrastructure assets for a multitude of government agencies across the country. **märker owns and operates a fleet of right-of-way data collection equipped vehicles which are certified by OCTA and MTC through the Vendor Certification Program (VCP).** Together with NCE, our team has successfully collected, processed, and delivered accurate up-to-date pavement conditions and roadway infrastructure assets for the Southern California Cities of Anaheim, Baldwin Park, Burbank, Corona, Diamond Bar, Hermosa Beach, Highland, Manhattan Beach, Mission Viejo, Newport Beach, Orange, Redondo Beach, Santa Barbara, Thousand Oaks, and Yorba Linda, and the Counties of Orange, San Diego, and Santa Barbara.

Transconomy, LLC (Transconomy)



NCE has included **Transconomy, LLC (Transconomy) on our team to provide right-of-way asset data processing including sign inventory.** The Transconomy team consists of technical staff with diverse backgrounds and expertise in asset management, Artificial Intelligence (AI), machine learning, data processing, and GIS. The firm was founded in spring 2022 as a spin-off of iENGINEERING Corporation. Transconomy provides cutting-edge tools for collecting roadway images and automatically extracting assets to create GIS-based inventories of transportation infrastructure using AI and Machine Learning. NCE has teamed with Transconomy staff on asset and pavement management projects for the Cities of Thousand Oaks and Santa Maria.

Margot Yapp, PE

Principal-in-Charge



Margot is a known leader and brings over 33 years of experience in transportation engineering, with respected expertise in pavement design, asset and pavement management, and research for roads, highways, and airfields. She has implemented many PMPs for cities, counties, and airports in California, Oregon, Nevada, Hawaii, and Texas. She serves as Principal-in-Charge, Project Manager, and/or QC Manager and has been involved in every aspect of PMP implementations, conversions, and updates. Margot's projects have included the use of various pavement management software packages, both public domain software including StreetSaver® and PAVER™, as well as Cartegraph. In addition to her extensive experience in pavement management and transportation engineering, Margot has taught workshops on pavement management systems for the National Highway Institute and the Federal Highway Administration.

Representative Projects

Infrastructure Management Implementation

City of Highland, CA

Project Manager. NCE implemented an infrastructure management system for the City's streets that contained about 150 centerline miles. The City's streets were surveyed, and a database was created to store the pavement inventory and pavement condition data. The City's sidewalks, curbs and gutters were inventoried and surveyed, and a work plan was prepared. Pavement M&R historical records for the past 14 years were entered into the database. The City's projected 20-year pavement budget was analyzed.

StreetSaver® Training and Technical Support and PTAP Rounds 1-24

Metropolitan Transportation Commission (MTC), CA

Project Manager. NCE has been involved in many projects related to the development, implementation, and training of the StreetSaver® program. NCE implemented the StreetSaver® PMP in over 150 agencies since 1994. Margot has managed various projects and has trained users of the StreetSaver® software including the development of the training materials, ensuring interaction in the training, as well as conducting the training.

Multiple Pavement Management System Implementations and Updates

Various Cities and Counties, CA

Principal and Project Manager. Margot has been responsible for PMP/PMS updates for many cities and counties inside and outside of California. She is responsible for the analysis and quality control of pavement distress data collection, updating maintenance and rehabilitation decision trees and the treatment unit costs, and the development of budget scenarios and summary reports. She has developed 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/PMS database. Some of her current/past Southern California clients include:

- Aliso Viejo
- Anaheim
- Buena Park
- Burbank
- Carson
- Corona
- Dana Point
- Diamond Bar
- Highland
- La Habra
- Lake Forest
- Lemon Grove
- Mission Viejo
- Newport Beach
- Orange City/County
- San Clemente
- San Diego County
- San Gabriel
- Santa Barbara City/County
- Santa Monica
- Seal Beach
- Thousand Oaks
- Torrance
- Ventura County
- West Covina
- MTC and OCTA

Education

MS, Civil Engineering, Oregon State University, Corvallis, 1987

BS, Civil Engineering, Oregon State University, Corvallis, 1985

BS, Forest Engineering, Oregon State University, Corvallis, 1985

Registration/Certifications

Professional Engineer – Civil, CA #45027

Affiliations

American Society of Civil Engineers

American Public Works Association

TRB Subcommittee A2B01 – Local Agency Pavement Management

Joined NCE

1994

Total Years of Experience

33 years

Vivek Jha, MS, PE

Project Manager



Vivek is an experienced Project Manager and serves as an Associate/Southern California Operations Manager at NCE. He brings over 14 years of expertise and extensive experience in delivering complex pavement projects involving 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 adept at managing the entire project lifecycle including developing and maintaining project schedule, controlling project budget, tracking and documenting variance, developing technical and business reports, and QA/QC of other reports and data. He is also extremely well-versed in various pavement management software such as StreetSaver® and PAVER™.

Representative Projects

Pavement Management Program Update

City of Highland, CA

Project Manager. NCE updated the City's PMP and submitted the final report in July 2023. As part of this project, NCE determined the existing condition of the entire street network and developed 4 budget scenarios. NCE also assisted in developing a multi-year plan that accounted for the City's pre-planned CIP projects. Vivek presented the findings of the PMP report to the City council.

Pavement Management Program Updates

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 M&R decision trees and unit costs, and the development of budget scenarios and reports including submitting the OCTA report for Measure M2 funding.

Pavement Management Program and Right-of-way Asset Inventory

City of Redondo Beach, CA

Project Manager. Vivek is currently assisting the City with carrying out an inventory of right-of-way assets such as traffic signs and curb ramps. NCE last assisted the City in 2017 in developing a right-of-way asset inventory for assets such as sign inventory, curb ramp, pavement and curb marking, cross gutter inventory, and manhole inventory. In addition, to the asset inventory update, NCE is also assisting the City to update its PMP and develop a multi-year focus plan for the City by carrying out pavement design and base repair marking. The City has approximately 159.43 centerline miles of streets.

Pavement Management and Road Surveying

County of San Diego, CA

Deputy Project Manager. 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. 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.

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

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

14 years

Shahram Misaghi, MS, PE

QA/QC Manager



Shahram is an experienced Project Manager and Senior Project Engineer at NCE with over 20 years of experience in pavement management, asset management, maintenance, rehabilitation, design, and planning projects. His experience includes pavement and asset data collection and analysis. Currently, he is leading/involved in multiple projects focused on pavement right-of-way asset inventory for agencies across California, and he has led over 70 PMP projects in the last 12 years. He is highly proficient in StreetSaver® and PAVER™ and is certified by MTC to perform condition surveys.

Representative Projects

Statewide Local Streets and Roads Needs Assessment

League of California Cities and County Engineers Association of California, California State Association of Counties, CA

Senior Engineer. NCE has prepared the biennial needs analysis for both pavement and non-pavement assets for 540 cities and counties since 2008. This includes the development of a website, online database and data collection, and funding analysis. The results are used to document the funding needs for the next 10 years and assisted in the passage of SB1. The results are communicated to a variety of audiences, including state legislators, elected city/county officials, Directors of PW, engineers, and planners.

StreetSaver® Training and Technical Support and PTAP Rounds 1-24

Metropolitan Transportation Commission (MTC), CA

Project Manager and Senior Engineer. NCE has been involved in many projects related to the development, implementation, and training of the StreetSaver® program. NCE implemented the StreetSaver® PMS in over 150 agencies since 1994. Shahram has trained users of the StreetSaver® software including the development of the training materials, ensuring interaction in the training, as well as conducting the training.

Multiple Pavement Management System Implementations and Updates

Various Cities and Counties, CA

Project Manager and Senior Engineer. Shahram has been involved with updating PMS for over 70 cities and counties in California. He is 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. He has developed the most 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 PMS database. He has also been responsible for QC review of client deliverables including final reports and agency submittals. Some of his current/past PMS clients in California include:

- Albany
- Alameda
- Anaheim
- Atherton
- Bakersfield
- Berkeley
- Buena Park
- Camarillo
- Carson
- Corona
- Dana Point
- Diamond Bar
- El Cerrito
- Fairfield
- Fullerton
- Highland
- Lake County
- Lake Forest
- Mission Viejo
- Monterey County
- Moreno Valley
- Oakland
- Orange County
- Pebble Beach
- Richmond
- Rocklin
- San Francisco
- Santa Maria
- Seal Beach
- South Gate
- Stanton
- Torrance
- MTC and OCTA



Education

MS, Civil Engineering,
University of Texas, El Paso,
2011

BS, Civil Engineering,
University of Science and
Technology, Tehran, 1999

Registration/Certifications

Professional Engineer – Civil,
CA #82874

MTC StreetSaver® Rater
Certification

Joined NCE

2011

Total Years of Experience

22 years



Timin Punnackal, MS, PE

Project Engineer



Timin is a Professional Civil Engineer with over 12 years of experience in various transportation projects. He currently serves as the Project Manager for the Long-Term Pavement Performance (LTPP) Material Reference Library for FHWA and oversees the facility operations including incoming and outgoing material shipments and requests. Outside of LTPP, Timin has demonstrated his skills in acquiring and assimilating pavement and non-pavement asset data on several projects. He has extensive experience acquiring and assimilating a variety of asset data for subsequent analysis and reporting and has expertise with ArcGIS network analysis and Google API tools to perform geocoding and routing for location data. He has developed macro-enabled documents and SQL queries and applications to assist in the analysis and management of data. He is proficient in using various analysis and PMP software such as StreetSaver®, AASHTOWare PavementME Design, ArcGis, Microsoft SQL Server, and R Studio.

Representative Projects

Pavement Management Program Update and Right-of-Way Asset Inventory

City of Redondo Beach, CA

Project Engineer. Timin is currently assisting the City with carrying out an inventory of right-of-way assets such as traffic signs and curb ramps. NCE last assisted the City in 2017 in developing a right-of-way asset inventory for assets such as sign inventory, curb ramp, pavement and curb marking, cross gutter inventory, and manhole inventory. In addition, to the asset inventory update, NCE is also assisting the City to update its PMP and develop a multi-year focus plan for the City by carrying out pavement design and base repair marking. The City has approximately 159.43 centerline miles of streets.

Pavement Management Program Update

City of Anaheim, CA

Project Engineer. The City has about 584 centerline miles and NCE has been assisting the City with updating the PMP since 2013 including transitioning from PAVER™ to StreetSaver®. Timin is currently working on the latest round of their PMP update using StreetSaver®. He is responsible for the data analysis and reporting including developing GIS shapefile to convey the City's long term street resurfacing plan to internal and external stakeholders.

Roadway Analysis and Distress Surveys for County Roads

County of Orange, CA

Project Engineer. NCE is providing pavement distress surveys in accordance with ASTM D6433-11 on roadways for the unincorporated portions of Orange County and the City of Dana Point for a five-year period beginning in FY 2020-2021 through FY 2024-2025. As part of the project, Timin assisted in analyzing the PMP data and developing a seven-work plan as per OCTA requirements for the 2023 submittal.

Pavement Management Program

City of Yorba Linda, CA

Project Engineer. Timin is currently working on the City's 2024 PMP update. As part of this project, Timin will analyze the impact of three funding scenarios on the City's average network PCI over the next seven years. Timin is also working on developing a City's specific 2-year focus work plan which will include streets that need to be resurfaced as part of the City's CIP program. He will also develop a PMP report and OCTA M2 deliverables as part of this project.



Education

MS, Civil Engineering,
University of Nevada, Reno,
2010

BS, Civil Engineering,
University of Nevada, Reno,
2008

Registration/Certifications

Professional Engineer – Civil,
NV #024624

Affiliations

Friend of TRB Committee
AKP10

Friend of TRB Committee
AKP40

Joined NCE

2009

Total Years of Experience

14 years

Debaroti Ghosh, PhD, EIT

Project Engineer



Debaroti has extensive experience serving as a Project Engineer for complex pavement management, maintenance, rehabilitation, design, and planning projects. She has expertise in asphalt material characterization, material rheology assessment, pavement management system, construction material lab testing, non-destructive and accelerated pavement testing. Her non-destructive pavement testing experience includes using ground penetrating radar (GPR), rolling density meter, and falling weight deflectometer. She is proficient in pavement design, soil-mechanics, pavement preservation, concrete pavement evaluation, earthquake engineering and pavement distress identifications. She also has experience in rigorous data analysis and structural analysis. Debaroti is certified by the MTC to perform pavement distress inspections.

Representative Projects

Impact of Waste Vehicles on City's Street Network

City of Lake Forest, CA

Project Engineer. NCE was recently selected to evaluate the impact of refuse collection trucks on the City's street network. The primary focus of this study is to quantify the impact of these refuse on the pavement life and determine the financial impact associated with reduction in pavement life. As part of this project, Debaroti is using the City's StreetSaver® database to carry out this analysis.

FY 2018 to FY 2024 Street Rehabilitation Program

City of San Marino, CA

Pavement Engineer. Since 2018, NCE has provided pavement evaluation and design services for various roadways. A pavement condition survey was conducted with distresses identified along with areas for potential base repairs. Coring, sampling, and laboratory testing were performed, and a pavement design and soil investigation memorandum were prepared. The memorandum included potential treatments with a focus on sustainable treatments and cost-saving measures including ARHM and CIR. The street rehabilitation programs included a cost-savings focused design to implement PS&E for the City's annual roadway maintenance and PMS implementation. NCE provided detailed field markings and inventory for localized base repairs and concrete curb and gutter repairs to provide improved bidding and construction cost outcomes. NCE was recently selected by the City to provide pavement evaluation and design services for FY 2022-23 and 2023-24.

Multiple Pavement Management System Implementations and Updates

Various Cities and Counties, CA

Project Engineer. Debaroti has been involved in developing and updating pavement management program plans for several cities and counties in California. She has been responsible for pavement distress data collection, analysis, and quality control; updating maintenance and rehabilitation decision trees with treatment unit costs; performing multiple-year budget scenario analyses; and preparing summary reports. Some of her current/past PMS California clients include:

- Buena Park
- Carmel
- Clearlake
- Contra Costa County
- Lake County
- Lakeport
- Marin County
- Martinez
- Mission Viejo
- Richmond
- San Deigo County
- San Francisco City/County
- Santa Cruz City/County
- Scotts Valley
- Shasta County
- Ventura County
- MTC and OCTA



Education

PhD, Civil Engineering,
University of Minnesota, Twin
Cities, 2018

MS, Civil Engineering,
University of Oklahoma, 2014

BS, Civil Engineering,
Bangladesh University of
Engineering & Technology,
2010

Registrations/Certifications

MTC StreetSaver® Rater
Certification

Engineer-in-Training #675746

Affiliations

American Society of Civil
Engineers

Women in Transportation
Engineering

Association of Asphalt
Pavement Technology

Joined NCE

2018

Total Years of Experience

5 years



Mahmoud Samara, MS, EIT

Staff Engineer



Mahmoud recently began his engineering career as a Staff Engineer at NCE and has been involved in pavement related projects that include pavement design and evaluation, rehabilitation and maintenance, and pavement and asset management. Prior to joining NCE, Mahmoud served as a graduate research assistant in Research and Education in Advanced Transportation Engineering Systems at Rowan University, New Jersey. Mahmoud has expertise in the areas of laboratory performance characterization of flexible pavements materials, pavement management system, life cycle cost analysis of pavement structures, non-destructive testing, FWD, and flexible pavement design.

Representative Projects

Pavement Management Program Update

City of Anaheim, CA

Staff Engineer. The City has about 584 centerline miles and NCE has been assisting the City with updating the PMP since 2013 including transitioning from PAVERTM to StreetSaver®. Timin is currently working on the latest round of their PMP update using StreetSaver®. He is responsible for the data analysis and reporting including developing GIS shapefile to convey the City's long term street resurfacing plan to internal and external stakeholders.

Roadway Analysis and Distress Surveys for County Roads

County of Orange, CA

Staff Engineer. NCE is providing pavement distress surveys in accordance with ASTM D6433-11 on roadways for the unincorporated portions of Orange County and the City of Dana Point for a five-year period beginning in FY 2020-2021 through FY 2024-2025. The County of Orange and the City of Dana Point maintain approximately 365.1 miles and 93.5 miles of roadways, respectively, which includes both the Master Plan of Arterial Highways and local public roads. Both the County and City perform biennial updates of its PMP to assist policy makers in making decisions for road maintenance as well as complying with the OCTA Measure M2 Program.

Pavement Management Program Update, Multi-year Focus Plan, Pavement Design, and Base Repair Markout

City of Redondo Beach, CA

Pavement Engineer. NCE is assisting the City with the updating their of the PMP which comprises of 160 centerline miles of pavement. Once the PMP update is completed, NCE will assist the City with developing a multi-year focus plan, field (coring) and laboratory testing, and eventually developing pavement treatment recommendation based on pavement design and site conditions. NCE will also markout base repairs every year prior to construction.

Pavement Management Program Update

City of Lemon Grove, CA

Pavement Engineer. NCE is providing an update to the City's PMP. The project consists of reviewing all public roadways within the City, evaluating and updating/upgrading the City's existing PMP software, and providing capital improvement program planning document for a five-year capital budget. The City's street network is approximately 70 centerline miles with 486 pavement segments. The City currently uses StreetSaver® for its PMP needs. The last PMP update performed by NCE in 2018 determined the City's average pavement condition index (PCI) was 60, which is considered "fair" condition.

Education

MS, Civil and Environmental Engineering, Rowan University, Glassboro, New Jersey, 2022

BS, Civil Engineering/Highway and Bridges Engineering, Al-Balqa Applied University, Salt, Jordan, 2017

Registrations/Certifications

Engineer-in-Training – CA
(pending)

Affiliations

Associate member with the American Society of Civil Engineers (ASCE)

Student Member in Academy of Pavement Science and Engineering (APSE)

Friend of TRB committee AKM20

Member in TRB Young Members Subcommittee

Joined NCE

2022

Total Years of Experience

2 years

Shaun Russo

Pavement Management Program (PMP) Analyst



Shaun recently joined NCE in 2023 as a pavement management program analyst. He brings over five years of experience leading various types of public works projects throughout Southern California. He has completed projects for over 60 local agencies including pavement management programs, sidewalk management programs, right-of-way asset inventories, and various types of GIS technical support. His clients include various municipal and local government agencies throughout San Diego, Orange, Los Angeles, Riverside, and San Bernardino Counties. He is experienced in pavement distress data collection according to the ASTM D6433 standards and has completed the Orange County Transportation Authority's (OCTA) PAVER™ 'Distress Identification' course for Asphalt Concrete and Portland Cement Pavements. His experience with Geographic Information Systems (GIS) has allowed him to perform advanced analysis of different types of data and has allowed him to ensure a high level of data accuracy across his projects. Shaun has worked on all aspects of pavement/sidewalk management programs from initial network creation to budgetary analysis and maintenance recommendations. He is proficient in using MicroPAVER™ and StreetSaver® and has built and maintained databases for several local agencies.

Representative Projects

Impact of Waste Vehicles on City's Street Network

City of Lake Forest, CA

PMP Analyst. NCE was recently selected to evaluate the impact of refuse collection trucks on the City's street network. The primary focus of this study is to quantify the impact of these refuse on the pavement life and determine the financial impact associated with reduction in pavement life.

10-Year Pavement Management Plan

Orange County Transportation Authority (OCTA), Orange, CA

Senior Technician and Data Analyst. The OCTA was looking for a 10-Year countywide pavement management plan to assess Orange County's countywide budgetary needs through 2032. Mr. Russo's role was to review the PMP databases and associated GIS files for all 35 agencies and report on the accuracy and integrity of the datasets. OCTA wanted to see if the Measure M funding requirements were being followed by each agency/consultant and to what extent. He was able to identify both strengths and weaknesses in the datasets and recommendations were made to OCTA on what should be expected from each agency and their consultants moving forward.

Multiple Pavement Management System Implementations and Updates

Various Cities and Counties, CA

Senior Technician and Analyst. Projects included various forms of surveys for pavement distress data collection, sidewalk distress data collection, and GIS field data collection.

- | | | |
|--------------------|--------------------|----------------|
| • Brea | • Laguna Beach | • Placentia |
| • Buena Park | • Laguna Hills | • San Clemente |
| • Commerce | • La Habra | • Santa Ana |
| • Costa Mesa | • La Habra Heights | • Seal Beach |
| • Cypress | • La Palma | • Stanton |
| • Fountain Valley | • Lakewood | • Tustin |
| • Fullerton | • Newport Beach | • Vista |
| • Huntington Beach | • Orange | • Yorba Linda |
| • Irvine | • Palmdale | • MTC and OCTA |



Registration/Certifications

OCTA Pavement Inspector
Prequalification

Affiliations

American Society of Civil
Engineers
American Public Works
Association

Joined NCE

2023

Total Years of Experience

5 years



Franc Escobedo

Senior Field Technician



Franc has decades of experience serving as a Pavement Management Technician. He has performed numerous pavement condition surveys for public agencies across California and has collected distress data for various Pavement Management Programs for StreetSaver®, PAVER™, Cartegraph, and Hansen systems. He has recently collected data for the local Cities of Aliso Viejo, Anaheim, Corona, Mission Viejo, Newport Beach, Orange, Redondo Beach, San Clemente, Santa Barbara, Santa Maria, and Thousand Oaks, as well as the Counties of Orange and Ventura. To date, Franc has performed condition inspections on over 6,000 centerline miles of roads and streets in California alone. Mr. Escobedo leads/performs all activities related to data collection and is an active participant in the QC process. He has completed the OCTA PAVER™ and MTC “Distress Identification” courses and now assists with the training of agency staff on both courses.

Representative Projects

Pavement Management and Road Surveying

County of Orange, CA

Senior Engineering Technician and Pavement Distress Surveyor. The project scope includes verifying the road inventory for a road network (674 centerline miles), surveying the roads using ASTM D6433-11 protocols, updating the maintenance history, developing maintenance strategies, performing multiple budget scenarios, linking to a GIS shapefile, developing a seven-year work plan, and preparing reports. 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. Assets collected included markings, signs, curb ramps, signals, and drainage features.

Pavement Management and Road Surveying

County of San Diego, CA

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

Pavement Management Inspections

Various Cities and Counties, CA

Senior Field Technician. Listed below is a collection of Southern California agencies that Franc has performed condition inspections. These projects have included various forms of inspections for pavement distress data collection, such as walking, windshield and/or semi-automated.

- | | | |
|----------------|----------------------|-----------------------|
| • Agoura Hills | • Encinitas | • San Gabriel |
| • Aliso Viejo | • Fullerton | • Santa Barbara City/ |
| • Anaheim | • Hermosa Beach | County |
| • Baldwin Park | • Highland | • Santa Maria |
| • Bell | • La Habra | • Santa Monica |
| • Buena Park | • Lake Forest | • Seal Beach |
| • Burbank | • Lemon Grove | • Stanton |
| • Camarillo | • Manhattan Beach | • Thousand Oaks |
| • Chula Vista | • Mission Viejo | • Torrance |
| • Corona | • Newport Beach | • Ventura County |
| • Dana Point | • Orange City/County | • West Covina |
| • Diamond Bar | • Poway | • Whittier |
| • Downey | • San Clemente | • Yorba Linda |
| • El Cajon | • San Diego County | • MTC and OCTA |



Education

Computer Operations
Program, Computer Learning
Center, Los Angeles, CA, 1983-
84

Network Engineering &
Administrative Program

Computer Learning Center,
Anaheim, CA, 1997

Certified Network
Administration

Computer Learning Center,
Anaheim, CA 1997

Registrations/Certifications

OCTA PAVER™ Certification

MTC StreetSaver® Rater
Certification Program

Joined NCE

2004

Total Years of Experience

22 years



Joseph DeLeon

Senior Field Technician



Joseph joined NCE in 2017 as a Pavement Management Technician and is very experienced in collecting distress data for pavement and asset management projects. He currently leads/performs all activities related to data collection and is an active participant in the QC process. Mr. DeLeon has recently collected distress data for the Cities of Aliso Viejo, Anaheim, Baldwin Park, Corona, Mission Viejo, Santa Maria, and Thousand Oaks, and the County of Orange. He has completed certification for the OCTA PAVER™ 'Distress Identification' course for Asphalt Concrete and Portland Cement Pavements. He is also certified by the MTC to perform pavement distress inspections; the certification testing involves passing a rigorous field test to test the inspector's knowledge of the distress procedures once a year. The Pavement Inspector Certification/Testing covers ASTM D6433 for PAVER™ and StreetSaver® modified ASTM D6433 distress types.

Representative Projects

Automated Survey, Control Sections, and Trench Cuts

City of Anaheim, CA

Senior Field Technician. Drove automated rig to conduct automated survey on residential roads and arterials in Anaheim, followed by inspection of control sections. Also conducted trench cut surveys for upcoming arterial maintenance.

Pavement Management Program and Right-of-way Asset Inventory

City of Redondo Beach, CA

Senior Field Technician. Joseph assisted in the data collection. NCE is currently assisting the City with carrying out an inventory of right-of-way assets such as traffic signs and curb ramps. NCE last assisted the City in 2017 in developing a right-of-way asset inventory for assets such as sign inventory, curb ramp, pavement and curb marking, cross gutter inventory, and manhole inventory. In addition, to the asset inventory update, NCE is also assisting the City to update its PMP and develop a multi-year focus plan for the City by carrying out pavement design and base repair marking. The City has approximately 159.43 centerline miles of streets.

Pavement Management and Pavement Condition Inspections

Various Cities and Counties, CA

Senior Field Technician. Listed below is a collection of Southern California agencies that Joseph has performed condition inspections. These projects have included various forms of inspections for pavement distress data collection, such as walking, windshield and/or semi-automated.

- | | | |
|----------------|----------------------|-----------------------|
| • Aliso Viejo | • Garden Grove | • Santa Ana |
| • Anaheim | • Highland | • Santa Barbara City/ |
| • Baldwin Park | • Lake Forest | County |
| • Buena Park | • Manhattan Beach | • South Gate |
| • Carson | • Newport Beach | • Thousand Oaks |
| • Corona | • Orange City/County | • Torrance |
| • Cypress | • Orange Cove | • Ventura City/County |
| • Dana Point | • Pacific Grove | • West Covina |
| • Diamond Bar | • Redondo Beach | • Whittier |
| • Downey | • San Clemente | • Yorba Linda |
| • El Cajon | • San Diego County | • MTC and OCTA |



Education

Mendocino College

Registrations/Certifications

OCTA PAVER™ Certification

MTC StreetSaver® Rater
Certification Program

Joined NCE

2017

Total Years of Experience

5 years



Ken Huisman

Field Supervisor



Ken brings more than 30 years of experience in the pavement and infrastructure management consulting industry. Over the course of Ken's career, he has provided many aspects of infrastructure management to government agencies across North America. During this time, he has supervised the creation of large and complex public pavement infrastructure and GIS databases for many municipal, state, and federal projects. Ken has also an extensive portfolio in providing PMP services and is proficient with most off-the-shelf pavement management programs in the marketplace. He is routinely consulted by various agencies to provide helpful solutions that are applied throughout the entire life cycle of public infrastructure management.

Ken is a graduate of the School of Engineering at Georgian College in Canada. He spent 17+ years of his career with Stantec Consulting working his way up to Senior Associate before founding Mission Geographic in 2007, now known as märker geospatial, a firm dedicated to providing public works users and decision makers with a variety of innovative and useful infrastructure asset management tools. His experience with various operation management software technologies together with data collection and GIS mapping services—such as infrastructure asset inventories, condition assessments, GIS field infrastructure mapping, and 3D reality capture using LiDAR, has made him a great resource for all the clients that he works with.

Career Accolades:

- Participates in the FHWA on the Long-term Pavement Performance program.
- Served and helped over 220+ local government public works agencies.
- Aided ten (10) state and provincial governments on pavement management projects.
- Involved with some of the earlier high-speed pavement profiling equipment provided in the industry.

Representative Projects

Ken has worked collectively with the NCE team on numerous asset and pavement management projects for many cities and counties in California as noted below:

- | | | |
|-----------------------|-----------------------|-----------------------------|
| • Anaheim | • Kings County | • Sacramento City/County |
| • Bakersfield | • Lake County APC | • San Diego County |
| • Baldwin Park | • Lakeport | • San Francisco City/County |
| • Calaveras County | • Madera County | • Santa Barbara City/County |
| • Clearlake | • Manhattan Beach | • Santa Cruz City/County |
| • Citrus Heights | • Mendocino COG | • Shasta County |
| • Contra Costa County | • Merced County | • Siskiyou County |
| • Davis | • Monterey County and | • Stanislaus COG |
| • Diamond Bar | Cities (TAMC) | • Thousand Oaks |
| • Elk Grove | • MTC | • West Sacramento |
| • Fresno COG | • Napa | • Yolo County |
| • Fullerton | • OCTA | • Yorba Linda |
| • Glenn County | • Orange City/County | California State |
| • Hermosa Beach | • Rancho Cordova | • California DOT |
| • Highland | • Redondo Beach | (Caltrans) |
| • Kern County | • Rocklin | |



Education

Environmental Engineering Degree, School of Engineering, Georgian College, Ontario, Canada, 1997

Registration/Certifications

MTC StreetSaver® Rater Certification Program
OCTA Prequalified for Automated Data Collection

Joined märker

2007

Total Years of Experience

30 years



Ammar Wager

Technology Lead



Ammar heads the technology section of Transconomy. He has a multitude of expertise including but not limited to product strategy, artificial intelligence, computer vision, LiDAR, and data science. Ammar is focused on product delivery and product enhancement with the aim of servicing firms in the US to make data-driven decisions to ultimately improve road safety and save lives.

Representative Projects

Pavement Inventory Project

City of Irvine, CA

Project Delivery Lead. The scope of work for this project included development of an up-to-date pavement inventory for the street network in the City of Irvine totaling approximately 1000 lane-miles. The result of this task was a compiled pavement inventory in KMZ format along with associated metadata.

Infrastructure Asset Data Collection Services

City of Santa Maria, CA

Project Delivery Lead. Together with NCE, performed right-of-way (ROW) asset inventory for the entire City's street network of 250 miles. In addition to the street network, the team was also tasked with doing an asset inventory for the City owned/maintained parking lots, parks, and special districts. NCE scope of work involved providing a GIS shapefile with all the asset attributes and hosting the data on the NCE Asset Management platform for 3 years. The following assets are being inventoried as part of this project.

Asset Extraction Project

City of Bowie, MD

Project Delivery Lead. Ammar's role in this project is to make sure the project delivery is accurate and complete. The City of Bowie, Maryland has 400 lane miles of streets. For this project, Transconomy performed PASER pavement condition surveys as well as a complete asset inventory. The asset inventory included signs, lighting, guardrails, curb and gutter, manholes, sidewalks, fire hydrants, etc.). The results were presented in Transconomy's Viewer software as well as a geodatabase and CSV files. This project identified almost 10,000 assets within the City and the results were very well received by the client.

Asset Extraction Project

City of Littleton, CO

Project Delivery Lead. The main requirement of the project was to deliver an up-to-date traffic sign inventory for the City of Littleton. All traffic signs along the routes, interchange ramps, and side roads as defined in the Manual on Uniform Traffic Control Devices for Streets and Highways as well as any State-specific or non-MUTCD signs were included in the asset inventory. This was a 400 lane-mile network.

Asset Extraction Project

City of Englewood, CO

Project Delivery Lead. This project consisted of extracting signs, sign supports, line striping and pavement markings. The signs were extracted and classified according to the MUTCD. The processed inventory was delivered as a CSV, KMZ, and an ESRI shape file geodatabase. The final inventory was also delivered in Transconomy Viewer as a value-add to this project. This was a 260 lane-mile network.



Education

MS, Mechanical Engineering,
University of South Florida,
Tampa, FL

BE, Mechatronics Engineering,
National University of Sciences
and Technology, Islamabad,
Pakistan

Registration

EIT, Maryland

Joined Transconomy

2019

Years of Experience

10 years



5. Fiscal Stability

Evidence of Corporate Stability

Nichols Consulting Engineers, CHTD. (NCE) is a financially sound corporation with offices in California, Nevada and Arizona. NCE and has experienced steady growth over the last several years and anticipates reasonable net revenue in its 2024 business plan. The firm maintains a current net revenue multiplier year to date of 3.53 evidencing its strong financial position. There are no known unrecognized claims against the firm, legal or otherwise. All statutory obligations, including tax filings and payments, are current and paid in full. All other obligations are current under the agreed business or supplier terms. NCE has never defaulted on an obligation. NCE maintains a line of credit adequate for its cash requirements. The line is currently unused. The firm also maintains an adequate backlog of professional work to ensure its long-term viability. Further, NCE has successfully completed audits with the Defense Contractors Agency, the Metropolitan Transportation Commission, and Caltrans for both financial and operational requirements. No deficiencies were noted in any of the auditors' reports.

Per the RFP requirements, NCE's supporting financial documentation, including a letter from our financial institution as well as the firm's latest audited financial statements **which are considered confidential**, follows this page.



6. Experience and Technical Competence

NCE's proposed project personnel have the relevant experience and in-depth understanding of the City's objectives required to successfully perform the pavement and asset management services as described in the City's RFP. With our combination of previous local experience in San Bernardino County, successful completion of similar projects, recognized technical leaders that are proven pavement experts, and an approach that demonstrates a detailed plan for the field inspections; the NCE Team will meet the project goals, save time and money, and make leading, positive contributions to the City's pavement and asset management process. **We are confident our team will successfully achieve the City's goals and objectives on this project.**

Experience

Technical and Professional Skills

PAVEMENT AND ASSET 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, asset management, civil engineering, and pavement design, evaluation, and analysis. We provide pavement management services and are proficient with most software currently in use, including StreetSaver®, PAVER™, and Cartegraph, which account for 76% of all California agencies. In addition to our pavement management experience, we can assist the City to plan a regional multi-year capital improvement program more effectively.

We are active in over 10 pavement-related (including pavement and asset management) committees at the **Transportation Research Board**, a national research organization, and since 2008, we have worked closely with **The League of California Cities' Oversight Committee** on the **Statewide Local Streets and Roads Needs Assessment**. Our role has been to lead the systematic needs assessment of the local roads and streets in California, report the condition of the system, and describe the overall funding strategies for the local streets and road transportation network.



NCE's expertise in pavement management systems is exemplified by our close relationship with OCTA and MTC, both agencies known for their PMP distress and software training, guidelines and certification programs. **We are both OCTA and MTC certified and we have a solid familiarity and working knowledge of StreetSaver®.** Additionally, over the years, we have also obtained a positive and collaborative relationship with StreetSaver® management and technical staff which serves as a benefit to our clients. When issues arise, StreetSaver® staff serve as an extension of NCE's team and respond quickly to inquiries. NCE's expertise in PMPs is exemplified by our close relationship with MTC. Therefore, we offer the City superior service and a wealth of knowledge and skills working the program and utilizing the data to apply and recommend new pavement technologies for design and rehabilitation. We are committed to remaining at the forefront of the latest PMP technology and methodology.

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(s), 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 includes ArcGIS®, and ArcPro.

RIGHT-OF-WAY ASSET INVENTORY AND INSPECTION

The NCE team can collect additional right-of-way asset data in concert with the same mobilization as the pavement distress data thus leading cost-savings for the City. The GPS and 360-degree right-of-way Street Scan will collect street-level imagery suitable for a citywide asset database, with approximately 1-meter precision. The asset inventories are provided as a tabular report and an industry-standard GIS format such as ESRI File Geodatabase (.gdb) compatible with ESRI ArcGIS Pro. NCE can also offer data-hosting services in ArcGIS Online for the City. The Street Scan can provide inventory and inspection information for a variety of roadside assets including traffic signs, sidewalks, curbs, ADA ramps, pavement markings, and other assets such as curb markings, cross gutters, speed humps, storm drains, and guardrails/ barricades.

Past Experience with Public Agencies

NCE has been in business for 34 years, since 1990.

NCE has been a leader in the field of pavement management and design and has successfully diversified its services over the last 34 years since 1990, while still maintaining its reputation as experts in the field of pavement research, management, design, and reconstruction. NCE is well versed in California's pavement management standards, regulations, and the latest software. We remain at the forefront of existing and emerging PMP methods and technology trends. NCE has performed PMP implementations and updates for more cities and counties than any other firm in California, and our clients in the pavement and engineering field include more than 220 agencies, including over 90 cities and counties in Southern California alone. We are currently providing or have provided PMP and asset management data collection services for the following local agencies:

- City of Aliso Viejo
- City of Anaheim
- City of Baldwin Park
- City of Buena Park
- City of Burbank
- City of Carson
- City of Cathedral City
- City of Corona
- City of Cypress
- City of Dana Point
- City of Diamond Bar
- City of El Cajon
- City of Fullerton
- City of Garden Grove
- City of Highland
- 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 San Clemente
- City of San Gabriel
- City of Santa Ana
- City of Santa Barbara
- City of Santa Maria
- City of Santa Monica
- City of Seal Beach
- City of South Gate
- City of Stanton
- City of Temple City
- City of Thousand Oaks
- 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
- **MTC and OCTA**

References

NCE has had the privilege to work with many cities and counties in California. The individual and agency references below will allow the City to verify NCE's experience in delivering associated services on similar pavement and asset management projects.

NCE Client References		
Frank Arebalo Program Manager County of San Diego PWD 5560 Overland Avenue, Suite 270 San Diego, CA 92123-1204 Phone: (858) 344-9545 Email: Frank.Arebalo@sdcounty.ca.gov Project: PMP Updates and Conversion Size: 1950 centerline miles	Jason Thiem Associate Civil Engineer City of Anaheim PWD 200 South Anaheim Boulevard Anaheim, CA 92805 Phone: (714) 765-5100 Email: jthiem@anaheim.net Project: PMP Updates and Conversion Size: 584 centerline miles	Lauren Sablan Principal Civil Engineer City of Redondo Beach PWD 415 Diamond Street Redondo Beach, CA 90277 Phone: (310) 318-0661 Email: lauren.sablan@redondo.org Project: PMP/Asset Inventory Updates Size: 159.43 centerline miles
Krishnamenon Nadaraia, PE Senior Civil Engineer County of Orange PWD 400 West Civic Center Drive Santa Ana, CA 92701 Phone: (714) 245-4516 Email: ocpw.ocgov.com Project: PMP Updates and Conversion Size: 674 centerline miles	Barry Ghaemi Associate Engineer City of Corona PWD 400 S. Vicentia Avenue Corona, CA 92882 Phone: (951) 739-4961 Email: Barry.Ghaemi@CoronaCA.gov Project: PMP Updates and Conversion Size: 400 centerline miles	Thomas Korman, PE Principal Civil Engineer City of Santa Maria PW/Engineering 110 South Pine Street, Suite 101 Santa Maria, CA 93458 Phone: (805) 361-9291 Email: tkorman@cityofsantamaria.org Project: Citywide Asset Data Collection Size: 250 miles

Please note that NCE has respectfully provided letters of reference for the City's review in the **Appendices** section of this document.

Local Experience and Knowledge of the City

NCE has performed similar PMP projects in San Bernardino County for the Cities of Highland and Upland. The NCE team also has knowledge and experience with the City's, Caltrans, and Greenbook engineering standards, requirements, and guidelines.

Project Specific Experience

The following pages detail our work on several projects with tasks that are similar, if not identical to the City's scope that were completed within the last five (5) years by NCE and NCE key personnel. These project examples demonstrate our team's pavement and asset management expertise, as well as the diverse experience and capabilities that we can provide to the City.

Pavement Management Program Implementation and Update | City of Highland, CA



Client:

Carlos Zamano, PE
Public Works Director/ City Engineer
City of Highland PWD
27215 Base Line Street
Highland, CA 92346
Phone: (909) 864-6861, ext. 254
Fax: (909) 862-3180
Email: czamano@cityofhighland.org

Description of Services: In 2004, NCE was retained by the City of Highland to implement a PMP for the entire City street network, which consists of 1,169 pavement sections or approximately 159 centerline miles. As part of the latest round of PMP updates (2023), NCE determined the condition of the existing streets and determine the PCI by functional class and sectors. NCE also performed numerous budget scenarios and presented the results of 4 budget scenarios which included the existing City budget for 5 and 10-year period, budget required to improve PCI by 1 point, and improve and maintain PCI at 70. Finally, NCE prepared a presentation to the City Council. This task also included meeting with City staff prior to the presentation to discuss items such as the goal of the presentation, the level of knowledge and backgrounds of the audience, the number of stakeholders involved and other potential issues.

Dollar Value of Services: \$264,830; **Dollar Value of the Fee:** \$264,830

Role of the Firm: Prime; **Relationship to Client:** Consultant

Duration of Services: 2004 (Implementation), 2020 to 2023 (PMP Updates)

NCE Key Staff: Margot Yapp (Principal-in-Charge), Vivek Jha (Project Manager), Shahram Misaghi (Senior Engineer), Timin Punnackal (Project Engineer), Franc Escobedo (Senior Field Technician), and Joseph DeLeon (Senior Field Technician).

Subconsultants: Ken Huisman of märker geospatial (Field Supervisor).

Citywide Asset Data Collection | City of Santa Maria CA



Client:

Thomas Korman, PE
Principal Civil Engineer
City of Santa Maria PW/Engineering
110 South Pine Street, Suite 101
Santa Maria, CA 93458
Phone: (805) 361-9291
Fax: (805) 928-4995
Email: (directly below)
tkorman@cityofsantamaria.org

Description of Services: NCE was selected by the City to perform right-of-way (ROW) asset inventory for the entire City's street network of 250 miles, including sidewalks, traffic signs, pavement markings, curb ramps, curb marking, and City owned/maintained parking lots. NCE scope of work involved providing a GIS shapefile with all the asset attributes and hosting the data on the NCE Asset Management platform for 3 years. The following assets are being inventoried by NCE as part of this project.

- Sidewalk
- Traffic Signs
- Pavement Markings and Striping
- Curb, Gutter, and Curb Markings
- Curb Ramps
- Driveway Aprons
- Light Post

NCE was recently selected by the City to perform pavement condition surveys on the arterials and collectors' streets (~100 miles), determine pavement geometry data for the entire network, develop pavement management sections based on City's current M&R practices.

Dollar Value of Services: \$173,500; **Dollar Value of the Fee:** \$173,500

Role of the Firm: Prime; **Relationship to Client:** Consultant

Duration of Services: 2023 and Ongoing

NCE Key Staff: Vivek Jha (Client Manager), Shahram Misaghi (Project Manager), Timin Punnackal (Project Engineer), Mahmoud Samara (Staff Engineer), Franc Escobedo (Field Technician), and Joseph DeLeon (Field Technician).

Subconsultants: Ken Huisman of märker geospatial (Field Supervisor), and Ammar Waqar of Transconomy (Technology Lead).

Pavement Management Program Updates and StreetSaver® Conversion | City of Anaheim, CA



Client:

Jason Thiem
Associate Civil Engineer
City of Anaheim
200 South Anaheim Boulevard
Anaheim, CA 92805
Phone: (714) 765-5100
Fax: (714) 765-5225
Email: jthiem@anaheim.net

Description of Services: NCE updated Anaheim's PMS in compliance with OCTA's Measure M2 requirements from 2013 to 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 performed by the NCE team under these contracts have included:

- Converted PAVER™ databases to StreetSaver® in 2019.
- 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; and performed additional scenarios per OCTA guidelines).
- Prepared all reports and submittals to OCTA.
- Identified missing sidewalk gaps.
- Develop a 5-year workplan for the MPAH.

Dollar Value of Services: \$617,730; **Dollar Value of the Fee:** \$617,730

Role of the Firm: Prime; **Relationship to Client:** Consultant

Duration of Services: 2014/15, 2016/17, 2018/19, 2020/21, 2022/23

NCE Key Staff: Margot Yapp (Principal-in-Charge), Vivek Jha (Project Manager), Timin Punnackal (Project Engineer), Mahmoud Samara (Staff Engineer), Franc Escobedo (Field Technician), and Joseph DeLeon (Field Technician).

Subconsultants: Ken Huisman of märker geospatial (Field Supervisor).

Required Statement(s)

Please note that none of the items listed under Item *b. Project Specific Experience, sub bullet (ii)* applies to NCE.

Technical Competence

In-house Resources

NCE's Fountain Valley office will be responsible for the work and delivery of this project and is well staffed and equipped to complete all necessary work. The NCE staff operate in state-of-the-art facilities that permit optimum working conditions. NCE's facilities include offices for professionals, technical, and support staff; state-of-the-art communications equipment; conference rooms; reproduction areas, and a computer room housing the Local Area Network (LAN). NCE utilizes the latest in standard office software, design engineering software, mobile applications, GIS platforms, computers, workstations, copying equipment including LaserJet printers, scanners, and high-speed large format plotters to produce high quality engineering plans.

Multi-disciplinary Staff Resources

The NCE team has the skills and capacity to complete multiple assignments, and we have extensive experience and staff in varied service disciplines located in California, Nevada, and Arizona to support multiple, concurrent projects. In addition, the NCE team can readily draw upon additional bench depth from a variety of technical professionals including engineers, CAD designers, biologists, scientists, planners, hydrologists, resource experts, GIS specialists, landscape architects, geologists, construction managers, inspectors, and field technicians who will support our key staff in delivering multi-disciplinary projects.



7. Proposed Method to Accomplish the Work

Project Understanding

NCE understands that the City of San Bernardino (City) is seeking proposals from consulting firms with expertise in developing, implementing, and/or preparing updates for a pavement management program (PMP). A comprehensive PMP will be critical in assisting the City in developing funding scenarios as well as multi-year budget and treatment plans that are practical and cost-effective. Ideally, the PMP is used to prepare a multi-year maintenance plan, which consists of a rotating maintenance schedule using consolidation of treatments versus rehabilitation and zone improvement approaches. These approaches are used by many cities, as it reduces construction costs by creating more aggressive bidding and reducing mobilization and minimizing disruptions to businesses and residents. NCE has performed similar analyses for numerous agencies in Southern California.

The PMP will provide the City's policymakers and asset management experts with the following key pieces of information:

1. Updated inventory of the City's current pavement network, including condition and attribute information of sectionalized street segments, such as to/from locations, functional class, length, width, area, number of lanes, etc.
2. The current Pavement Condition Index (PCI) of the entire network and by functional class.
3. Recommendations for future maintenance and rehabilitation (M&R) strategy based on discussions between NCE and the City's asset management professionals.
4. A seven-year workplan based on various funding and treatment scenarios, which will show the Council and the public the most cost-effective manner of spending the City's tax revenue and newer revenue sources such as SB1.
5. A long-term funding analysis to determine future needs which will help guide the City Council in making informed policy decisions and achieve PCI goals.

As part of this proposal effort, NCE staff visited the City to determine the overall condition of the roadway and assist us in tailoring our scope to the City's need. Based on our site, it seems that the City's street network is in "Fair" condition with the PCI ranging from 55-65. The following sections provide NCE's scope of work and proposed schedule to complete the work.

Scope of Work

Task 1: Coordination

NCE will first meet with City staff to kick-off the project by reviewing the technical approach and any administrative matters that may be necessary. At a minimum, items to be discussed will include:

- Scope of work and schedule; Field work (scheduling and access requirements, public safety concerns, and Quality Control Plan [QCP]); Available files (e.g., existing pavement management inventories, construction history, GIS shapefiles, available maps, and other relevant data); Maintenance practices, history, and costs; Paving budgets or PCI condition goals for modeling budget-driven and/or target-driven scenarios; Other issues as appropriate.

As part of this task, NCE will create an inventory of the City's existing street network in StreetSaver®. This will include the following items:

- Obtaining GIS Maps for the City's street Network or from the County website; Determining the functional classification of each street within City's street network; Setting up user-defined fields as desired.
- Sectionalizing streets into homogeneous pavement sections; Linking pavement management sections in selected PMP software to GIS shapefiles; Standardizing parameters for streets names and suffixes; Obtaining original construction dates; Determining surface types; Determining lengths and widths of sections.

StreetSaver® allows 6 additional GIS layers to be included at the time of GIS mapping integration with no additional cost. These layers can include information like council districts and work zones, among others. Our team will collaborate with the City staff to determine which additional layers will be most beneficial from the development of an annual street rehabilitation program perspective.

Deliverables for Task 1: Meeting agenda; virtual Kick-off Meeting; technical memorandum summarizing kick-off meeting; and virtual progress meeting; One-Year StreetSaver® License; Uploading GIS Shapefile with up to 6 GIS Layers; Populated PMP database with inventory & Linked pavement sections to GIS shapefile.

Task 2: Inspection, Surveys, and Related Services

NCE will perform fully automated pavement condition surveys on approximately 587 centerline miles of the City maintained streets. The distress collection protocols will be in accordance with ASTM D6433-20 protocols. Our Roadway Collection Vehicle System which is **certified by both OCTA and MTC** uses a 6D Dual-lane Road LiDAR Scanner that automatically collect a wide variety of pavement defects and pavement surface damages using advanced laser scanning technology to capture high resolution 3D roadway surface profiles and 2D digital pavement images. Our system conducts a comprehensive “curb-to-curb” pavement survey, providing ~100% full width sampling in contrast with other automated systems that use a downward image scanning device that only assesses distresses in the travel lanes.

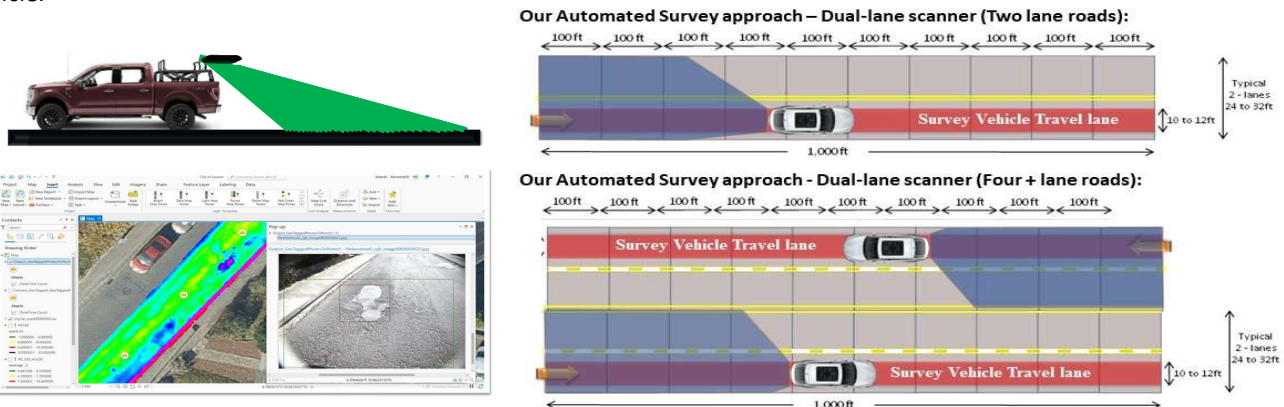
Our system is comprised of many sub-components in order to provide automated, real time, accurate and repeatable roadway condition results, such as inspection survey distances, longitudinal roughness “rideability”, crack detection and measurement, 2D and 3D pavement profiles, wheel track rutting depths and transverse profiles, as well as incorporating our global positioning (GPS) system, roadway marking reflectivity, and innovative 3D 360° imagery and LiDAR mobile mapping solutions. Our pavement distress data collection process involves the use of high-resolution 3D digital imaging technology and integrated distress laser pavement roadway scanners, which allow us to correctly quantify the type, severity, extent, start and stop points of all ASTM D6433-20 pavement distresses.

NCE’s pavement inspectors have undergone a rigorous certification test through both the Orange County Transportation Authority’s (OCTA) and the Metropolitan Transportation Commission (MTC) “Inspector Certification/Testing” programs. These cover both ASTM D6433 and StreetSaver® distress protocols. In addition, märker is also certified by the Metropolitan Transportation Commission (MTC) “Automated Rating Vendor Certification” program.

The “fuel” for any pavement management engine is the surface condition data. Pavement distress provides that important set of data in determining the costs to maintain the pavement network. Automated procedures will be conducted with a 100% sampling rate with full width “curb-to-curb” pavement survey coverage to collect distress data. The data collection system will be operated by OCTA-certified technicians, ensuring consistency and reliability in the collected data.

Should City personnel wish to observe our field crews and testing vehicles during the inspection surveys, we will be more than happy to accommodate this. Individual City staff may also accompany NCE’s field crew for up to ½ day to gain hands-on training at no additional cost to the City. We have found that this is the most effective training method for agency staff, as they become part of the data collection crew, rather than just observers. Please 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.

Deliverables for Task 2: Distress Data Collection for the entire network (587 centerline miles); and Demo of Data Collection vehicle.



Task 3: Quality Control

Quality management practices for pavement management suggest that a one-time inspection of the final data is typically inadequate and involves a high risk of failure. We have recognized the importance to effectively implement and ensure quality control and assurance practices on pavement distress data. We use a proven approach that integrates quality management

and control procedures throughout the entire data collection and delivery process. For this project, we have proposed the inclusion of a **QC Manager, Shahram Misaghi, MS, PE**. He will be responsible for the following:

- Calibrating all data collection activities; Comparing the field data collected with on-site conditions; Reviewing field activities, including spot checks on the field crews; Reviewing field procedures and making changes, as needed.
- Reviewing all data entry functions, including random spot checks; Reviewing reports generated and analyses performed to ensure a quality product.

NCE will prepare a QC Plan that will include the following components:

- Description of condition survey procedures (distress types, severities). All procedures, changes or modifications should be well documented in the QCP so that future updates will be consistent.
- Accuracy required for data collection or acceptability criteria.
- Description of how data will be checked for accuracy, e.g., control sections setup and distress comparisons between walking and automated surveys. A sample spreadsheet of distress detail comparisons between walking and automated survey on control sections is listed below; In addition to the control sections, NCE will also carry out additional quality control which will include comparing the rate of deterioration since the last PMP to flag any sections that have deteriorated at a higher-than-expected rate (2-3 PCI points per year) or the conditions has drastically improved without any recent M&R. NCE will then review each of the section flagged to ensure that the updated PCI clearly reflects the current pavement condition.

A draft QC plan will be submitted to the City for approval, and no field work will commence until a final plan has been accepted.

Deliverables for Task 3: Draft and final Quality Control (QC) plan.

Task 4: Data Entry

All data 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 pavement condition index (PCI) calculations, and correct any errors found. A PCI listing report will be prepared and submitted to the City. The City staff will also be trained on how to update data, add new road segments, and run applicable reports. Details regarding training are provided in Task 7

Deliverables for Task 4: Updated StreetSaver® database with pavement distress data; and PCI Calculations.

Task 5: Pavement Condition Report

As part of this task, NCE will provide the City with the PCI report (tables and maps) that will list the PCI for each section within City's street network. The report will also provide the PCI values for different functional classes and other criteria such as council districts as desired by the City staff.

NCE will next review M&R strategies with City staff and include the recommendation of appropriate treatments such as cape seals or overlays, and the determination of treatment unit costs. This will be an appropriate time to review the **use of new/sustainable treatments or materials, such as rubberized asphalt, rubberized chip or cape seals, microsurfacing, rejuvenators, cold-in-place recycling, full-depth reclamation, fiber reinforcement, warm mix asphalt, etc.**

Development of the M&R decision tree is a critical step in creating a PMP program as it has a direct and significant impact on the final work plan that is developed, as well as the budgeting consequences. NCE's experience in civil engineering & design and especially pavement engineering & design, as well as local conditions, allows our staff to be able to provide the City with solutions that are practical and workable. Once the M&R alternatives are defined, a treatment unit cost will be determined for each alternative. These alternatives and costs will then be entered into StreetSaver® for budgetary analysis. The unit costs will have a huge impact on the City's projections or needs assessments. Therefore, NCE will review any recent bid tabs and engineers estimate, together with those from neighboring cities as appropriate. Also, unit prices will be fully loaded rates, and will include not just contractors' prices, but also design, inspection, and testing costs.

Deliverables for Task 5: PCI Report; Meeting to discuss treatment alternatives; unit costs; and Decision tree.

Task 6: Pavement Rehabilitation Program

NCE will perform a **Budget needs analysis** using an analysis period of seven years. This task will identify M&R requirements for each street section and determine the total M&R requirements over the entire analysis period. The costs are then summed up

for the entire period. This forms the basis for performing Budget Scenario evaluations, which optimize the street sections for repair under constrained budgets.

The **Budget Scenarios** evaluation prioritizes road sections for repair under constrained, realistic, budgetary assumptions. **Five budget- or target-driven scenarios** will be performed after discussions with City staff. The budget analysis will focus on how different scenarios impact the PCI over time and how much (if any) additional funding is required to achieve the target PCI goals (determined by the City) for each scenario. Examples of typical scenarios include:

- Impact of existing funding levels on network PCI; Impact of drops and/or increases in existing funding on network PCI.
- Funding levels necessary to maintain current network PCI; Funding level necessary to improve current network PCI; Funding required to maintain a specific PCI (e.g. PCI = 70).

Based on discussion with the project team (NCE and City staff), a preferred scenario will be recommended. The results from the preferred scenario will be used to develop a budget options report which will include a seven-year rehabilitation program including treatments and when to apply treatments to streets. As part of this task, NCE will develop a candidate list of arterial streets with preferred recommendations that should be addressed each fiscal year. NCE will also produce a list of candidate segments section for collector, residential and alleys. The residential streets will be grouped together so they are in the same neighborhood. Please note this task, does not include development of work zones, however we accounted for 40 hours of engineer time to group the recommended streets by neighborhood. If the

Deliverables for Task 6: Results from various budget scenarios; Draft and Final Budget Options Report with 7-year Rehabilitation program with Listing of Candidate streets/segments for Arterial, Collector, residential, and Alleys for each fiscal year; and Recommendation on budget shortfalls.

Task 7: Pavement Management Program Update

As part of this task, NCE will prepare a PMP report which will be a single comprehensive document with appendices that clearly and concisely contains all relevant findings, observations, and recommendations. The report and its exhibits will be presented legibly. The report charts and map exhibits will have distinguishable color gradations. At a minimum, the Final report will contain the following components:

- Executive Summary outline complete report.
- Methodologies utilized for field surveys and budget analysis.
- Current overall pavement conditions (PCI):
 - Condition distribution by functional road classification; Condition distribution by percent of roadway network; and Condition comparison with other cities in region and state.
- Projected annual repair/rehabilitation road maintenance programs over a 7-year period.
- Analysis that allows City to measure impact of cost of deferred maintenance for various funding levels.
- Exhibit showing proposed annual work to be performed based upon available funding over a 7-year period.
- GIS map exhibit showing existing PCI rating and a 7-year work program.

As part of this task, NCE will present the results of the PMP to the City staff. In addition, our team will also prepare and present a 15-minute non-technical presentation to the City Council. Additionally, NCE will also provide one-day training hands-on training session for up to 5 City staff on City's test database on how to effectively use the StreetSaver® software and its data entry requirements.

Deliverables for Task 7: Pavement Management Program Update Report; One-day hands-on training for 5 City staff; and Presentation to City staff and Council.

Task 8: Asset Inventory

As part of this task, NCE will perform an asset inventory for the entire City network. For cost effective purposes, NCE will perform this task using Artificial Intelligence-Machine Learning (AI-ML) approach and perform a manual QC to obtain 95% reliability. The following assets can be inventoried by NCE.

- Sign Inventory (type and locations); Sidewalk inventory & width; Pavement Marking and Striping Inventory; Curb Ramps; and Curb Marking.

It is assumed that all the assets noted above are assumed to be visible from public right of way while driving the City street network.

Deliverables for Task 8: Shapefile with all the above noted asset inventory and images; and Memo Report.

Task 9: Additional ROW Asset Inventory (OPTIONAL)

In this optional task, NCE will perform an asset inventory for the features noted below for the entire City network.

- Sign condition; Signpost Type; Sign Size and Height.
- Sidewalk Condition; Driveway Apron Inventory.
- Curb and Gutter Inventory/Marking Inventory and condition.
- Line Striping Inventory and condition; Pavement Marking condition.
- Light post Inventory; Guardrail/Traffic Barrier Inventory; Utility Box Inventory.

Please note the condition assessment will be based on overall condition assessment (good, fair, and poor) and not in accordance with any federal or state standards. Additionally, all the assets noted above are assumed to be visible from public right of way while driving the City street network.

Deliverables for Task 9: Shapefile with all the above noted asset inventory and images; and Memo Report.

Task 10: Technical Support (OPTIONAL)

As part of this optional task, NCE will also provide up to 80 hours technical support relating to the StreetSaver® software and PMP to the City Staff.

Deliverables for Task 10: Technical Support (up to 80 hours) for the City staff.

Task 11: Work Zone Development, Focused Multi-Year Work Plan for CIP, & Base Repair Markout (OPTIONAL)

As part of this task, NCE will work with the City to develop work zones that address the City's long-time objectives. NCE is working with multiple cities in southern California to develop work zones that take into various factors such as geography, roadway condition, and others. Additionally, as part of this task NCE will develop a focused Multi-Year M&R Work Plan; the PCI plays a role in treatment selection, but for design purposes, confirmation and refinement of proposed treatments must be performed as well as consideration of base repair quantities, aggregation or re-grouping of streets to maximize construction savings, separation/combination of surface seal or rehabilitation paving programs, and cost to comply with complete and green street policies. The multi-year plan will only be developed for the preferred scenarios selected by the City and will be developed for **three (3)** fiscal years.

The criteria for various funding sources available to the City will be considered when selecting streets in the Work Plan. NCE will perform focused field reviews to identify the items listed below for streets selected by the PMP software for the preferred scenario. Before developing the work plan, NCE staff will meet the City staff in the field to determine their priorities and objectives in determining the rehabilitation treatment and repair criteria. Our scope includes one additional meeting to finalize the multi-year plan. The Work Plan elements include:

- Verify treatment type and project limits.
- Identify approximate base repair percentage or mark digouts in the field.
- Identify number of Americans with Disabilities Act (ADA) ramp upgrades triggered by proposed treatments.
- Identify potential tripping hazards area caused by tree roots or surface materials build-up area near the pavement edge. Tripping hazards area locations (house address or distance to intersection) would be recorded in the field review.
- Identify alternative newer technologies (CIR, FDR, etc.) and/or alternative surface seal treatments on cul-de-sac areas.
- Identify excessive cracking problems and propose alternative treatments as appropriate.

NCE will generate enough candidate streets for grouping, consolidation, removing outliers, and determining other conflicts. Based on the criteria agreed upon with the City, pavement maintenance strategies, and field observations, the sections selected would be grouped together geographically to produce continuous sections for treatment to minimize inefficiencies with shorter and isolated street segments and reduce construction costs and traffic impacts. If there is a budget surplus or a need to update the decision tree based on the multi-year focus plan, NCE will re-run the preferred scenario budget analysis to incorporate the findings from the site visits/multi-year focus plan. As part of this task, NCE staff will assist the City in the CIP program by marking base repairs locations in the field. For the base repair markout, we have allocated 120 hours.

Deliverables for Task 11: Work Zones, Focus work plan in tabular and map formats; Updated budget analysis with multi-year work plan; and 120 hours of Base Repair Markout.

Please note that due to page limitations we have included our proposed *Project Schedule* by task in Section 8. Fee Proposal.

City of San Bernardino
Pavement Management Program & Asset Inventory
RPF F-24-03

Task Description	Labor Hours								Sub-Consultant, Software, & Reimbursable Expenses	Task Totals
	Project Manager	Principal In-Charge	QC/QA	Project Engineer	Staff Engineer/ PMP Analyst	Senior Technician	Technician	Technical Admin		
Rate	\$210	\$240	\$210	\$180	\$140	\$110	\$100	\$100		
Task 1. Coordination	40	2	16	52	200			40	\$ 65,480	\$ 110,200
Task 2. Inspection, Surveys and Related Services	6				40	64	216	4	\$ 131,100	\$ 167,000
Task 3. Quality Control Plan	1		16		40	200		4	\$ 11,830	\$ 43,400
Task 4. Data Entry	2		12		30				\$ 4,960	\$ 12,100
Task 5. Pavement Condition Report	1	1	6		24				\$ 130	\$ 5,200
Task 6. Pavement Rehabilitation Program	2	6	8	50	140				\$ 360	\$ 32,500
Task 7. Pavement Management Program Update	32	16	40	48	80			32	\$ 3,300	\$ 45,300
Task 8. Asset Inventory	1		6		16	60			\$ 12,590	\$ 22,900
Task 8.1. Sidewalk Inventory	1		4		80	80			\$ 9,049	\$ 30,100
Task 8.2. Sign Inventory	2		8		40	280			\$ 26,399	\$ 64,900
Task 8.3. Curb Ramp Inventory	1		4		14	44			\$ 6,449	\$ 14,300
Task 8.4. Pavement Marking & Striping Inventory	1		4		18	88			\$ 11,149	\$ 24,400
Task 8.5. Curb Marking	1		4		88	88			\$ 4,950	\$ 28,000
Task 8.6. Data Collection QC & Asset Inventory Validation	1		8		40	40			\$ 110	\$ 12,000
Task 8.7. GIS Deliverable & Technical Memorandum	1		8		12	24		8	\$ 290	\$ 8,500
OPTIONAL TASKS										
Task 9. Additional ROW Asset Inventory	6		32		120	320		8	\$ 61,219	\$ 122,000
Task 10. Technical Support	32		8		20				\$ 760	\$ 11,000
Task 11. Work Zone Development, Focused Multi-Year Work Plan for CIP, & Base Repair Markout	8		24		120	160		4	\$ 10,579	\$ 66,500
Totals without OPTIONAL TASKS	93	25	144	150	862	968	216	88	\$ 288,146	\$ 620,800
TOTALS with OPTIONAL TASKS	139	25	208	150	1122	1448	216	100	\$ 360,705	\$ 820,300

Assumptions:

The above cost proposal is based on 650 centerline miles of streets

Task 1 Includes Street License for three (3) years; Developing Pavement Management Sections for the entire street network, calculating pavement management section geometry (length, width, and area) data, & setting up City's GIS Shapefile with 6 GIS layers in the StreetSaver Database.

Task 1 includes updating M&R history for since last PMP updated or the past 5 years.

Task 2 assumes ~90% QC of the entire street network (~650 centerline miles)

Task 3 assumes 5% QC. Task 3 includes calibration sections, control sections, and desktop review.

Task 5 includes maps, shapefiles, and tables of existing PCI

Task 6 includes 5 budget scenarios

Task 7 includes On-Site hands-on comprehensive StreetSaver training for 5 City staff.

Task 7 includes two (2) study session/workshops.

Task 8 includes asset inventory (sidewalk, traffic signs, curb ramp, pavement marking & striping, and Curb Marking)

Task 9 includes - Generalized (good, fair, or poor) condition assessment for sidewalk, parking marking & striping, curb & Gutter; Inventory for Driveway, Light post, utility box, & Guardrail/Traffic Barrier

Task 10 includes 60 hours of technical support related to PMP, StreetSaver, & Street Selection for CIP.

Task 11 Includes developing work zones and Multi-Year Street List for 3 Fiscal years with every street recommendation confirmed by Pavement Engineers visting each street section in person. Also, includes 120 hours of technician time on-site to markout base repairs.

Project Schedule

ICE proposes the following schedule for all work to be completed.

[illegible]

Assumptions:

M-Meetings; X-Milestones

Task 1 includes City providing GIS shapefile with City maintained streets (~587 centerline miles) within one week from the Kick-off Meeting.

Task 1 City to provide M&R history.

Task 2 includes no more than 587 centerline miles

Task 2 does not include weather delays

Task 6 City to provide recent bid tabs; Includes 5 budget Scenarios

Task 7 includes one Draft and one Final report

Task 7 includes In-person StreetSaver Training and presentation to City staff and Council at City's Convenience



9. Insurance

NCE acknowledges and concurs with the provisions and can/will meet the insurance requirements contained in “**Exhibit B**” of the City’s RFP without alterations to this agreement. Upon award of a contract, NCE will provide the City of San Bernardino with a certificate of insurance naming the “**City**” as “**an**” additionally insured. A sample insurance certificate is provided on the next page and a summary of our insurance coverage is below.

Commercial General Liability \$2,000,000 (each occurrence)/ \$4,000,000 (aggregate)

Professional Liability \$5,000,000

Automotive Liability \$1,000,000 (combined single limit)

Workers’ Compensation \$1,000,000 (in accordance with State Law)

Cyber Liability \$1,000,000 (each occurrence)

Please note that **Aviation and/or Drone Liability** is not applicable to this project.

A sample insurance certificate is provided on the following page.



CERTIFICATE OF LIABILITY INSURANCE

NICHCON-02

MCCOWANA

DATE (MM/DD/YYYY)
5/15/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER License # 0E67768 IOA Insurance Services 4370 La Jolla Village Drive Suite 600 San Diego, CA 92122		CONTACT Erica Wilson PHONE (A/C, No, Ext): (858) 754-0063 50233 FAX (A/C, No): (619) 574-6288 E-MAIL ADDRESS: Erica.Wilson@ioausa.com	
		INSURER(S) AFFORDING COVERAGE INSURER A : RLI Insurance Company INSURER B : Allianz Underwriters Insurance Company INSURER C : INSURER D : INSURER E : INSURER F :	NAIC # 13056 36420
INSURED Nichols Consulting Engineers, CHTD 300 East 2nd Street, Suite 1210 Reno, NV 89501			

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Cont Liab/Sev of Int GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		PSB0003222	5/17/2023	5/17/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Ded \$ 0
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY Comp.: \$500 <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY Coll.: \$500		PSA0001184	5/17/2023	5/17/2024	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 0		PSE0003030	5/17/2023	5/17/2024	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N/A	PSW0001955	5/17/2023	5/17/2024	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
B	Prof. / Poll. Liab.		USF00807823	5/17/2023	5/17/2024	Per Claim 5,000,000
B	Ded.: \$50k Per Claim		USF00807823	5/17/2023	5/17/2024	Aggregate 5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
PROOF OF INSURANCE

CERTIFICATE HOLDER

CANCELLATION

FOR YOUR REFERENCE ONLY ACORD 25 (2016/03)	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE <i>T. Kelly Howell</i>

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10. Litigation

NCE does not and has not had contract failures, civil or criminal litigation, or investigations. NCE has never sought bankruptcy protection (whether voluntarily or involuntarily) in the last ten (10) years. NCE has never been disciplined or censured by any regulatory body. NCE does not have and has not had any other litigation that may affect our ability to perform services. There have been no pending litigation, judgments, or other legal proceedings related to the provisions of services, in the past ten (10) years, and there are no known unrecognized claims against the firm, legal or otherwise. NCE has not in its 34 years in business had any claim against the firm concerning NCE's work on a project that has been filed in court or gone to arbitration. Furthermore, NCE does not have any planned office closures or impending mergers, and there are no known conditions that may impede NCE's ability to complete the services requested under this contract,



11. Other Information

Technical and Management Approach for Completing Projects

NCE brings a collaborative, innovative, and problem-solving mentality to the management of all our projects, and this is the foundation of our approach. We believe in allocating the right resources at the right time to cost-effectively produce high-quality deliverables and projects for our clients. We focus on understanding our client's "big picture," while increasing the value of every dollar spent on every effort or project by identifying and eliminating challenges before, they occur. This starts with assigning experienced and capable project managers and surrounding them with handpicked teams tailored to every effort, task, or project. NCE's objective for any contract is to deliver technically sound and high-quality projects on-time, on-budget, and with a high level of satisfaction to our clients. Our approach is outlined in the following paragraphs.

Project Approach – NCE aligns talented and experienced project managers, engineers, and technicians in direct contact with clients to collaborate, resulting in a unique partnership that is beneficial to both employees and clients alike. Repeat and referred clients are a reflection of our commitment and dedication to providing quality, timely products to our clients.

Project Kickoff – Our Project Manager, Vivek Jha, MS, PE, and other key team members will meet with City staff to review the project goals and the expected deliverables and discuss lessons learned from previous projects.

Delivering Projects with Efficiency and Effectiveness – During the project execution phase, the Project Manager will be responsible for delivering the scope of work. Project tasks will include managing the budgets, project schedule, subconsultants, and preparation of work products. Our Project Manager, Vivek Jha, MS, PE, will be responsible for monitoring the progress of the project, ensuring that the scope of work is fully performed, ensuring the financial elements are being tracked and are on budget, monitoring schedules, and ensuring that the necessary resources are assigned and committed to the project. He will be responsible for maintaining consistency of invoices with the project contracts and deliverables, ensuring that subconsultant agreements are consistent with the master contract (flow downs), and that NCE delivers a technically sound project on time, on budget, and with a high-level of satisfaction to the City.

Communications – One of the more critical elements in providing quality assurance is to ensure adequate communications, both between NCE and the City, as well as within the NCE team. To ensure that City is kept well informed of progress, NCE proposes that in addition to monthly progress reports, we can provide 15-to-20-minute progress update(s) meetings. Typically, this will summarize the progress made to date, identify any problems or questions NCE may have, and an estimate of the work tasks for the next period. It will also provide an opportunity for all city staff to ask questions as well as for NCE to describe upcoming tasks. Within NCE, all field crews are in daily contact with our Project Manager, Vivek Jha, MS, PE. Typically, these are brief, five-minute phone conversations that update the Project Manager on the progress in the field. Occasionally, there may be enough questions to require a special field trip by both the Project Manager and QC Manager to resolve the matter.

Proven Record of Meeting Project Schedules – Clients have come to rely on NCE's ability to meet project schedules. Keeping the end project in mind, our concise documentation, and management's ability to quickly resolve issues, are all key factors to completing a project on time. Timeliness is a high priority for the NCE team. Clear communication, concise documentation, prompt problem resolution, and strict review of the schedule are the tools NCE uses to complete the project within the established timeframe. NCE works collaboratively with our clients to prepare project-specific schedules with clear delivery timelines. In the event of a potential delay on project milestones, NCE will promptly notify the City, present the details of the potential delay, and make recommendations for bringing the project schedule back on track.

On Budget Performance – NCE has a cloud-based cost accounting system that accurately tracks specific job costs, provides real-time updates on remaining budget, and documents task progress. Labor hours and expenses are entered into the system, which allows NCE's Project Manager to access the information at any time from their computer or mobile device. Costs are routinely compared with the budget and schedule to manage the team's level of effort, labor hour allocation, and resource scheduling. Our Project Manager will regularly email the team members a real-time snapshot of the remaining budget and task progress, which is auto generated by the software, to keep team members aware of budget and time constraints. NCE's cost control and invoicing system are well suited to tracking costs, preparing invoices in styles and formats consistent with City requirements.

High-Quality Project Deliverables – NCE has an active Quality Assurance Management Program (QAMP) that includes specific quality control (QC) procedures. The goal of NCE's QAMP is to infuse quality throughout the entire project. Each NCE employee attends our quality assurance training and is required to pass an exam and receive certification. **NCE's QAMP is based on four principles: client satisfaction, employee participation, problem prevention, and continuous quality improvement.**

Managing Subconsultants – Managing the subconsultant contracting process and performance needs to be as structured as other aspects of project management. Just as the City looks to NCE as the overall responsible party for the contract with them, NCE will be diligent with each of its teaming partners to be sure their performance is going to enhance the overall project results and meet the goals and expectations of the City. NCE requires a quality assurance/quality control (QA/QC) program plan from each teaming partner. NCE will ensure the scope of services in each subconsultant contract is clearly written with identified deliverables and milestones and the division of work and responsibilities is clearly defined to eliminate confusion, duplication, and gaps in the project work. NCE will coordinate and integrate subconsultant activity and hold regular meetings to facilitate project coordination, understand the subconsultant's progress on the work, and to answer pressing questions.

Community Involvement

As mentioned above in the document, NCE has successfully completed similar PMP and Pavement Related projects in the nearby Cities of Highland, Riverside, and Upland

Previous Involvement with the City

NCE has not had any prior involvement with the City, however, we are excited about the opportunity to work with the City and making your project(s) a top priority.

Conflict of Interest Statement

NCE does not have any actual, apparent, direct or indirect, or potential conflicts of interest that may exist with respect to NCE, any of its employees, or any other person relative to the services to be provided pursuant to this RFP.



12. Certification of Proposal

The undersigned (NCE) hereby submits its proposal and, by doing so, agrees to furnish services to the City in accordance with the Request for Proposal (RFP), and to be bound by the terms and conditions of the RFP.

Firm:

Nichols Consulting Engineers, CHTD. (NCE)

Authorized to Bind Company

Margot Yapp, PE, Principal-in-Charge

NCE Proposal Contact

Vivek Jha, MS, PE, Project Manager



13. Appendices

The subsequent pages contain **Standard Hourly Rates** for NCE and our proposed teaming partners. In addition, we have also included client **Letters of Reference** for the City's review.

NCE Standard Rate Schedule

Professional Services		Technical Services			
Classification	Hourly Rate	Classification	Hourly Rate	Classification	Hourly Rate
Principal	\$240	Senior Construction Manager*	\$130	Field Scientist	\$95
Associate	\$210	Senior Designer	\$135	Project Administrator	\$100
Senior	\$180	Senior Technician	\$110	Field/Eng. Technician	\$100
Project	\$160	Construction Inspector*	\$140	Project Administrator	\$115
Staff	\$140	CAD Technician	\$110	Tech. Word Processing	\$100
		Senior Field Scientist	\$115	Clerical	\$100
		Litigation Support (expert testimony)300% of above rates			

*Rate will be adjusted for prevailing wages required on Public Works projects in the State of California.

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.

Travel – Meals will be covered through a flat per diem rate of \$60/day/per person. Airfare, Lodging, and other travel costs will be charged at cost + 15%.

Equipment

Plotter Usage -----	(separate fee schedule)
Truck -----	\$115/day
Automobile-----	IRS Standard Mileage Rate+10%
Falling Weight Deflectometer Testing -----	\$4,500/Day
Coring-----	\$5,500/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 + 10%

Communication/Reproduction – In-house costs for 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, whether 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.

This Schedule of Charges is valid from 01/01/2024 to 12/31/2024.

Subconsultant Standard Rate Schedules

märker geospatial Standard Rate Schedule

Classification	Hourly Rate	Classification	Hourly Rate
Principal	\$195	Senior Construction Manager/Field Manager	\$125
Associate	\$170	CAD/GIS Technician	\$110
Senior	\$155	Project/Program Administrator	\$95
Project	\$130	Field/Engineering Technician	\$98
Staff	\$118	Clerical	\$73

Transconomy Standard Rate Schedule

Classification	Hourly Rate	Classification	Hourly Rate
Program Manager	\$247.10	Subject Matter Expert	\$258.04
Senior Engineer II/III	\$214.12	Senior Database Engineer	\$142.75
Senior Engineer I	\$175.68	Database Engineer	\$120.78
Project Engineer	\$137.25	Senior Software Developer	\$142.75
Staff Engineer	\$120.78	Software Developer	\$120.78
Data Specialist I (Civil Engineer)	\$170.20	Technical Writer/Editor	\$98.82
Data Specialist II (Civil Engineer)	\$203.14	Project Support Staff	\$98.82

Letters of Reference



Subject: LETTER OF RECOMMENDATION FOR NICHOLS CONSULTING ENGINEERS (NCE)

To Whom It May Concern:

I am pleased to recommend Nichols Consulting Engineers (NCE) for their pavement management services. NCE has conducted several updates to our City-wide Pavement Management Program over the last decade, including its current 2023 update. Their services have included field surveys of the city streets, database updates, development of decision trees, and budget scenario reports, recommendations, and council presentations.

NCE's team was responsive, clearly communicated their progress, and tracked their expenditures to ensure they stayed within budget. The City's 2023 Pavement Management Program Update project had very aggressive deadlines and NCE staff worked diligently with City staff to complete the project deliverables on time and in a professional manner. Additionally, NCE staff worked with the City to explain the intricacies of the StreetSaver program and were readily available to answer any questions and assist the City staff after completing their project.

There are no reservations in recommending NCE to other agencies participating in consultant services for pavement management because of NCE's knowledge and experience in the subject and their professional approach to meeting their client's needs.

In closing, NCE has been and hopefully will continue to be an asset to the pavement management community and to the City of Highland. Opportunities to work with NCE again in the future are welcomed.

Sincerely,

Carlos Zamano, P.E.
Public Works Director/City Engineer
City of Highland

Mayor
Larry McCallon

Mayor Pro Tem
Penny Lilburn

City Council
Jesse Chavez-Cordova

City Council
Anaeli Solano

City Council
John P. Timmer

City Manager
Joseph A. Hughes

27215 Base Line • Highland, CA 92346

Tel: 909.864.6861 • Fax: 909.862.3180 • www.cityofhighland.org





PUBLIC WORKS

DEREK R. GADE, P.E.
DIRECTOR

5510 OVERLAND AVENUE, SUITE 410, SAN DIEGO, CALIFORNIA 92123-1237
(858) 694-2212

WILLIAM P. MORGAN, P.E.
ASSISTANT DIRECTOR

To whom it may concern,

I have worked with Nichols Consulting Engineers (NCE) since approximately 2015. NCE has provided pavement management services diligently and professionally. NCE has been our trusted partner for several recent updates to our StreetSaver Pavement Management System, including the most recent one in 2021. They have provided us with field surveys of all County maintained roads using an automated method, database updates and maintenance, development of decision trees and optimization strategies, and budget scenario reports and recommendations, among other services.

NCE's team, led by Project Manager Vivek Jha and Project Engineer Timin Punnackal, have always performed professionally and responsibly throughout our projects. They have communicated their progress regularly, stayed within the budget, and delivered their work on time. They also helped us understand how different budget scenarios and decision trees would affect our "Road to 70" goal, which aims to improve the overall network pavement condition of our roads to 70 on the pavement condition index scale. They have assisted us in creating clear and concise charts, tables, and maps to present the results of their analysis to technical and non-technical audiences. NCE has always been available to answer our questions and perform analysis as needed.

NCE has demonstrated their expertise and professionalism in this field and has met our expectations and needs. We look forward to working with NCE again in the future and appreciate their valuable contribution to the pavement management community and to the County of San Diego.

Sincerely,

Frank Arebalo, P.E.
Program Manager
County of San Diego – Dept of Public Works
(858)344-9545

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