



REPORT TO MAYOR AND COUNCIL

TO THE HONORABLE MAYOR AND COUNCIL:

DATE: December 8, 2015

SUBJECT: REVIEW AND APPROVE THE WORK PROPOSAL FROM KIMLEY-HORN AND ASSOCIATES AND AUTHORIZE STAFF TO DIRECT TRAFFIC CONSULTANT KIMLEY-HORN AND ASSOCIATES TO PROCEED WITH DESIGN SERVICES FOR OPERATIONAL IMPROVEMENTS ON PARALLEL ARTERIALS ADJACENT TO INTERSTATE 680 AND STATE ROUTE 242 IN THE CITY OF CONCORD (CAPITAL IMPROVEMENT PROGRAM PROJECT NO. TIP-1612) AND FINDING THE PROJECT CATEGORICALLY EXEMPT UNDER CEQA (NO GENERAL FUNDS)

Report in Brief

In 2015, the City Council directed staff to terminate the Commerce Avenue Extension over Pine Creek project and redirect \$2,893,103 in Measure C I-680 funds from this project to a new project to install state-of-the-art transportation systems along major corridors parallel to Interstate 680 and State Route 242 to improve traffic flow in the downtown/West Concord area. The new project was approved by the City Council as part of the Operating Budget for FY 2015-16 and FY 2016-17 and is listed in the current Capital Improvement Program (CIP) as Project No. TIP-1612.

City staff has reviewed design requirements for this project and determined that traffic consultant Kimley-Horn and Associates (KHA) is best qualified to perform the design for this project under a standing Master Agreement (No. 5315) for professional services with KHA. The consultant fee to complete the design work for this project is estimated at \$184,520. Master Agreement No. 5315 authorizes staff to direct the consultant to proceed with the work on any individual project up to \$75,000. Work proposals exceeding \$75,000 in compensation for the project requires City Council review and approval.

Staff recommends that the City Council review and approve the work proposal from Kimley-Horn and Associates and authorize staff to direct traffic consultant Kimley-Horn and Associates to proceed with design services for operational improvements on parallel arterials adjacent to Interstate 680 and State Route 242 in the City of Concord (Capital Improvement Program Project No. TIP-1612) (*no General Funds*).

**REVIEW AND APPROVE THE WORK PROPOSAL FROM KIMLEY-HORN AND ASSOCIATES AND AUTHORIZE STAFF TO DIRECT TRAFFIC CONSULTANT KIMLEY-HORN AND ASSOCIATES TO PROCEED WITH DESIGN SERVICES FOR OPERATIONAL IMPROVEMENTS ON PARALLEL ARTERIALS ADJACENT TO INTERSTATE 680 AND STATE ROUTE 242 IN THE CITY OF CONCORD (CAPITAL IMPROVEMENT PROGRAM PROJECT NO. TIP-1612) AND FINDING THE PROJECT CATEGORICALLY EXEMPT UNDER CEQA
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Background

In 2015, the City Council conducted a comprehensive review of the Commerce Avenue Extension over Pine Creek project and directed staff to terminate the project due to projected costs to complete the project and uncertainties with the permitting process required by outside agencies. This project was funded in part through the Contra Costa Transportation Authority (CCTA) Measure C I-680 program and had a remaining balance of \$2,893,103 at the time it was terminated.

Subsequently, the City Council approved a new CIP project, Operational Improvements on Parallel Arterials, to install state-of-the-art transportation systems along major corridors parallel to Interstate 680 (I-680) and State Route 242 (SR 242) to improve traffic flow in the downtown/West Concord area. The Council further directed that the Measure C I-680 funds (\$2,893,103) previously programmed by CCTA for the Commerce Avenue Extension project be redirected to the new project as part of the Operating Budget for FY 2015-16 and FY 2016-17. The new project is listed in the current Capital Improvement Program (CIP) as Project No. TIP-1612.

Project No. TIP-1612 consists of upgrading the existing interconnect cable for 45 traffic signals from twisted-pair copper to fiber-optic cable for faster and more reliable communication and traffic monitoring capabilities. The project area and affected corridors are highlighted in **Attachment 1**. The project area is surrounded by Concord Avenue to the north, Galindo Street to the east, Monument Boulevard to the south, and I-680 to the west. The street network contained within these boundaries includes: Clayton Road, Diamond Boulevard, Gateway Boulevard, Market Street and Willow Pass Road. The traffic signals in the project area include two Caltrans ramp signals at I-680 and Willow Pass Road. Staff will further coordinate with Caltrans on how these intersections should be included on the project.

The proposed project will take advantage of the transmission power and bandwidth of fiber cable to allow for high-resolution traffic monitoring (CCTV) cameras to be installed at key intersections as part of the project. The new CCTV cameras will be used to monitor traffic flow and incident management from City offices by streaming real-time video from the intersections. The cameras can also be accessed by City staff from other departments including Concord Police.

The project area is equipped with an extensive network of underground conduit that houses copper interconnect cable between traffic signals. The new fiber cable will be pulled through the existing conduit and will replace the old copper cable. The fiber cable will connect all 45 traffic signals on this project back to the signal shop at the City's Corporation Yard where the traffic signal communication hub is located. The existing conduit system will be upgraded as appropriate to accommodate the new fiber interconnect.

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California Environmental Quality Act

The proposed design contract is not a project within the meaning of Section 15378 of the State CEQA Guidelines. If the proposed design contract is a project under CEQA it is subject to the exemption contained in CEQA Guidelines Section 15061(b)(3) because it can be seen with certainty to have no possibility of a significant effect on the environment as any future construction would need to be analyzed once design work is complete.

Discussion

In 2015, the City of Concord obtained the approval of TRANSPAC and the CCTA Board to reprogram \$2,893,103 in Measure C I-680 funds from the Commerce Avenue Extension over Pine Creek project to the proposed Operational Improvements on Parallel Arterials project. The first step in the implementation of the new project was to identify a design consultant and request appropriation of funds for design from CCTA.

To this end, Transportation staff has reviewed the City's approved list of traffic consultants who have Master Agreements with the City to provide transportation-related professional services through June 30, 2017. Based on this review, staff has determined that traffic consultant Kimley-Horn and Associates (KHA) would be best suited and qualified to perform the design for this project, given their area of expertise in design of Intelligent Transportation Systems (ITS) and considering current distribution of work among City consultants.

Moreover, KHA was recently hired by the IT Department to field survey existing conditions of underground interconnect conduit on a citywide basis, including conduit in the project area. This work has been completed and should provide KHA with a clear advantage to design the project in the most efficient and cost-effective way possible.

KHA is under Master Agreement No. 5315 with the City to provide professional services through June 30, 2017 as noted above. The consultant fee to complete the design work for this project is estimated at \$184,520 (see KHA work proposal in **Attachment 2**). Master Agreement No. 5315 authorizes staff to direct the consultant to proceed with the work on any individual project up to \$75,000 via a Purchase Order (PO). Work proposals, such as this one, that exceed \$75,000 in compensation for the project requires City Council review and approval.

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Staff recommends that the City Council authorize staff to retain the services of KHA to perform the design for the Operational Improvements on Parallel Arterials project, based on the information presented in this report. If approved by the City Council, KHA will be hired based on their work proposal and a PO for the total sum of \$184,520 consistent with Master Agreement No. 5315. City Attorney's staff has reviewed this matter and confirmed that this report with the consultant proposal attached and Council's approval authorizing staff to retain the services of KHA, as reflected in the minutes, should provide authorization for staff to engage the consultant firm.

Project design is expected to last approximately six months and should be completed in 2016. Project construction is expected to be completed in 2017. The project will not involve right-of-way acquisitions and should have no significant environmental impacts. Utility relocations are not anticipated. Traffic signal cabinets will be replaced with new state-of-the-art cabinets (of comparable shape and size) only at intersections where a new CCTV camera is installed. Advanced new modems will be installed inside the signal cabinets within the project area to enable fiber communications.

The proposed project will complement the recent upgrade of the City's central traffic management system to the state-of-the-art ATMS.now platform. This upgrade will serve to maximize the potentials of this project. The project is also consistent with the newly completed City of Concord Traffic Signal System Master Plan. The project has been closely coordinated with IT staff who will be intimately involved with project design.

If approved by the City Council, KHA will be hired to design this project and staff will request CCTA to appropriate \$184,520 to pay for the design. No CCTA Board review or approval is required to appropriate Regional Measure C/J funds once the funds have been programmed for the project.

Fiscal Impact

This project is funded through the CCTA Measure C I-680 program for the total amount of \$2,893,103. The need for any additional Local Measure J funds to supplement the core funding for the project will be reviewed in the coming months as additional information is obtained during project design. ***No General Funds will be used on this project.***

The project should not significantly increase annual costs to maintain the traffic signals in the project area. However, a replacement cost component should be identified for new CCTV cameras in the City's Operating Budget once the project is completed.

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Public Contact

Posting of the Council Agenda provides public notification.

Recommendation for Action

Staff recommends that the City Council review and approve the work proposal from Kimley-Horn and Associates and authorize staff to direct traffic consultant Kimley-Horn and Associates to proceed with design services for operational improvements on parallel arterials adjacent to Interstate 680 and State Route 242 in the City of Concord (Capital Improvement Program Project No. TIP-1612) (*no General Funds*).



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Deputy City Manager

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Attachment 1: Project area map
Attachment 2: KHA work proposal



November 6, 2015

Ray Kuzbari, P.E., P.T.O.E.
Transportation Manager
City of Concord
Community and Economic Development Department
1950 Parkside Drive, MS/01B
Concord, CA 94519

RE: Proposal for Engineering Services for the Design of Operational Improvements along Parallel Arterials

Dear Ray:

We are very pleased to submit our proposal to provide engineering services for the design of operational improvements along parallel arterials in the downtown area of Concord. The project area is surrounded by Concord Avenue to the north, Galindo Street to the east, Monument Boulevard to the south and I-680 to the west. The project will implement various operational improvements including, but not limited to, upgraded traffic signal equipment, a fiber optic interconnect system, and CCTV cameras at key intersections along the project arterials.

We have prepared our Scope of Services, Schedule, and Fee Estimate based on discussions with you, our understanding of the project and our experience with similar projects. For our Scope of Services, we have factored in using the information that we have gathered from our recent efforts with field investigations along the project arterials.

I thank you for the opportunity to provide these professional services. Please do not hesitate to contact me should there be any questions or concerns with any part of our proposal. I can be reached at (510) 350-0217 (office), (510) 393-6232 (cell) or kevin.aguigui@kimley-horn.com.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kevin Aguigui', with a stylized flourish.

Kevin Aguigui, P.E., E.E., CSEP
Project Manager

SCOPE OF SERVICES

Kimley-Horn will provide engineering services for the design of operational improvements along several key parallel arterials in the downtown area including Concord Avenue, Galindo Street, Willow Pass Road, Monument Boulevard, Clayton Road, Market Street, and Diamond Boulevard. The field data that has already been collected by Kimley-Horn will be used to determine the extent of new conduit and pull box infrastructure that is needed for a new fiber optic interconnect system. This information will be used initially for Task 2, Defining the Scope of the Improvements and the remaining design tasks (Tasks 4 through 7).

The project consists of the preparation of plans, specifications, and estimates (PS&E) for various traffic and ITS improvements along the arterial including, but not limited to, fiber optic interconnect, traffic signal equipment upgrades, and CCTV cameras.

The project area is surrounded by Concord Avenue to the north, Galindo Street to the east, Monument Boulevard to the south and I-680 to the west. Additionally, a fiber optic connection to the Corporation Yard is assumed that will provide the central system connection for the project arterials.

The project will implement various operational improvements including, but not limited to, upgraded traffic signal equipment, a fiber optic interconnect system, and CCTV cameras at key intersections along the project arterials.

TASK 1 – PROJECT ADMINISTRATION/MANAGEMENT

This task includes project management and coordination related tasks to include preparation of invoices, budget oversight, adherence to project scheduling, and general project coordination. As necessary, we will meet with the City to discuss project progress, project schedule and overall design coordination.

We will prepare and submit monthly status reports to the City. These reports will document expenditures and work completed within the last month and work projected for the next period.

Deliverables:

- Monthly Progress Reports
- Project Schedule (updated monthly)

TASK 2: DEFINE THE SCOPE OF THE IMPROVEMENTS

One of the first steps that we will focus on is to determine the extent of the improvements based on the available funding. Because there is the possibility that the cost of the desired operational improvements may exceed the current funding that is available, we will work with the City to identify and prioritize the types and limits of the improvements to fit within the available funding.

We will build upon our recent field work along the arterials to determine the extent of the improvements that are needed for the fiber optic interconnect as well as the other operational improvements and develop order of magnitude costs. Based on these costs we will develop alternatives for the project that will fit within the available funding with enough detail for the City to make decisions on the scope of the project. The outcome will be a set of recommendations for the operational improvements to be designed.

Deliverable:

- Technical Memorandum summarizing the Project Scope

TASK 3 – DATA COLLECTION AND FIELD REVIEW

We will coordinate with the City to collect existing available data for the design. A sample of the data that will be requested includes the following:

- Utility provider contacts
- Existing traffic signal as-builts
- Boilerplate specifications
- Sample technical specifications

In addition, we will formally request existing utility information from the utility companies. The utility information that is received by the utility companies will be shown on the project plans.

We will also conduct a field review of the project area to photograph and collect necessary information for the project design. This field review will supplement the field reviews that we have already conducted including collecting additional field information that was not collected prior. This includes information on existing traffic controllers and cabinets and conduits with interconnect cable and traffic signal wires.

Similar to our initial work, we will summarize the findings from the field work prior to moving forward to the detailed design tasks.

Deliverables:

- Utility request letters
- Field information data collection summary

TASK 4 - PREPARE 35% PLANS AND ESTIMATE

Based on the outcome and decisions made under Task 3, we will prepare 35% design plans and will update the order of magnitude estimates of probable cost prepared under Task 2. A large part of this task is developing the base plans for the arterials which includes existing infrastructure and utilities.

The 35% design plans will primarily consist of signal interconnect plans showing the proposed work to install the fiber optic communications system and any controller and cabinet modifications and ITS field devices (e.g., CCTV cameras). At this stage of the design, the plans will show the locations for any traffic signal cabinet and/or controller upgrades or replacements and the locations of ITS field equipment. Before we initiate this task, we will provide the City with an approximate number and type of plan sheets for the Concept Plans based on the preferred set of operational improvements.

The signal interconnect plans will be at a scale of 1"=40' or 1"=50'. Details, if required, will be incorporated into the later design stage and will be shown at an appropriate scale to show the information required.

We will develop revised preliminary estimates of probable construction cost for these improvements at this stage. The estimate will be a refinement of the estimate prepared under Task 2.

We will submit up to three (3) full sized hard copies, three (3) half sized copies, and a .pdf electronic copy of the 35% design plans to the City for distribution and review. The revised preliminary estimate will be submitted to the City in .pdf electronic format.

Deliverables:

- 35% Design Plans (hardcopy and electronic format)
- Revised Estimate of Probable Costs

TASK 5 - PREPARE 75% PS&E DOCUMENTS

Based on one set of non-conflicting comments received on the 35% plans and estimate, we will proceed with preparing the 75% plans, specifications, and estimates for the proposed improvements. Additional annotation and instructions will be added to the plans to provide more detail at this design stage. We will meet with the City when comments are received to discuss any significant items of concern and to further clarify those comments that need clarification.

We will prepare and submit a comment response matrix to be submitted with the 75% design submittal. The comment response matrix will include the original comments, our responses to the comments and the final resolution.

At this stage, we will prepare the technical specifications/special provisions for the project. We will use the City's Standard Specifications and prepare any special provisions that are necessary.

We will submit three (3) full sized hard copies, three (3) half sized copies, and a .pdf electronic copy of the 75% plans to the City for distribution and review. We will also submit up to three (3) copies of the technical specifications in hardcopy format and one (1) copy of in electronic Word format. The 75% estimate will be submitted to the City in .pdf electronic format.

Deliverables:

- 75% Design Plans (hardcopy and electronic format)
- 75% Technical Specifications/Special Provisions
- 75% Engineer's Estimate of Probable Construction Cost
- City redline comments (from 35% review)
- Comments Disposition Table

TASK 6 - PREPARE 95% PS&E DOCUMENTS

Based on one set of non-conflicting comments received on the 75% plans, technical specifications and engineer's estimate, we will proceed with preparing the 95% PS&E documents. We will meet with the City when comments are received to discuss any significant items of concern and to further clarify those comments that need clarification.

We will prepare and submit a comment response matrix to be submitted with the 95% design submittal. The comment response matrix will include the original comments, our responses to the comments and the final resolution.

We will submit up to three (3) full sized hard copies, three (3) half sized copies, and a .pdf electronic copy of the 95% plans to the City for distribution and review. We will submit up to three (3) copies of the technical specifications in hardcopy format and one (1) copy of in electronic Word format. The 95% estimate will be submitted to the City in .pdf electronic format.

Deliverables:

- 95% Design Plans (hardcopy and electronic format)
- 95% Technical Specifications/Special Provisions
- 95% Engineer's Estimate of Probable Construction Cost
- City redline comments (from 75% review)
- Comments Disposition Table

TASK 7 - PREPARE FINAL PS&E DOCUMENTS

Based on the 95% PS&E comments, we will advance the design documents to the Final level, i.e., "Bid Ready" documents. We will prepare and submit a comment response matrix (submitted with the final design submittal). The comment response matrix will include the original comments, our responses to the comments and the final resolution.

We envision the following submittals:

- Final signed and sealed Plans in 22" x 34" format on Mylar.
- Final signed and sealed Technical Specifications in electronic format.
- Final Estimate of Probable Construction Cost in electronic format.

At this stage we also envision that there may be some minor comments that may be required as the Bid Ready documents are finalized. We will work closely with the City to incorporate any comments at this stage to complete the final PS&E document set for project advertising.

The signed mylars will be scanned and an electronic copy submitted to the City along with electronic copies of both the signed and sealed Technical Specifications and Engineer's Estimate. We will submit the final CAD files to the City after the project has been advertised.

TASK 8: DESIGN SERVICES DURING CONSTRUCTION

Kimley-Horn will provide design support during the construction phase of this project on an as-needed basis. The services include attendance at the pre-bid and/or pre-construction meetings, reviewing submittals and shop drawings, as required in the project Special Provisions, attending

field meetings, responding to RFIs to provide clarification of plans and/or specifications, and conducting a field review to prepare a punch list upon substantial completion of the project.

If necessary, we will review up to two (2) Contract Change Orders (CCO) for design changes as part of this task. Kimley-Horn shall have no responsibility for any contractor's means, methods, techniques, equipment choice and usage, sequence, schedule, safety programs, or safety practices, nor shall Kimley-Horn have any authority or responsibility to stop or direct the work of any contractor.

A total of 40 hours have been included in the Scope of Services for this task. We will notify the City in advance should the services requested exceed the 40 hours allotted.

Deliverables:

- Pre-Bid and Pre-Construction meeting agenda and minutes
- Responses to RFIs
- Assistance with reviews and responses to contract change orders

TASK 9 – RECORD DRAWINGS

Following the completion of construction, we will prepare record drawings based on information furnished by the City and/or the contractor. These efforts include the preparation of record drawings for the new infrastructure, traffic signal equipment upgrades, and signal interconnect from the City's Public Works' Inspector and the Contractor's redlined plans for each plan sheet. We will submit signed and sealed record drawings in 22"x34" format on Mylar. The signed and sealed Record Drawings will be scanned and an electronic copy submitted to the City. We will also submit the final CAD files to the City.

Deliverables:

- Record Drawings (hardcopy and electronic format including CAD files)

SCHEDULE

We are prepared to begin work upon receipt of a Notice to Proceed (NTP) and we will endeavor to meet the City's scheduling needs. We understand that the goal is to commence with the project by the end of 2015 or early 2016. With this in mind, we have prepared a project schedule that lists the deliverables and milestones based on durations with respect to other milestones and deliverables. We will prepare a detailed project schedule once the project commences.

Task	Deliverable	Timeline
1	Project Administration/Management	On-going
2	Technical Memorandum on Project Scope	Four weeks after Notice to Proceed
3	Field Data Collection Summary Memo	Three weeks after Acceptance of Technical Memorandum on Project Scope
4	35% Design Plans and Estimate	Four weeks after Acceptance of Technical Memorandum on Project Scope
5	75% PS&E Documents	Four weeks after receipt of comments on the 35% Design
6	95% PS&E Documents	Three weeks after receipt of comments on the 75% PS&E Documents
7	Final PS&E Documents (Bid Ready)	Two weeks after receipt of comments on the 95% Design
8	Design Services During Construction	On-going
9	Record Drawings	Three weeks after receipt of redline markups from Contractor

FEE ESTIMATE

Our estimated fee to perform the services described above is \$184,520. This estimate includes all administrative time and direct expenses. The following table provides a summary breakdown of the fee including the fee per task, hours per task, staff categories and hourly rates (includes indirect expenses).

Task	Description	Staff Categories												Total Hours	Labor Cost	
		Principal-in-Charge	Project Manager	QA/QC	Sr. ITS Engineer IV	Sr. ITS Engineer II	Sr. ITS Engineer I	Sr. ITS Engineer	ITS Engineer IV	ITS Engineer III	ITS Engineer II	ITS Engineer	Analyst			Admin
1	Project Administration	2	40				8			16				16	82	\$15,970
2	Define Scope of Improvements	2	6				8	4	8	16			16	4	64	\$10,310
3	Data Collection and Field Review		4				4	4	16	24	16	8	16	4	96	\$14,320
4	35% Design		4	4	4		12	8	24	32	40	16	60	6	210	\$30,870
5	75% Design	1	6	4	10	10	16	20	24	44	60	32	38	4	269	\$41,915
6	95% Design	1	6	4	8	10	16	20	32	32	40	32	40	4	245	\$38,425
7	Final Design		6			8	8		16	8	32	8	8	4	98	\$15,400
8	Design Services During Construction		4				6		16	16				2	44	\$7,370
9	Record Drawings						8			8			32	4	52	\$6,940
Total Hours		6	76	12	22	28	86	56	136	196	188	96	210	48	1160	
Hourly Rate		\$265.00	\$250.00	\$250.00	\$225.00	\$210.00	\$190.00	\$185.00	\$165.00	\$150.00	\$140.00	\$130.00	\$120.00	\$95.00		
Subtotal Labor		\$1,590	\$19,000	\$3,000	\$4,950	\$5,880	\$16,340	\$10,360	\$22,440	\$29,400	\$26,320	\$12,480	\$25,200	\$4,560		\$181,520
Other Direct Costs																\$3,000
TOTAL FEE																\$184,520

JACK BODA, P.E
Principal-in-Charge

EDUCATION

- Bachelor of Science, Civil Engineering (Structural), California Polytechnic State University, San Luis Obispo
- Bachelor of Science, Transportation Engineering, California Polytechnic State University, San Luis Obispo

PROFESSIONAL REGISTRATIONS/CREDENTIALS

- Professional Engineer in California
- Seismic Advisory Board Member, Caltrans
- Seismic Advisory Board Member, California High Speed Rail

Jack has more than 36 years of experience in freeway, highway, and local streets and roads including Concept of Operations, System Planning/Integration and projects involving all phases of design including PSR, PR, PA&ED, and PS&E with Caltrans at the State, Regional and Local levels. Jack worked for 24 years at Caltrans serving the following roles; assistant to State Bridge Engineer, the State Capital Program manager overseeing the statewide delivery and project management program, the State Traffic Engineer managing the statewide safety and operations program, chief Deputy Director for San Francisco/Bay Area, the interim District director for San Diego, and the State Traffic Engineer. Jack was the Director for seven years at SANDAG (regional MPO/RTPA) where he managed a multibillion dollar engineering program that included the ITS and Tolling program and is currently working for Kimley-Horn as Principal in Charge overseeing multiple tolling and ITS projects throughout the State.

YEARS EXPERIENCE: 30+

REPRESENTATIVE PROJECTS:

- Mid-Coast LRT Corridor Project, San Diego, CA, US FTA-Segment Project Manager. In charge of the design of three viaduct segments totaling over four miles of structures
- I-15 Integrated Corridor Management (ICM) Project Stage III, San Diego County, CA, US DOT – Technical Advisor.
- I-80 Integrated Corridor Mobility (ICM) Project, Alameda/Contra Costa Counties, CA-Senior Advisor
- I-680 I-880 Express Lanes Backhaul System Design, MTC, Senior Advisor
- Regional Transportation System (TSM) Action Plan, concept of operations for MTC, Senior Advisor
- SFOBB Metering Lights Upgrade, BATA, Principal-in Charge
- Southern California Cordon Parking study
- I-5 /Genesee Avenue Interchange-PA&ED, PS&E, San Diego, CA Senior advisor
- I-15 Express Lane Project, San Diego, CA* – SANDAG Principal-in-Charge including HOT-lane DBOM tolling facility
- I-805 Express Lanes Preliminary Engineering and Environmental Document, San Diego, CA* – SANDAG Principal-in-Charge
- I-5 Express Lanes Preliminary Engineering and Environmental Document, San Diego, CA* – SANDAG Principal-in-Charge
- SR 94 Project Study Report for HOV/BRT lanes between I-805 and I-5, San Diego, CA* – SANDAG Principal-in-Charge
- SR-76 highway widening PSR, PR, PA&ED, PS&E* SANDAG Principal in Charge

KEVIN G. AGUIGUI, P.E., CSEP

Project Manager

EDUCATION

- Bachelor of Science, Civil Engineering, University of Hawaii at Manoa, 1988
- Certificate with Distinction, Telecommunications and Network Engineering, University of California at Berkeley, 1999
- Internetworking with TCP/IP and Internetworking Routers and Switches, Global Knowledge, 2001

PROFESSIONAL REGISTRATIONS/CREDENTIALS

- California No. 19880 (Electrical Engineering)
- California No. 48732 (Civil Engineering)
- California No. 1781 (Traffic Engineering)
- Certified Systems Engineering Professional (CSEP) No. 00156

YEARS EXPERIENCE: 20+

PROFESSIONAL EXPERIENCE

Kevin Aguigui is a Senior Transportation Systems and Electrical Engineer with extensive hands-on experience in Transportation Systems Planning, Design and Integration, and Electrical Systems Design. His main focus is in the areas of Intelligent Transportation Systems (ITS), Traffic Operations Analysis, Traffic Signal Timing, Transit Management Systems, Security and Surveillance Systems, Communications Networks, Traffic Engineering and Design, Adaptive Control Systems, Heavy and Light Rail Preemption Systems, Technology Evaluations and Bus Rapid Transit and Transit Signal Priority Systems. His wide range of skills focuses on the utilization of systems engineering for the planning, design, deployment and integration of advanced technologies and electrical systems for transportation management.

REPRESENTATIVE PROJECTS:

Fiber Optic Installation and Replacement Projects, Visalia, CA – Project Manager. Kimley-Horn prepared the PS&E documents for the installation of fiber optic infrastructure and communications systems along several different major corridors within the City of Visalia. The project involved fiber optic signal interconnect, new traffic controllers and cabinets, fiber connections into several City facilities including fire houses and City buildings, and coordination with the city IT Department on providing fiber optic infrastructure and connections for their use. The scope of project included the design of several fiber optic cables and routes within new and existing conduits, new fiber vaults, fiber optic splicings and terminations, traffic controller integration, communications systems configuration and integration, and traffic signal timing.

Regional Transportation System Enhancements, San Rafael, CA – Project Manager. Kimley-Horn prepared the environmental documents and the detailed PS&E documents for traffic and civil improvements in downtown area in preparation for the arrival of the SMART commuter rail system. Kimley-Horn coordinated with the City, Caltrans, SMART and the City's traffic signal system vendor, Econolite on the planning and design. The design included new fiber optic cables, conduit

(including five segments where conduit is strapped to existing bridge structures), traffic controllers and cabinets, curb ramps, changeable message signs, CCTV cameras and fiber to copper interconnect interfaces. The entire project encompasses fiber optic connections to 20 existing traffic signals and three new queue cutter signals, railroad preemption interfaces with SMART and approval of the proposed improvements by CPUC. Kimley-Horn obtained all approvals including a Caltrans encroachment permit along a state route (Hetherton Street). The project is currently under construction.

I-680 Express Lanes Fiber Optic Communications System Design, Bay Area Infrastructure Financing Authority – Project Manager. Kimley-Horn is serving as the Design Manager for the detailed design of the fiber optic backhaul and local communications system for the Express Lanes along the I-680 corridor. This fiber optic backhaul system consists of about 24 miles of fiber optic cable between the I-580/I-680 interchange and the Benicia Bridge Toll Plaza. The project includes coordinating with the civil and toll systems designs on I-680, incorporating the connections to BART and Caltrans District 4 Headquarters, and including the elements of Caltrans Traffic Operations System (TOS) to be part of the Backhaul connections. Kimley-Horn has been working closely with the Toll System Integrator (TSI) on the installation of the network elements that the TSI elements will utilize across the backhaul fiber optic network including On Site Field Installation Testing (OFIT) and Final System Acceptance Testing. The system design also included the Traffic Handling and Control Plans.

I-880 Express Lanes Backhaul Communications System Design, Bay Area Infrastructure Financing Authority - *Project Manager*. Kimley-Horn is serving as the Design Manager for the detailed design of the fiber optic backhaul and local communications system for the Express Lanes along the I-880 corridor. This fiber optic backhaul system consists of about 27 miles of fiber optic cable between Dixon Landing and just north of Hegenberger Road. The project includes coordinating with the civil and toll systems designs on I-880, incorporating the connections to BART and Caltrans District 4 Headquarters, and including the elements of Caltrans Traffic Operations System (TOS) to be part of the Backhaul connections. For the I-880 Backhaul, Kimley-Horn is leading the design and coordinating closely with Caltrans and the local agencies who are part of the Silicon Valley ITS Program to establish Backhaul connections with BART and the Express Lanes Host Sites.

Fiber Optic Design and Standards Development, Tracy, CA. Project Manager. Kimley-Horn prepared the detailed designs (PS&E) documents for the installation of a new fiber optic system in the City. This marked the City's first installation of fiber optics for their ITS network. The project consisted of interconnecting the City traffic signal signals along two arterial with the City's Traffic Control Center over an IP-based network. Additionally, a fiber optic connection was provided between City Hall and the City's Transit Station. The project involved routing of the fiber optic network into the Traffic Control Center as well as the installation of fiber optic cables into the Transit Station's telecommunications room. Kimley Horn conducted extensive field investigations of the existing conduit infrastructure and developed several routing options including penetration into the existing Transit Station. The project was completed in early 2014. Kimley-Horn also prepared the City's Fiber Optic Standards (Standard Plans and Specifications) which will be used to build out the overall fiber optic network city-wide.

Silicon Valley ITS Wide Area Network Re-Design, Installation and Integration, Santa Clara County, CA - Project Manager. Kimley-Horn prepared the planning, design and implementation documents for this regional ITS network in Silicon Valley. As part of the overall Silicon Valley ITS Program, the local cities and the County of Santa Clara are migrating the existing analog video

system to an all-digital system complete with a series of video management servers. The overall network is being re-commissioned to provide the transport of real-time video feeds to any and all stakeholders wishing to receive live video from other stakeholders. Kimley-Horn completed the systems engineering documents including the communications network and fiber optic re-design documents. The detailed network design also included fiber re-assignments of the SV-ITS fiber optic network and the procurement of new communications equipment including network switches/routers and firewalls. Kimley-Horn performed the network configuration and system integration testing and assisted the agencies in the installation and testing of all the networking equipment. The system includes seven local agency systems and will integrate with each of the local agency system's enterprise network as necessary for the exchange of real-time video.

ITS and Fiber Optic Network Designs, Santa Clara, CA – Project Manager. Kimley-Horn prepared the PS&E documents for the installation of fiber optic infrastructure and communications systems along several different major corridors within the City of Santa Clara as part of several different ITS project implementations. Each of these ITS projects has involved traffic signal interconnect, implementation of the City's fiber optic design and installation standards, new traffic controllers and cabinets, and coordination with Silicon Valley Power (SVP) IT staff on use of their fiber for last mile connections, as well as the Silicon Valley ITS Program (SV-ITS) for use of their fiber network connections. The scope of these ITS projects included the design, installation and testing of the City's standard 288-strand fiber optic cables, fiber vaults, fiber optic splicings and terminations, traffic controller integration, communications systems configuration and integration, and traffic signal timing. The ITS projects have included corridors along Homestead Road, Kiely Road, Benton Road, El Camino Real, Scott Boulevard, De La Cruz Boulevard and Lafayette Street. The project was completed on-time and on-budget.

Paramount Boulevard Fiber-Optic Communication System, Downey, CA — QA/QC. This project involves the extension of an existing communication system which will interconnect the traffic signals along Paramount Boulevard in Downey including all other field devices to be installed along this corridor. The existing communications system consists of a fiber-optic network of communication hubs and signalized intersections all communicating using IP over Ethernet. This solution made the City of Downey the first city in Southern California to deploy a fully operational Ethernet communications system. The communications network essentially consists of a ring topology of field hubs and the TMC, and star topology of signalized intersections. Services include the installation of fiber and video detection on Paramount Boulevard from Telegraph Road to Gardendale Street. The project length is approximately five miles and includes 18 signalized intersections.

Fresno Area Express (FAX), Blackstone/Ventura-Kings Canyon BRT Project, Fresno, CA — Lead Traffic, ITS and Systems Engineer. Kimley-Horn prepared the detailed designs (PS&E documents) for this 14 mile BRT route along Blackstone Avenue, Ventura Avenue and Kings Canyon Road in the City of Fresno. The BRT corridor includes over 70 traffic signals with 8 Caltrans locations, transit signal priority and 51 BRT stations. Kimley-Horn prepared all of the detailed design plans including the fiber optic interconnect for traffic signals and the fiber optic communications to every station platform. The fiber optic communications system included separate fiber cable designations between FAX and the City Public Works Department. Kimley-Horn prepared all of the detailed designs for the traffic elements at the traffic signals and the civil, systems and electrical components on the BRT Stations.