

Folsom City Council Staff Report

MEETING DATE:	8/23/2022
AGENDA SECTION:	Consent Calendar
SUBJECT:	Resolution No. 10904 – A Resolution Authorizing the City Manager to Execute a Design and Consulting Services Contract with Kimley Horn and Associates, Inc. for the Intelligent Transportation Systems (ITS) Master Plan Implementation Project, Federal Project No. 5288(052)
FROM:	Public Works Department

RECOMMENDATION / CITY COUNCIL ACTION

The Public Works Department recommends that the City Council pass and adopt Resolution No. 10904 – A Resolution Authorizing the City Manager to Execute a Design and Consulting Services Contract with Kimley Horn and Associates, Inc. for the Intelligent Transportation Systems (ITS) Master Plan Implementation Project, Federal Project No. 5288(052).

BACKGROUND / ISSUE

The City of Folsom’s Intelligent Transportation System (ITS) Master Plan was originally developed in 2004 to address traffic concerns related to the closing of Folsom Dam Road. The 2004 plan provided ITS deployment recommendations for a traffic management system focusing on Folsom Boulevard, Riley Street, and Folsom Auburn Road. Though the City did not completely execute the entire Plan as originally envisioned, the City has implemented many key ITS components since the Plan was developed including connecting many of the City’s traffic signals using fiber optics, and traffic signal controller upgrades. In 2014, an update to the original plan was developed to clearly define the focus and direction for the ITS program moving forward. The continued maturity of the City’s ITS program and ongoing evolution of technology requires the City to develop and deploy ITS elements that enhance the longevity and sustainability of the system. During this timeframe the City continued to invest in its Intelligent Transportation System, first by upgrading to a video traffic signal detection system on East Bidwell Street from US50 to Oak Avenue Parkway to capture High-Resolution traffic data that allows for software algorithms to use cloud-based data to recommend

optimized signal timing, and later by installing backbone fiber optic communications along Empire Ranch Road and Broadstone Parkway as part of the 2019 traffic signal installation project, and creation of the Traffic Operations Center at City Hall.

In 2019, the Sacramento Area Council of Governments (SACOG) partnered with the City of Folsom and seven other agencies to develop the Smart Region Sacramento: ITS Architecture and Future Technology Project (referred to as Smart Region Sacramento). This project updated the City's 2014 ITS Master Plan, and on a separate and related path, created a regional Concept of Operations to document the parameters in which the future regional system will be functional, define stakeholder roles and responsibilities, and outline data usage expectations. The Smart Region Sacramento Plan has six key objectives that emerged as the most critical through the process. These six key objectives are 1) Accommodate different communities throughout the region (Urban, Suburban, Rural, Underserved), 2) Adapt the Region to New Technology, 3) Achieve Consistency and Reliability for all Modes, 4) Increase Safety, 5) Improve Traveler Information Dissemination, 6) Improve Disaster Preparedness. A portion of this project will explore data sharing opportunities to pursue these regional objectives.

On December 8, 2020, City Council adopted Resolution No. 10571 - A Resolution Authorizing Staff to Submit Grant Applications to the Sacramento Area Council of Governments for the 2020-21 Funding Round. One of the projects submitted and selected to receive funding was the Intelligent Transportation Systems (ITS) Master Plan Implementation Project.

Staff publicly advertised a Request for Proposals to provide Professional Engineering Services on May 24, 2022, and received one proposal on June 20, 2022. The sole proposal was received from Kimley-Horn and Associates, Inc. (Kimley Horn) in the amount of \$878,311.87. Kimley Horn developed the City of Folsom 2004 ITS Master Plan, 2014 ITS Master Plan, 2019 ITS Master Plan, and the SACOG Smart Region Sacramento Plan. Staff recognizes that the work required to complete this project is of a specialized nature and did not expect a large number of proposals. Public Works has worked with Kimley Horn and their listed sub consultants before and is confident in their abilities to perform the scope of the work. Pursuant to Caltrans regulations, a Public Interest Finding (PIF), the required document when there is a sole proposal, has already been approved by the District Local Assistance Engineer.

The scope of the Design and Consulting Services Contract with Kimley-Horn will consist of identifying locations for installation of closed-circuit televisions (CCTVs) to monitor traffic flow, upgrading and installation of fiber optic and communication equipment to fill gaps and expand capabilities of the traffic management center, installation of changeable message boards (CMB) to broadcast messages to motoring public, expansion of signal performance measures (SPM) software to proactively adjust signal timing and identify maintenance issues, assessment of transit signal priority to minimize impacts of the Sacramento Regional Transit Gold Line preemption on signal performance, implementation of a cloud based emergency vehicles preemption throughout the City to route emergency vehicles safely through congested corridors and improve response times, and the development of a traveler information website dashboard.

POLICY / RULE

Section 2.36.080 of the Folsom Municipal Code states, in part, that contracts for supplies, equipment, services, and construction with an estimated value of \$66,141 or greater shall be awarded by the City Council.

ANALYSIS

As previously mentioned in this report, only one proposal was received (Kimley Horn). City Staff is very comfortable recommending Kimley Horn for the award of this contract based on their submitted proposal for this project and their prior experience with the City of Folsom producing high quality and cost-effective ITS projects.

FINANCIAL IMPACT

The City was awarded federal funds in the amount of \$4,985,434 for this project. The City's match requirement for the project is 12.8% or \$639,434. The design portion of this project was initially allocated up to \$800,000, however the final design contract with Kimley Horn would be authorized for a not to exceed amount of \$878,311.87, a difference of \$78,311.87. The additional \$78,311.87 will be appropriated from the construction phase of the project. Staff is requesting an appropriation in the amount of \$878,311.87 from the Transportation Improvement Fund (Fund 446) for this project, of which 100% or \$878,311.87 will be reimbursed to that fund through Caltrans invoicing.

ENVIRONMENTAL REVIEW

The scope of Kimley Horn's professional services includes providing environmental evaluations and a technical memorandum that will be submitted to Caltrans for approval of the project as it pertains to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

ATTACHMENTS

1. Resolution No. 10904 – A Resolution Authorizing the City Manager to Execute a Design and Consulting Services Contract with Kimley Horn and Associates, Inc. for the Intelligent Transportation Systems (ITS) Master Plan Implementation Project, Federal Project No. 5288(052)
2. Project Area and Proposed Signal ITS Improvements
3. Scope and Fee

Submitted,

Mark Rackovan, PUBLIC WORKS DIRECTOR

Attachment 1

RESOLUTION NO. 10904

A RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE A DESIGN AND CONSULTING SERVICES CONTRACT WITH KIMLEY HORN AND ASSOCIATES, INC. FOR THE INTELLIGENT TRANSPORTATION SYSTEMS (ITS) MASTER PLAN IMPLEMENTATION PROJECT, FEDERAL PROJECT NO. 5288(052)

WHEREAS, on December 8, 2020 the City Council adopted Resolution No. 10571, which authorized the Public Works Department to apply for grant funds from the Sacramento Area Council of Governments; and

WHEREAS, one of the grants that was applied for and successfully awarded to the City was the Intelligent Transportation Systems (ITS) Master Plan Implementation Project; and,

WHEREAS, the amount of funds granted to the project was \$4,985,434; and,

WHEREAS, an amount of \$800,000 of the awarded funds has been allocated for design; and,

WHEREAS, a Request for Proposal to provide Professional Engineering Services was publicly advertised on May 24, 2022 and on June 20, 2022 a single proposal was received from Kimley-Horn and Associates, Inc. in the amount of \$878,311.87; and

WHEREAS, there is a difference of \$78,311.87 between the initial design funding amount and the requested funding amount that will be covered by utilizing a portion of the construction funds; and

WHEREAS, there is sufficient funding available for the design and consulting services contract in the Transportation Improvement Fund (Fund 446); and

WHEREAS, the cost related to the design and consulting services contract will be 100% reimbursable through Caltrans invoicing and reimbursements received will be applied to the Transportation Improvement Fund (Fund 446); and

WHEREAS, the agreement will be in a form acceptable to the City Attorney:

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Folsom authorizes the City Manager to Execute a Design and Consulting Services Contract with Kimley Horn and Associates, Inc. for the Intelligent Transportation Systems (ITS) Master Plan Implementation Project, Federal Project No. 5288(052).

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Finance Director is authorized to appropriate \$878,312 in the Transportation Improvement Fund (Fund 446) to be reimbursed from grant revenue.

PASSED AND ADOPTED this 23rd day of August 2022, by the following roll-call vote:

AYES: Councilmember(s):
NOES: Councilmember(s):
ABSENT: Councilmember(s):
ABSTAIN: Councilmember(s):

Kerri M. Howell, MAYOR

ATTEST:

Christa Freemantle, CITY CLERK

Attachment 2

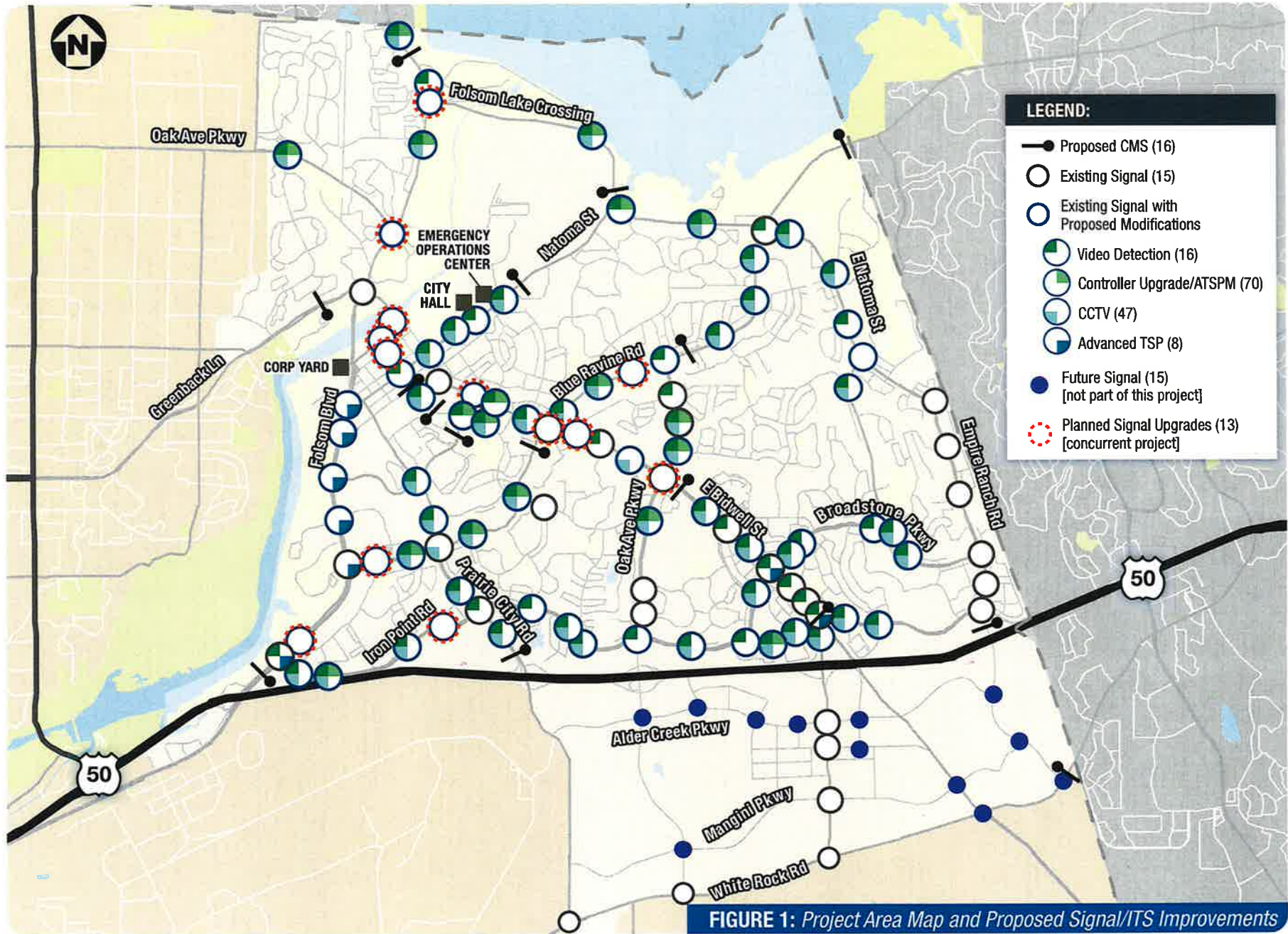


FIGURE 1: Project Area Map and Proposed Signal/ITS Improvements

Attachment 3

Exhibit A
Folsom ITS Master Plan Implementation
Scope of Services

Task 1: Project Management and Administration

Task 1.1 Project Management

This task includes general project administration, including management of project staff, quality control, and project accounting.

Kimley-Horn will submit monthly invoices with associated project status reports for the effort completed each month. Project reports will include status updates on completed and ongoing project tasks, deliverables completed, upcoming milestones, and potential constraints and risks to project progress.

Task 1.2 Kick-off and Project Coordination Meetings

Kimley-Horn will initiate this project with a Project Kick-Off Meeting. This meeting will discuss the overall project schedule and constraints, review Scope of Services elements, identify project coordination, discuss quality control, and review administrative and invoicing procedures.

During the course of the project, we will conduct monthly project coordination meetings, or meetings at the City's desired frequency, with the City Project Manager to review project schedule, budget, progress status, and risks to the project. We will prepare and distribute materials and notes for each meeting.

Kimley-Horn will prepare a project schedule identifying key milestones, deliverables, and critical path tasks for the project. We will update the schedule throughout the project and have it available during meetings, or as requested.

Task 1 Deliverables:

- Meeting Notes, Agendas, and Meeting Materials
- Project Schedule (with updates)
- Monthly Invoices with Project Status Reports (assumed 16 months)

Task 2: Project Approval and Environmental Documentation

The following environmental scope of work has been developed based on the following key assumptions:

- Supporting technical documents will be developed pursuant to both NEPA and CEQA guidelines as administered by the Caltrans and FHWA.
- One project design alternative is assessed through environmental review

Kimley-Horn will initiate this effort as part of the kick-off meeting/discussion (Task 1) to define the parameters of the analysis, scheduling and understanding of the project. To acquire relevant environmental data and background information, we will coordinate with appropriate City departments, use previous studies for the area and other available files, and rely on existing exhibits, maps and reference documents. Environmental issues that may require further detailed study or that may delay or affect the viability of the project will be documented.

Task 2.1 - Preliminary Environmental Study (PES) Form and Area of Potential Effects (APE) Map
Environmental issues that may require further detailed study will be documented in the PES for the City/Caltrans concurrence prior to the initiation of the technical study work program. Kimley-Horn will draft a PES Form for the City review. As part of this task, we will draft the Area of Potential Effects (APE) map for both Archaeology and Historic Architecture. After City review, we will revise the PES Form and APE map and they will be submitted to Caltrans for review and approval from Caltrans Professionally Qualified Staff (PQS) approval. The APE map will provide the cultural resources boundaries for the Caltrans PQS-prepared Screened Undertaking, as discussed in Task 2.2, below.

Kimley-Horn will attend one site visit with Caltrans and the City to review the area and take comments on the PES Form and APE map. Kimley-Horn anticipates one round of additional review to produce a Caltrans approved PES form, which will inform the scope of work for the required CEQA and NEPA compliance documentation.

Task 2.2 Technical Work Study Program

As discussed above, Kimley-Horn proposes to prepare technical studies in conformance with NEPA, pertinent FHWA regulations, Caltrans' Standard Environmental Reference (SER), and the CEQA.

Under CEQA and NEPA, it is anticipated that the Project would allow for environmental clearance to be a Categorical Exemption/Categorical Exclusion, respectively. Should Caltrans require additional analysis on the affected resource categories below, Kimley-Horn can provide this analysis under a separate scope of work and fee. It is anticipated that the resources below can be addressed within the context of the Categorical Exemption/Categorical Exclusion for construction purposes and would not require a technical study. Based upon our recent projects within Caltrans District 3, a review of the project as presented in the RFP, and 2021 Caltrans-approved PES Form to include the information required in the 2021 updated instructions manual, Kimley-Horn anticipates that the following technical resources would be addressed by Caltrans staff or within the context of the resulting environmental document. Caltrans will make the final determination regarding the number of required technical studies during the review of the PES form. Required technical studies not included in this scope of work may be accommodated under an amended scope of services.

- Air quality can be addressed within the context of the Categorical Exemption/Categorical Exclusion for construction purposes and would not require a technical study. In addition, the project is exempt from air quality conformity based on 40 CFR 93.126, Table 2, which lists Bicycle and Pedestrian Facilities Projects and Pavement Resurfacing and/or Rehabilitation Projects, as exempt from the requirement that a conformity determination be made
- Noise can be addressed within the context of the Categorical Exemption/Categorical Exclusion for construction purposes and would not require a technical study
- For Cultural Resources, based on the nature of the project, Kimley-Horn anticipates a Screened Undertaking, which would be prepared by Caltrans PQS
- Biological resources can be addressed within the context of the Categorical Exemption/Categorical Exclusion for construction purposes and would not require a technical study

Based on a review of the GeoTracker database website there are no existing hazardous sites in the surrounding area. As such this scope of work assumes hazardous materials can be addressed in the PES form through database searches of the project area on GeoTracker.

Task 2.3 CEQA and NEPA Compliance

CEQA Compliance

Kimley-Horn will prepare a Notice of Exemption (NOE) form and memo for improvements proposed at all project locations within the project area. The City will be the lead agency for the NOE and Caltrans is a responsible agency. The form and memo will be provided to the City for review. This scope includes one round of revisions on the NOE form and memo. Kimley-Horn will coordinate with the City to file the NOE with State Clearinghouse.

NEPA Compliance

This scope of work assumes Caltrans will prepare a NEPA Categorical Exclusion, and any supporting technical memorandum in support the NEPA document, pursuant to Section 23 USC 326, 23 CFR 771 activity (c)(8). Should Caltrans identify the need to prepare the more time-consuming Environmental Assessment, a separate scope and fee will be provided to the City.

Task 2.4 Environmental Meetings and Coordination

Kimley-Horn will provide project management oversight of team's activity and coordinate with the City throughout the project's duration. The project management and task leads will supervise, coordinate, and monitor the planning and design of the Project for conformance with standards and policies established between the City and Kimley-Horn team at the beginning of the project.

We will attend a kick-off meeting and one (1) additional review meeting with City staff. The goal of the kick-off meeting is to finalize the project schedule and establish a plan for a successful project. No public meeting or hearings are included in this scope.

Task 2.5 Environmental Preliminary Site Investigation (PSI)

Kimley-Horn will conduct a PSI for the Project area to evaluate soil for potential impacts in areas proposed for soil disturbance during construction activities. The PSI will be performed in accordance with the American Society for Testing and Materials (ASTM) International Standard E1903-11, Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, and the Caltrans Standard Environmental Reference (SER) Environmental Handbook (EH) Volume 1, Chapter 10, "Guidelines for Hazardous Materials, Hazardous Waste, and Contamination."

Sampling and Analysis Plan/Health and Safety Plan

Kimley-Horn will prepare a Sampling and Analysis Plan (SAP) and a Health and Safety Plan (HASP) for the proposed field work activities. Sample locations will be marked in white paint, and Underground Service Alert (USA) North 811 will be notified a minimum of 72 hours prior to the start of field sampling. Kimley-Horn will obtain applicable permits, rights-of-entry, or drilling permits, as needed, and subcontract a licensed drilling company to perform the field work. Kimley-Horn will obtain a utility location service to clear the boring locations at the intersections as a precaution to avoid subsurface lines. Kimley-Horn will provide oversight during drilling and sampling activities, and samples will be submitted to a state-certified laboratory, following the chain-of-custody protocol, and analyzed for specific constituents of concern (COC) based on historical use and adjoining property use.

Although leaded fuel has been prohibited in California since the 1980s, aerially deposited lead (ADL) from vehicle emissions may still be present in surface and near-surface soils in unpaved areas along California highways and roadways. Because lead is ubiquitous in the environment, sampling and analysis of soil are performed during Project development to determine if lead concentrations are at levels that

require special management and/or disposal. Shallow soil samples will be collected from exposed soil areas within 50 feet of the roadway and analyzed for lead and pH; concentrations of lead are then compared to regulatory levels (80 milligrams per kilogram) to evaluate soil re-use/disposal.

Field Work

Based on our team's understanding, project improvements will involve minimal soil disturbance. We estimate up to 16 borings proposed for the Project (one (1) boring per CMS location). The borings will be sampled using a Direct Push Technology (DPT) rig to take continuous core soil samples at specific locations. DPT uses a hydraulically operated percussion hammer along with vehicle weight to advance the sampling barrel with an acetate liner used to contain the soil sample. The acetate liner will be cut into specific intervals, 0-1 feet, 1-2 feet, and 2-3 feet below ground surface (bgs), capped at each end with a Teflon sheet and plastic lid, labeled, and placed into an ice chest with ice. Samples will be logged on the chain-of-custody which will be given to the laboratory upon delivery of the soil samples for analyses. The borings will be backfilled with grout and capped with native soil.

The soil samples will be analyzed for lead and pH using EPA 6020 and EPA 9045, respectively, following Caltrans protocol. Additional COCs will be analyzed on composite samples at selected borings based on RECs identified in the Initial Site Assessment (ISA). Other COCs in the Project area include polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAH), metals, volatile organic compounds (VOC), pesticides (historical agriculture), Total Petroleum Hydrocarbons (TPH) as gasoline, diesel, and motor oil, and used oil (motor, hydraulic, and lubricating).

PSI Report

Kimley-Horn will prepare a PSI Report and incorporate the sampling and analytical testing conducted at the Project area. The report will include a discussion of sample collection and testing methods and certifications of the individuals performing the work. Additionally, the report will identify (if present) regulated and/or hazardous materials, and evaluate soil disposal/ reuse and worker safety measures. Kimley-Horn will incorporate the comments received from the Project Team on the draft report and incorporate into the draft-final report for review by the City. Comments from the City will be incorporated into the final report for Caltrans review. The report will comply with California Environmental Quality Act/National Environmental Policy Act requirements.

Task 2 Deliverables:

- One (1) Draft PDF copy of the PES and APE for City/Caltrans review
- One (1) Final PDF copy of the PES and APE for City/Caltrans review and approval
- One (1) PDF copy of the Draft CE for Caltrans review and approval
- One (1) PDF copy of the Draft NOE for City review and approval
- One (1) Draft PDF copy of the Draft PSI Report for City/Caltrans review
- One (1) Draft PDF copy of the Final PSI Report for City/Caltrans review

Task 3: Preliminary Engineering

This task encompasses background information gathering to create a foundation for design elements and plan sheet development.

Task 3.1 – Data Collection and Field Assessment

Kimley-Horn will obtain readily available background project information to initially summarize the overall project elements. This effort will include the following materials from the City:

- Existing as-builts of City facilities (traffic signals, signal interconnect/communications network, TOC)
- Planned/ongoing communications infrastructure improvements, including private utilities
- Utility information of City-owned facilities
- Right-of-way maps
- Utility contact list (phone number, email, and address, as available)

Kimley-Horn will conduct a field review to confirm data collected from existing plans and documentation, and to identify additional unusual or special conditions that may affect the project design. Furthermore, our field investigations team will conduct field review for potential fiber cable pathways, and identify and map the communications conduits and pull boxes to be utilized along the corridors.

Our field investigations will consist of the following activities:

- Review existing as-builts and other background information provided by the City
- Identification of existing traffic signal controllers and cabinets
- Identification of the existing pull box and conduit sizes and an assessment of the condition of the existing conduits and sweeps. The conduit's condition shall include conduit material, whether the conduit is intact, dirty, debris-filled, and the entry length of the conduit into the pull boxes (this will affect the pulling of fiber into the existing pull box).
- Determination of, to the extent possible, the percent fill of the existing conduits, and determination of the maximum capacity based on applicable standards (e.g., Caltrans or NEC).
- Review existing traffic signal infrastructure, including existing conduits, wires/cables and sizes, as well as the viability of using the existing conduit based on our comprehensive approach detailed above. For each pull box, we will assess the conduit entrance conditions including the position and entry distance of each conduit that may be used for the fiber optic installation.
- A photo log of traffic signal cabinets, signal poles, pull boxes, and other relevant field information will be prepared as part of this task.

Task 3.2 – Basis of Design Memorandum

Kimley-Horn will prepare a Basis of Design memorandum that briefly summarizes the complete project elements to be designed for this project, and how the project elements will be delivered. Project improvements to be considered include:

- Traffic signal communications upgrades
- Cabinet upgrades
- Traffic Signal controller upgrades
- CCTV Cameras
- Video Detection Systems
- Arterial Changeable Message Signs (CMS)
- Emergency Vehicle Preemption (EVP) upgrades

This document will also include a planning-level estimate of construction cost to validate and align with available construction funding. This memorandum will provide a baseline for design effort in Task 5.

Task 3.3 – Utility Coordination

Kimley-Horn will provide utility coordination in accordance with City and Caltrans requirements. This task includes communicating the City's project to the utility owners and working with them to verify potential conflicts.

We will develop a utility company matrix and prepare Utility "A" Letters on City letterhead for City review and approval to be sent out to utilities known to operate in the vicinity of the project. This package will include an exhibit ("A" Plan) of the project area and existing utilities based on available data and field surveys of visible utilities. This letter is to request record information and to put the utility owners on notice that the City is intending to construct a project that may affect their facilities. We will continue to coordinate with utility agencies through final design.

Kimley-Horn will prepare utility base mapping in AutoCAD based on as-built information, field measurements, mapping provided by the utility companies, and positive location from potholing.

At 50% design, Kimley-Horn will prepare utility conflict maps ("B" Plans) and "B" Letters on City letterhead for City review and approval to be sent out to utilities in the vicinity of the project. This serves as request to relocate if it is needed. Two copies of the conflict mapping will be sent to the utility company showing the individual company's facilities and the anticipated utility conflicts. Regardless of potential conflict or not, the utility company is requested to respond within 30 days of receipt of the letter and to initiate relocation design in the event this is needed. If relocation is needed, the utility company will be requested to provide copies of relocation plans to alleviate the conflicts and a cost estimate of the relocation. Kimley-Horn will coordinate the relocation of company facilities to new alignments that avoid the proposed improvements and that are acceptable to the utility company and the City.

Kimley-Horn will work with the City to finalize all utility agreements and certifications to satisfy federal funding requirements. This task includes reviewing relocation agreements for proper charges and fees and negotiating as necessary to ensure correct advances, refunds and reimbursements. Final utility agreements will be included in the Right of Way Certification package as included in the deliverables of Task 6 in this Scope of Work.

When the relocation plans are received, Kimley-Horn will check the utility company relocation design against the latest project plans for conflicts. We will then send a copy of the Final Plans ("C" Plans) along with a Notice to Owner (Caltrans Exhibit 14-D in the LAPM as included in the deliverables of Task 6) directing each facility to initiate relocation construction.

Task 3.4 – Potholing

The Kimley-Horn team will perform potholing in the field to confirm location and depth of utilities in immediate vicinity of proposed CMS improvements. This Scope of Services includes up to 16 potholes at proposed CMS locations. Results of the potholing will be used to determine whether any changes to proposed improvements and other design elements will need to be made and reflected in the construction documents.

Our team will pull an encroachment permit, prepare and submit traffic control plans according to CA MUTCD, latest edition, for the City's review and approval prior to commencement of work.

Task 3.5 – Base Mapping

Kimley-Horn will create a base map of the project corridors using high-resolution, orthogonally rectified aerials retrieved from Nearmap PhotoMaps™ as the design background. Base maps will be created in AutoCAD Civil 3D. By utilizing high-resolution, orthogonally rectified aerials, it will enable a seamless integration of survey data acquired during later tasks of this project. The base mapping will be reviewed and supplemented based on field observations. We will establish approximate alignments for existing curb and sidewalk at project intersections in AutoCAD utilizing the aerial imagery.

Task 3 Deliverables:

- Map of the preliminary findings
- Photo Log
- Basis of Design Memorandum
- Utility Coordination "A", "B", and "C" Letters
- Digital copies of utility as-built plans obtained from utility providers
- Utility Base Mapping (AutoCAD)

Task 4 – Changeable Message Sign (CMS) Evaluation and Design

Task 4.1 – CMS Assessment

This task will consist of conducting research on the types and sizes of different CMSs that are suitable for the proposed application (i.e., arterial-based installations). This includes:

- Conduct research on CMS types and technologies (e.g., full-matrix, resolution, message display capabilities) to identify the optimal display sizing based on the City's desired
- Conduct a field review of the proposed locations per the ITS Master Plan (16 locations) to evaluate potential CMS locations based on existing pole locations, clear sight distance, potential electrical service points and routing of new conductors to the electrical service points and communications connections.
- Identify pole aesthetics, including color, visual characteristics, and CMS pole geometry.

It is assumed that existing electrical service points will be used for the new CMSs and that no new electrical service will be required. New service applications and PG&E coordination are not included in this scope of work.

Task 4.2 – CMS Structural Design

Once the preferred CMS locations, pole geometry, aesthetics, and weights have been identified, we will prepare structural calculations to determine the maximum diameter of the supporting pole, and the design diameter and depth of the shaft foundation. The maximum diameter of the pole and foundation design will be in accordance with the AASHTO LRFD LTS (1st Edition). The foundations will be designed based on the following assumed geotechnical parameters for both Cohesive and Cohesionless soils listed below. It is assumed that Construction Contractor will perform soil testing during construction. If Contractor determines that soil conditions do not meet these geotechnical design parameters, Kimley-Horn will review and provide revised foundation design as part of Design Services During Construction (Task 8).

Allowable Bearing pressure = 1500 psf

Cohesive Soil

- Shear Strength, $C=1500$ PSF

Cohesionless Soil

- Soil Unit Weight, $g = 120$ pcf
- Soil Friction Angle, $\phi = 30$ degrees

Final design of the overhead CMS steel posts, and connection of the CMS display to the steel posts will be the responsibility of the contractor or steel post fabricator that is working for the City of Folsom.

Kimley-Horn will prepare and submit the draft design documents to the City for review. The design plans will provide details on the CMS installations at each site including:

- CMS types and sizes
- CMS locations
- Electrical rounding and connections
- Communications routing and connections
- Maximum pole diameter
- Foundation diameter and depth (Based on assumed geotechnical values)

Upon receipt of the comments from the City, Kimley-Horn will meet to discuss them if necessary. Based on City comments and subsequent discussions with the City, Kimley-Horn will prepare the final design documents.

The final design plans will be incorporated into the overall plan set and signed and sealed by a State of California registered civil engineer.

Task 4 Deliverables:

- Draft and Final Design Plans in PDF format
- Structural Calculations Technical Memorandum in PDF format

Task 5: Plans, Specifications, and Estimate

Task 5.1 – 50% Design Plans and Estimate

Kimley-Horn will prepare 50% plans and estimate of probable construction costs for the design of traffic signal modifications (including controller and cabinet replacements/upgrades), fiber optic communications, changeable message signs (CMS), closed circuit television (CCTV) cameras, video detection, emergency vehicle preemption (EVP), and traffic control devices relevant to the design plans will be layered to reflect “existing”, “to be removed/modified”, and “proposed” conditions. We will prepare the 50% plan set based on decisions made during the preliminary engineering task.

The plans will be prepared in AutoCAD 2020 and will adhere to the applicable City design standards and specifications. We will utilize the City standard plan sheet borders with title block and general construction notes and CAD standards that will be provided by the City.

Based on these assumptions, we anticipate the plan set will consist of the following sheets:

Title Sheet	1
General Plan/Notes	2
Layout Sheet/Key Map	5
Communications Design Plans	40
CMS Design Plans	5
Traffic Signal Modification Plans	79
Traffic Signal Details	4
Communications Block Diagrams	4
Fiber Optic Splice Diagrams	10
Total Sheets	150

Task 5.2 – 90% Plans, Specifications, and Estimate (PS&E)

Prior to beginning the development of the 90% PS&E documents, Kimley-Horn will participate in a design review meeting with the City to discuss review comments on the 50% submittal. After review of one set of consolidated comments from the City, Kimley-Horn will prepare 90% Plans, Specifications, and Estimate (PS&E) for the proposed improvements. A comment resolution matrix will be prepared which will summarize the comments received on the 50% plans and estimate documents with resolutions identified for each comment. This matrix will be submitted with the 90% submittal. Specifications will include limited parameters pertaining to unique design features and will be based on standard special provisions provided by the City of Folsom.

Task 5.3 – Final Plans, Specifications, and Estimate (PS&E)

Prior to beginning the development of the Final PS&E documents, Kimley-Horn will participate in a design review meeting with the City to discuss review comments on the 90% submittal. Based on the review comments on 90% PS&E, the PS&E documents will be advanced to the final design level. A comment resolution matrix will be prepared which will summarize the comments received on the 90% PS&E documents with resolutions identified for each comment. This matrix will be submitted with the Final submittal.

The final plans will be stamped and signed by the professional engineer (licensed in California with current registration) in responsible charge. The Final PS&E will be submitted to the City for use in advertising and constructing the improvements.

Task 5 Deliverables:

- 50% Plans (PDF)
- 50% Design Opinion of Probable Construction Cost (Excel and PDF)
- 90% PS&E (PDF)
- Final PS&E (PDF)
- Final Bid-Ready PS&E

Task 6: Local Assistance Procedures Manual (LAPM) Support

The Kimley-Horn team will assist the City with LAPM submittals including Request for Authorization (RFA) packages, Utility Certification, Right of Way Certification, PS&E Certification, Cost-Effectiveness/Public Interest Finding (PIF) and other local assistance compliance tasks as they arise. It is anticipated that the City will need assistance with completing forms (Exhibits) in LAPM Chapters 3, 6, 7,

12, 13, 14, and 15. This task will also include coordination with Caltrans pertaining to the determination of appropriate Federally Participating Cost eligible work items.

Task 6 Deliverables:

- RFA Packages
- Utility and Right of Way Certifications
- PS&E Certification
- Cost-Effectiveness/Public Interest Finding

Task 7: Bidding and Award Support Assistance

Kimley-Horn will provide support to the City during the bid and award phase. This will include participation at the pre-bid meeting and site walk-through (if required) to review project details and expectations with potential bidders. We will assist the City in preparing a response to pre-bid questions and a bid addendum to resolve outstanding issues.

Kimley-Horn will review responsive bids against the Engineer's Estimate and provide input to the pricing. If the lowest bid exceeds the project budget, we will provide input on phasing or staging of project elements that should still result in a complete project.

Task 7 Deliverables:

- Attend Pre-bid Meeting and Site Walk-through
- Prepare Response to Bidder Questions
- Prepare Bid Addendum (one anticipated), if required
- Bid Evaluation Support

Task 8: Design Services During Construction

Kimley-Horn will provide design support to the City during construction. Design support will include attendance at pre-construction meeting, review submittals and shop drawings, maintain records of proprietary products procured for PIF determination, review and prepare response to contractor requests for information (RFI), prepare Construction Change Orders (CCO), and field support to discuss contractor questions or field conditions. Field support will also include input to contractor system integration and testing of field equipment. We will maintain a log of RFIs, approvals, and CCOs during the project and have available upon request.

As construction nears completion, Kimley-Horn will participate in a final walk-through of the project to provide input on the inspector's punch list of remaining work. After construction is complete, Kimley-Horn will prepare as-built drawings based on contractor-provided plan sheet redlines. As-built drawings will be prepared in AutoCAD. As requested by the City, and as budget permits, we will provide project close-out support to prepare required documentation to complete the project.

Task 8 Deliverables:

- Attend Pre-Construction Meeting
- Prepare Responses to RFIs
- Maintain Log of RFIs
- Prepare Construction Change Orders (budget for up to 3)
- Prepare As-built Drawings

Task 9: Emergency Vehicle Priority (EVP) and Transit Signal Priority (TSP) Assessment

Kimley-Horn will perform a qualitative evaluation of advanced EVP and TSP solutions and develop recommendations which considers existing infrastructure, compatibility, scalability, system functional requirements, stakeholder input, O&M and deployment costs. We understand that the City is currently evaluating a pilot cloud-based EVP solution which is anticipated to sunset in early 2023. Kimley-Horn will support the City with its evaluation of this current cloud-based EVP product in addition to other advanced EVP solutions. Recommendations on system selection will be documented in a draft technical memorandum to be submitted to the City. Based on City comments and subsequent discussions with the City staff and regional stakeholder group, Kimley-Horn will prepare the final technical memorandum.

Additionally, Kimley-Horn will review existing traffic signal operations and light rail preemption along the Folsom Boulevard corridor between Natoma Street and Iron Point Road (7 signals). We will review the existing traffic signal logic operation (i.e. detection, rail preemption, blank-out sign, overlaps) and propose recommended operational enhancements to improve traffic flow and safety. These operational enhancements may include modifications to load switch assignments, signal phasing during rail preemption, and logic operation. We will provide marked up signal timing sheets documenting recommended modifications.

This task includes up to fifteen (15) hours of field support for implementation of signal timing modifications.

Task 9 Deliverable:

- EVP and Advanced TSP Assessment Memorandum
- Timing Sheet markups

Task 10: Development of Travel Information Website Dashboard

To effectively provide real-time traveler information and other information on the City's transportation network, Kimley-Horn will support the City with development of a website dashboard. This dashboard will allow residents and general public to view traveler information including traffic conditions, speeds, CMS messages, and still images from closed circuit television (CCTV) cameras at signalized intersections throughout the City, and parking occupancy data at key locations around the City. The information shall be provided on both a system-wide and a critical arterial basis.

A browser-based dashboard shall be created and published for the City. Kimley-Horn will conduct prototype reviews with project stakeholders and create a design document reflecting the decisions made during these reviews, the proposed website architecture, and site maintenance routines. This dashboard will be public facing and deployed on City hardware.

After deployment of the dashboard, Kimley-Horn will provide 3 years of maintenance and support for the system.

Task 10 Assumptions:

- All necessary software licenses, which will be determined during task kickoff, will be supplied by the City
- A web hosting environment will be supplied by the City with VPN access for Kimley-Horn staff
- All device feeds, including but not limited to CMS and CCTV (from Genetec video management software), will be furnished by the City in a format that is digestible by a web browser
- CCTV feeds will be limited to still images

Task 10 Deliverables:

- One task kickoff meeting
- Two prototype review meetings
- One publicly facing dashboard deployed on City servers
- One training session
- Design document detailing site components, implementation, and maintenance
- 3 years of website maintenance and support

Task 11: Network Assessment

Kimley-Horn will support the City with performing a network assessment which includes an analysis of the City's current and future bandwidth with the installation of new field devices and communications (fiber) upgrades. We will perform a network data discovery which includes coordination with City IT to obtain the following information:

- Existing bandwidth and utilization
- Specifications for field devices (CCTV cameras, traffic signal controllers, video detection, TSP)
- Bandwidth consumption for field devices
- Network architecture to understand protocols utilized and flow of network traffic

This task includes up to four (4) design/discovery meetings (assumed to be virtual) with City IT staff.

Kimley-Horn will prepare and submit a technical memorandum presenting the results of the network assessment and include network design recommendations and upgrades.

Task 12: Adaptive Signal Evaluation and Procurement Support

If requested by the City as an additional service (for additional fee), Kimley-Horn will analyze presently functioning adaptive traffic control system software packages, compare their functions and features, make determinations of which systems would be most desirable for the City of Folsom based on the system performance expectations, and make a recommendation for the preferred system software. Once this preferred system is determined, we will assess the required changes to the system including field equipment to accommodate the adaptive system and estimate costs. We believe that this will be an iterative process given that the cost of the changes may exceed the available budget. Should this be the case, we will identify any concessions or trade-offs that can be made and still produce an effective

adaptive system. For example, to meet a system's ideal requirements, new system and intersection detection may be necessary. However, existing detection (i.e. loops) may be used, but this may result in lesser accuracy for determining vehicle queue lengths or even travel times. We will identify these trade-offs and quantify the extent of their implications on the system's operations.

Upon completion of this task, we envision that a preferred adaptive system will be selected for the corridor. Once that decision has been made, we will prepare an Evaluation Summary Report detailing the evaluation process and the results of the selection.

Kimley-Horn will participate in vendor bid review and attend vendor interviews. This will be a non-voting support role to provide technical support to City staff. This will involve review of qualifications, schedule, functional requirement compliance, interview demonstrations, and prior performance. We will provide City staff with written observations that the City may consider in selecting the vendor.

City of Folsom
ITS Master Plan Implementation
Fee Proposal

Revised 8/11/2022

		Kimley-Horn and Associates, Inc.								Total Hours	Total Cost	
		Sr. Professional III	Sr. Professional II	Sr. Professional I	Professional II	Professional I	Analyst II	Analyst I	Sr. Project Support			Project Support
194.54%	Overhead%											
194.38%	Overhead% w/o FCCM											
10%	Fee%											
Name	Category/Title	Direct Rate	Direct Rate	Direct Rate	Direct Rate	Direct Rate	Direct Rate	Direct Rate	Direct Rate	Direct Rate		
Billing Rate												
	Task 1 Project Management and Administration	10	48	34	0	0	0	0	16	10	118	\$ 32,888.95
	1.1 Project Management		24	10					16	10	60	\$ 14,418.84
	1.2 Kick-off and Project Coordination Meetings	4	12	12							28	\$ 8,843.69
	1.3 Regional Stakeholder Meetings (6)	6	12	12							30	\$ 9,626.42
	Task 2 Project Approval and Environmental Documentation	0	6	44	0	100	10	0	10	0	170	\$ 38,302.95
	2.1 Preliminary Environmental Study (PES) and APE Map		2	8		40					50	\$ 11,163.31
	2.2 Technical Work Study Program		2	8		20					30	\$ 7,030.65
	2.3 CEQA and NEPA Compliance		2	10		24			10		46	\$ 10,095.09
	2.4 Environmental Meetings and Coordination			16		16					32	\$ 7,799.32
	2.5 Preliminary Site Investigation (PSI)			2			10				12	\$ 2,214.58
	Task 3 Preliminary Engineering	0	12	56	22	48	138	250	0	0	526	\$ 90,078.65
	3.1 Data Collection and Field Assessment		8	24		20	80	100			232	\$ 39,709.21
	3.2 Basis of Design Memorandum		4	18	10	18	20	20			90	\$ 18,346.23
	3.3 Utility Coordination			6	12	10	18	40			86	\$ 14,763.81
	3.4 Potholing			8				10			18	\$ 3,547.36
	3.5 Base Mapping						20	80			100	\$ 13,712.04
	Task 4 Changeable Message Sign (CMS) Evaluation and Design	0	16	0	0	74	10	0	0	0	100	\$ 22,154.91
	4.1 Changeable Message Sign (CMS) Evaluation and Design		6			34					40	\$ 8,979.70
	4.2 CMS Structural Design		10			40	10				60	\$ 13,175.21
	Task 5 Plans, Specifications, and Estimate	24	24	110	130	150	520	660	0	0	1618	\$ 281,602.07
	5.1 50% Design Plans and Estimate	10	10	30	30	30	180	240			530	\$ 89,851.09
	5.2 90% Plans, Specifications, and Estimate (PS&E)	8	8	50	60	80	240	300			746	\$ 129,172.75
	5.3 Final Plans, Specifications, and Estimate (PS&E)	6	6	30	40	40	100	120			342	\$ 62,578.23
	Task 6 Local Assistance Procedures Manual (LAPM) Support	0	4	10	0	0	10	0	0	0	24	\$ 5,763.96
	6.1 Local Assistance Procedures Manual (LAPM) Support		4	10			10				24	\$ 5,763.96
	Task 7 Bidding and Award Support Assistance	2	10	40	4	6	30	20	0	0	112	\$ 25,017.52
	7.1 Bidding and Award Support Assistance	2	10	40	4	6	30	20			112	\$ 25,017.52
	Task 8 Design Services during Construction	2	20	50	20	15	40	0	0	0	147	\$ 35,772.68
	8.1 Design Services during Construction	2	20	50	20	15	40				147	\$ 35,772.68
	Task 9 Transit Signal Priority (TSP) and Emergency Vehicle Priority (EVP) Assessment	0	8	16	0	40	0	8	0	0	72	\$ 16,404.69
	9.1 Transit Signal Priority (TSP) and Emergency Vehicle Priority (EVP) Assessment		8	16		40		8			72	\$ 16,404.69
	Task 10 Development of Real-Time Travel Information Website Dashboard	0	5	44	87	395	415	0	0	0	946	\$ 184,749.33
	10.1 Prototypes, Design Documentation, and User Meetings		5	5	10	40	20				80	\$ 16,965.59
	10.2 Website Development - Phase 1			2	5	30	40				77	\$ 14,553.29
	10.3 Device Sourcing & Implementation - Agency IT Coordination			5	10	90	90				195	\$ 37,239.33
	10.4 CCTV Feed Integration			5	15	60	60				140	\$ 27,262.42
	10.5 DMS Feed Integration				5	30	30				65	\$ 12,338.70
	10.6 Parking Occupancy Data			2	5	30	40				77	\$ 14,553.29
	10.7 3-yr Maintenance & Support			15	15	30	90				150	\$ 28,830.48
	10.8 Testing					30	15				45	\$ 8,678.40
	10.9 Edge Service Install			5	15	40	20				80	\$ 16,518.02
	10.10 Cloud Deployment (on City cloud)				2	10	10				22	\$ 4,191.63
	10.11 Training			5	5	5					15	\$ 3,618.19
	Task 11 Network Assessment	0	0	0	80	10	0	0	0	0	90	\$ 20,960.73
	11.1 Network Assessment Support				80	10					90	\$ 20,960.73
	TOTAL HOURS	38	153	404	343	838	1173	938	26	10	3923	
	Subtotal Labor:	\$ 14,871.89	\$ 49,831.35	\$ 113,452.95	\$ 81,009.73	\$ 173,158.60	\$ 193,889.36	\$ 122,012.38	\$ 4,358.28	\$ 1,111.89		\$ 753,696.43
	Other Direct Costs											\$ 124,615.45
	Labor Escalation											\$ 11,305.45
	Mileage											\$ 600.00
	CS3 Engineering, Inc.											\$ 40,000.00
	BESS Testlab, Inc.											\$ 32,710.00
	Terracon (PSI)											\$ 40,000.00
	TOTAL COST:											\$ 878,311.87