

MEETING DATE: 05/21/07

AGENDA ITEM: Authorization to Enter into a Professional Services Agreement with Iteris, Inc. for the Configuration and Project Management Services for the Acquisition of a Traffic Control System as part of the Fox Hills Traffic Signal Synchronization Project P-852

ATTACHMENTS

		<u>Pages</u>
1	Excerpts of Iteris RFP	1-21
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Proposal to Provide:

Configuration / Project Management Services for The Fox Hills Traffic Signal Synchronization Project - Acquisition of Traffic Control System

RFP No. P-852

Submitted by:

ITERIS[®]

April 19, 2007

P07-0022

I. Project Understanding & Scope of Work

PROJECT UNDERSTANDING & SCOPE OF WORK

Iteris has a firm understanding of the project needs and are experts in the field of traffic engineering, signal operations and Intelligent Transportation Systems (ITS) to support all aspects of this project. Our breadth of knowledge will result in the completion of a successful project, within the designed project schedule, and within budget. The following subsections detail our understanding of the project to procure a new commercial-off-the-shelf (COTS) traffic control system.

Project Understanding

The City of Culver City is pursuing the selection and implementation of a new traffic signal control system that will provide the ability to manage the City's approximately 100 signalized intersections and ITS field elements (e.g. CCTV cameras). Currently, the City's system is a combination of Multisonics 820 controllers and 170 controllers operating with BI Tran 172.3 firmware designed specifically to operate with LADOT's traffic control system. The City is in the process of upgrading the Multisonics 820 controllers to 170 controllers. As part of this project, the City plans to upgrade the controller firmware at all locations and select a centralized traffic control system that will support the new controller hardware and firmware. This new COTS traffic control system is expected to be fully developed and operational, requiring minimal (if any) modifications to be tailored for this project.

Through our review of the RFP, understanding of traffic control systems, and discussions with City staff, the goals of this project can be described as follows:

- Utilize as much of the existing infrastructure (i.e. 170 controllers and communications) as possible.
- The new system will have the capability to monitor and operate up to 256 signalized intersections.
- The new system will have the capability of assigning priority to transit vehicles while keeping signal timings optimized to the extent possible.
- The new system will have the capability of pre-emption for emergency vehicles so that optimal signal coordination is automatically recovered.
- Provide multi-jurisdictional coordination with other agency's signals and systems (e.g., LADOT traffic signals, etc.).
- Inclusion of other ITS elements such as video surveillance systems.
- Capable of data exchange via Los Angeles County's Information Exchange Network (IEN).

To effectively conduct this project, it will take a focused approach with dedicated staff that not only understand the principles of ITS and traffic signal systems, but also can design, construct and integrate its many components. The benefits of the proposed traffic control system do not stop at the City boundaries; instead, when it is designed, constructed, and integrated correctly, it provides added benefit throughout the region. The Iteris Team understands these benefits, and is the team who will provide the highest quality services.

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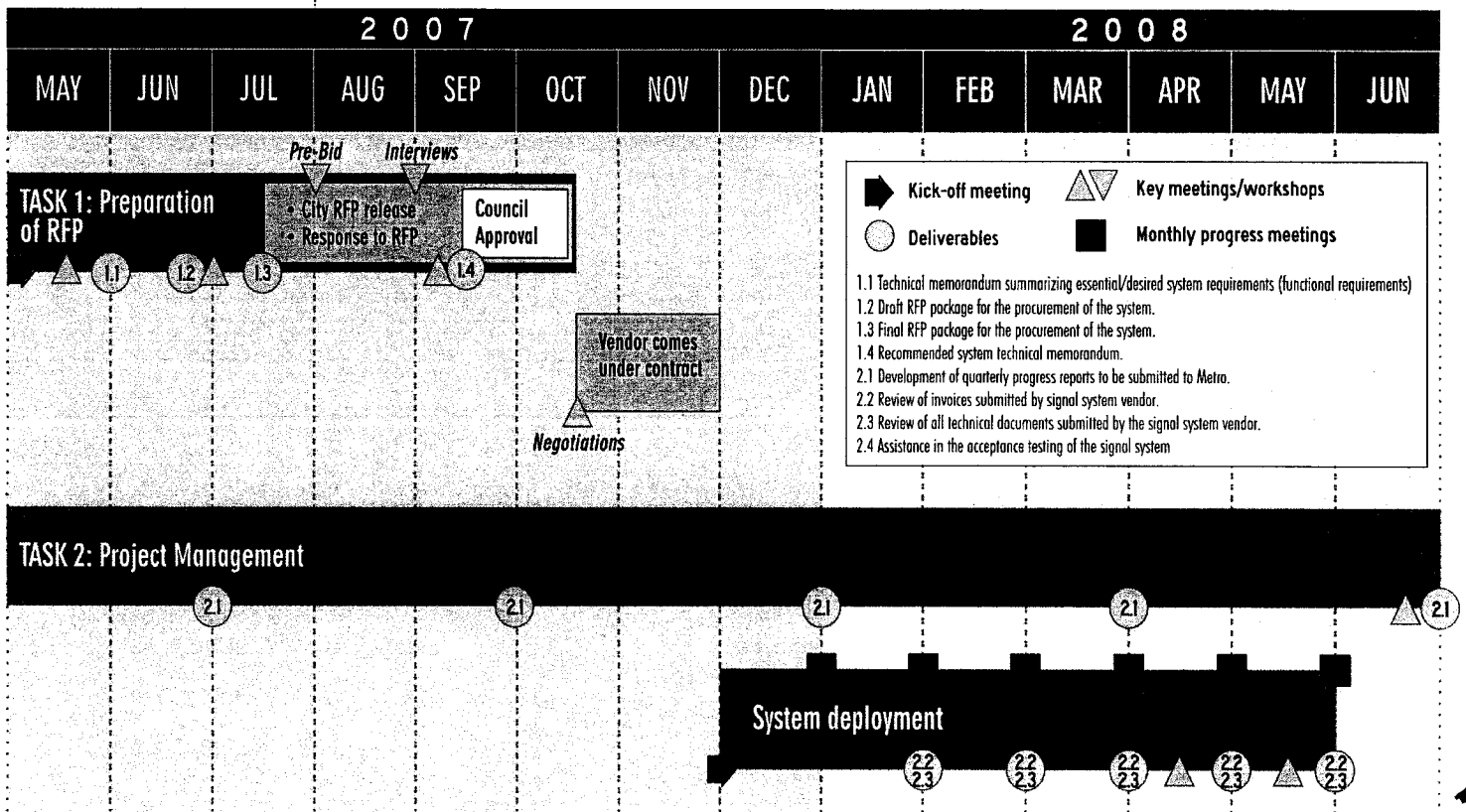
Project Approach

The Iteris Team has developed an approach based on the project understanding and issues described above. This approach is described in detail below and divided into the following major tasks:

- Task 1.0: Preparation of a RFP
- Task 2.0: System Deployment Project Management

These tasks meet the minimum requirements of the major categories of work listed in the RFP. Iteris is confident that the project timelines suggested by City staff will be met. Based on our understanding of the project and the scope of services, the proposed project schedule is illustrated in **Figure 1** below. Please note that we have inserted time for agency review of deliverables as well as time associated with council approval and vendor negotiations. We believe that there is a potential to shorten the RFP development cycle by an additional 2 weeks. However, we want to make sure that agency staff receives the most up-to-date information on available systems and functionality. In addition, there should also be some discussion on matching systems with firmware and how this would physically take place within the controllers. This would be discussed within Deliverables 1.1 and 1.2.

Figure 1 - Proposed Project Schedule

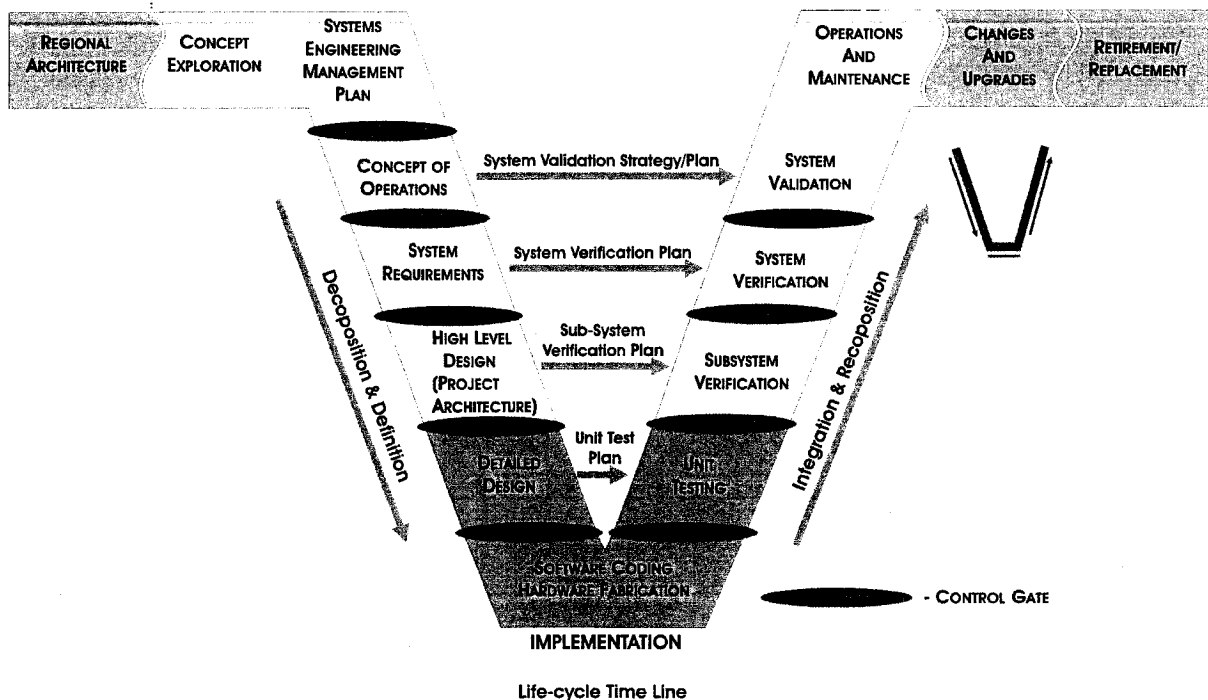


I. Project Understanding & Scope of Work

Task 1.0 - Preparation of a RFP

Objectives: To evaluate and recommend a centralized traffic control system based on the needs of the City of Culver City following FHWA's Systems Engineering guidelines.

A traffic control system should take into account the specific needs of the agency that will operate and maintain the system. The new traffic control system selected and deployed for the City of Culver City will be cognizant of the specific goals and objectives highlighted in the RFP and listed above. In addition to these goals and objectives, the system that is selected and deployed should be one that will provide a reliable and cost-effective system that will not only manage the existing signals, but also be able to support the expansion the traffic signal system and the inclusion of ITS field elements (i.e. CCTV cameras). With a firm understanding of the needs that the City of Culver City would like the new traffic control system to achieve, Iteris can assist the City in developing an RFP that will address the goals and objectives of this project. The RFP will be developed through a series of steps designed to follow the FHWA's Systems Engineering process.



The systems engineering process plays an important role in each and every project undertaken by Iteris. In addition, Iteris is an ISO 9001 certified firm, which has many similar properties to the systems engineering process. Quality management is engrained within our overall business philosophy.

The most significant objective of the systems engineering process is to ensure that the resulting system meets the technical performance requirements of the ITS central system and field elements throughout the project lifecycle. To meet

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this objective, the systems engineering process is utilized to minimize changes to the detailed design once it has been completed. This goal is accomplished by ensuring that all relevant concerns have been included in the overall design process at the right time.

The central traffic control systems engineering process is multidisciplinary in nature and includes requirements and interface management, configuration control, design validation, integration and testing (including product verification) and also provides data for task tracking. This process will allow the Iteris Team to confirm that the system selected meets the requirements for the project and provides traceability throughout the project timeline.

The Iteris Team has identified the following sub-tasks for the development of the RFP and the evaluation and selection of a COTS traffic control system for the City.

Sub-Task 1.1 Development/Identification of System Requirements & Functionalities

As part of this sub-task, Iteris will identify and develop a list of essential and/or desirable requirements and functionalities that City staff would prefer in the new traffic control system. These requirements and functionalities will be determined through discussions, workshops, and meetings with City staff. These requirements and functionalities will not only include special features the system should have to operate the signals, but also the user interface components that allow a user to efficiently use the system. We will be bringing our experience on similar projects (i.e. City of Sacramento, Sacramento County DOT, City of Elk Grove, City of Inglewood, City of Santa Rosa, etc) to assist the City of Culver City with this important task. A copy of the requirements and RFP package Iteris developed for the City of Santa Rosa in September 2006 is included in **Appendix B** of this proposal.

In the context of following the systems engineering process, Iteris' approach is to identify ITS deployment stakeholders, determine their needs, and follow a logical process in defining a system architecture and functional design that can be reviewed and verified to meet stakeholder needs. The key concept in this approach is to identify system requirements, track the requirements to ensure they link to the stakeholder needs, and then verify that the requirements have been satisfied by the installed system.

Most recently, Iteris developed system and functional requirements for the selection of a traffic control system and/or been involved in the deployment of a traffic control system for the cities of Corona, Mission Viejo, Westminster, Newport Beach, Sacramento, Santa Rosa, Elk Grove, Inglewood, and Las Vegas.

Sub-Task 1.2 Available Traffic Control System Evaluations

The City of Culver City's traffic signal system will be comprised of the traffic control software system and new traffic controller firmware. The traffic control software

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system for the City will provide centralized monitoring, management, and control of the traffic signal controllers at signalized intersections supported by the City's communication interconnect. The traffic signal controllers will then obtain the appropriate commands from the central software and operate the signalized intersection within the new controller firmware. The purpose of this sub-task is to identify a reliable and cost effective traffic control system and compatible controller firmware that best meets the City's needs for managing the City's signalized network and ITS field elements.

As part of similar projects where Iteris has assisted in the evaluation and selection of traffic control systems, numerous traffic control systems have been previously identified. The candidate systems are as follows:

- McCain (BI Tran Systems)QuicNet/4
- Siemens ITSI2
- Siemens ITSACTRA / tactics (a.k.a. ACTRA 4.0)
- Siemens ITSMarc NX
- Econoliteicons
- EconoliteARIES
- Econolite.....Pyramids
- TransCore.....TransSuite
- Naztec.....StreetWise ATMS.now
- Kimley-Horn.....KITS
- PB Farradyne.....MIST version 4
- LADOT.....ATCS

Each of the above vendors also develops controller specific firmware/software. For example, Siemens ITS also develops NextPhase, SEPAC, and EPAC - each compatible with different types of controllers. The centralized systems are not all compatible with some of the other vendors' controller firmware/software.

Iteris will thoroughly research the available systems and compatible firmware/software.

Iteris will develop a comprehensive list of each system and available functionalities including types of controllers and controller firmware each system can communicate with, communication requirements, system detection requirements, etc. Comparisons between the various systems will be made based on costs, functionality, detection needs, ability to integrate with other systems, City's future and existing infrastructure/systems, and other potential ITS capabilities. The systems will be characterized and described by their various algorithms (i.e. transit signal priority),

Iteris staff are involved in the day-to-day operation of traffic signals for many of our clients. This includes trouble shooting hardware and developing and implementing new timing plans. As such, we have worked with all of the various traffic control systems, controllers, and controller firmware/software and are familiar with each of their intricacies from a user's perspective.

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detection requirements, and communication requirements. **Appendix C** provides a comparison of some of the traffic control systems that Iteris completed in June 2006 for the Freeway and Arterial System of Transportation (FAST) of Southern Nevada (Las Vegas area).

The City also plans to change out the existing Bi-Trans 172.3 firmware within the existing controllers. There are two methods to accomplish this task – either through City forces or have it part of the vendor RFP. It is recommended that it be included as part of the RFP so that the burden of complete operations is on the vendor. To accomplish this, the RFP should contain a detailed inventory that includes location, controller type (including detailed model type), firmware, prom chips, etc. This will allow the vendors to more precisely make their recommendations for controller change-outs, firmware upgrades, etc. that correspond directly to the overall cost.

With the requirements and functionalities and potential vendors identified, Iteris will then develop the RFP to be distributed to potential vendors. The requirements identified will be divided into specific categories and the vendors will be asked to state whether each requirement is either a) included within their system, b) under development, or c) to be developed as part of this project. This will allow the city to further understand which system includes specific requirements within their base system. It will also provide insight into potential cost drivers within each vendors response and the associated cost estimate.

Iteris will be responsible for development of the technical elements of the RFP. This will include development of the following sections:

- Project introduction
- Proposal requirements
- Functional requirements
- Interview requirements (as required)

City staff will be responsible for creation of the “boiler-plate” elements of the traffic control system RFP including specific city requirements, insurance requirements, etc. If desired, the City can transmit these elements to Iteris, and we will place them into the RFP package.

The RFP package will first be prepared in draft form for review by city staff. Iteris will include comments within the final version of the RFP and it will be presented to city staff for approval for release. Upon development of this RFP, Iteris will assist in ensuring all vendors receive the RFP and will provide assistance in responding to RFI/questions.

Sub-Task 1.3 Traffic Control System Selection

It is envisioned that Iteris will serve as a non-voting member of the selection panel for the City of Culver City. In this role, Iteris will review all proposals submitted and assist in selecting the top proposal(s). If the City elects to conduct oral interviews of the top ranked vendors, Iteris will also provide assistance during this process to

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assist the City in selecting the system which best fulfills the requirements identified in sub-task 1.1 and is the best value to the City.

From our past experience, the review of vendor proposals is generally based on the following criteria:

1. Qualifications:
 - Successful deployment of the proposed off-the-shelf traffic control system in similar conditions for other agencies.
 - Experience of key personnel completing projects of similar scope.
 - Feedback received from client contacts (references)
2. Overview of Proposed Traffic Control System Conceptual Operation: This includes the capabilities of the proposed off-the-shelf traffic control system and its ability to meet the requirements identified in the functional requirements document.
3. Resources and Capabilities: The vendor's resources, including number and description of personnel and their capability to provide technical support in a timely fashion during the implementation and warranty phases of the project.
4. Project Understanding and Approach: This category will be evaluated by review of technical submittals, description of project approach, and proposed project schedule.
5. Price proposal: Overall project costs to perform the work described in the contract documents.

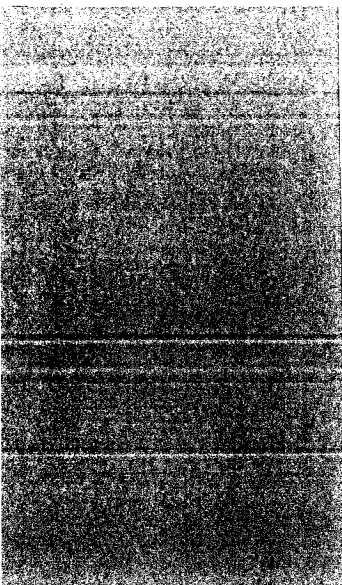
Vendor proposals will be reviewed with similar criteria developed specifically for the City of Culver City. A scoring matrix will be prepared by Iteris (once the elements are agreed upon with city staff) so that each member of the review panel will utilize the same form.

At the conclusion of the RFP and interview (if required) process, Iteris will prepare a technical memorandum that provides a synopsis of the selection process and the results as directed by the selection panel.

DELIVERABLES:

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|---------|---|
| Del 1.0 | <i>Meeting notes, following meetings with City staff at key times. At a minimum, the meetings would include the following: (1) workshop to identify system/functional requirements, (2) review of the draft RFP, (3) pre-bid conference for the selection of a vendor, and (4) oral interview of potential vendors.</i> |
| Del 1.1 | <i>Technical memorandum summarizing essential/envisioned system requirements (functional requirements)</i> |

I. Project Understanding & Scope of Work

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- Del 1.2 *Draft RFP package for the procurement of the system. Package to include functional requirements and corresponding check list, detailed scope of work, and selection criteria.*
 - Del 1.3 *Final RFP package for the procurement of the system.*
 - Del 1.4 *Recommended system technical memorandum.*

Task 2.0 - Project Management

Objectives: Assist City in its oversight of Contractor's deployment of the traffic control system, and prepare/conduct acceptance tests to verify its proper, intended operation

Upon completion of the system selection and contract signing between the City and vendor, the project will immediately move into a procurement and deployment phase. Iteris will support the City's efforts in this phase with task work as defined in the following sections.

Sub-Task 2.1 Procurement and Construction Assistance

Following award of bid, Iteris will provide assistance as requested through interpretation of bid document language, expanded explanation of feature requirements, and related issues. Iteris will provide documentation of any procurement and construction assistance in the form of meeting notes, addenda, recommendation memos, and/or e-mail messages. All related documents will be consolidated into a deliverable at the end of this subtask to provide a record of this subtask's work. Iteris recently completed similar work activities for the Cities of Sacramento, Corona, and Inglewood.

There are a couple of items that the City should be fully aware of that could have ramifications on the installation time period. First, the City has taken the initiative to test their existing communications system to ensure its integrity between signalized intersections. While it is important to test the individual links, it is also important to test the integrity from the head-end location (where the traffic control system central servers will be located). If some of the communication channels are not complete to the traffic control system, this will cause a delay during implementation as the vendor will need to identify the gaps.

Secondly, as mentioned earlier the need to upgrade and/or replace controllers and firmware could have an impact to the overall project schedule. If controller change-outs are required beyond those already in process (i.e., 820A replacements) this could add to the overall project timeline. However if only firmware upgrades/replacement are envisioned to be part of the vendor RFP they traditionally can do about 8 locations per day. This could be done simultaneously with some of the early tasks of system implementation.

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Sub-Task 2.2 Acceptance Testing

When the traffic control system deployment is nearing completion, Iteris will commence a process to verify that the system is complete, that each element of the vendor's product is performing as required in the contract, and that that all of the approved functionalities identified in the RFP are performing as specified by the vendor. The testing will evaluate each functional and detailed specification criteria in the RFP, including multiple conditions or states where defined. Initial development of the Acceptance Test Plan (ATP) will be a requirement of the vendor; the task should be included in the contract agreement work scope. Iteris will review the ATP and determine whether it meets the needs to fully test the traffic control system. If refinement and/or improvement of the ATP is required, Iteris will work with the vendor on revising the ATP to an acceptable form.

For the City of Mission Viejo, Iteris staff conducted the acceptance testing of their new i2 traffic control system with a combination of M50 and 2070 controllers and NextPhase controller software. The new centralized system presides over the City's older VMS system and provides supervision of not only new but also older Multisonics 820A controllers.

Iteris will oversee the acceptance testing, following completion of the final ATP and system deployment, with assistance of the vendor as needed. When a component or feature of the deployed traffic control system fails to perform according to the specifications as illustrated by a "did not pass" designation, the vendor will be notified of the issue and asked to correct the deficiency for a re-test of the feature/component. Should the Contractor be unable or unwilling to make modifications or corrections to the ATCS for the identified issue, Iteris will document the component failure, and the process to correct it (or attempt to correct it). All facets of the Acceptance Testing Procedures will be documented in a final test report for the City. A recommendation for the City's responses to any testing issues will be prepared by Iteris.

DELIVERABLES:

- | | |
|---------|---|
| Del 2.0 | Meeting notes, following meetings with City staff and/or selected signal system vendor on an as-needed basis. |
| Del 2.1 | Development of quarterly progress reports to be submitted to Metro. |
| Del 2.2 | Review of invoices submitted by signal system vendor. |
| Del 2.3 | Review of all technical documents submitted by the signal system vendor. |
| Del 2.4 | Assistance in the acceptance testing of the signal system |

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II. Recent Project Experience & References

RECENT PROJECT EXPERIENCE & REFERENCES

The following section provides a summary of our experience in serving as the system manager for the selection and deployment of signal systems for various agencies. Also included is a listing of our references for you to call and verify the quality of services that we provide.

Recent Project Experience

Brief descriptions of Iteris' most recent and relevant projects are detailed in the paragraphs below. Each project description includes information on the key staff involved, the project cost, the project construction cost, and the project status.

CITY OF SANTA ROSA TRAFFIC ADAPTIVE PROJECT

The City of Santa Rosa, California is pursuing the selection and implementation of an off-the shelf traffic adaptive system that will provide real-time coordination of signals along College Avenue, a major east-west corridor in the City. Due to the proximity of the corridor to major trip generators in the area and US 101, the corridor experiences both the expected (typical peak period surges) and unplanned variations (diverted traffic due to incidents), as well as unexpected fluctuations from major trip generators, in traffic flow. It is envisioned that the new adaptive traffic system will adjust to the daily fluctuations in traffic flow due to both the expected and unexpected events. Reacting to these volume variations is intended to result in reduced delays, shorter queues and decreased travel times.

Iteris' role on the project has been to:

- Develop a set of functional requirements for the City to identify their needs for the new traffic adaptive system
- Assist the City in the analysis and selection of a new adaptive traffic control system by developing the RFP, reviewing responses to the RFP, and conducting oral interviews of the vendors – A copy of the RFP developed for this project is available in **Appendix B**.
- Development of detailed design plans (PS&E) of any field equipment that are deployed
- Oversight of the system deployment process
- Completion of a before/after evaluation.

Key Staff: Ramin Massoumi, Marc Porter, Glenn Grayson

Project Cost: \$149,945

Project Construction Cost: \$700,000

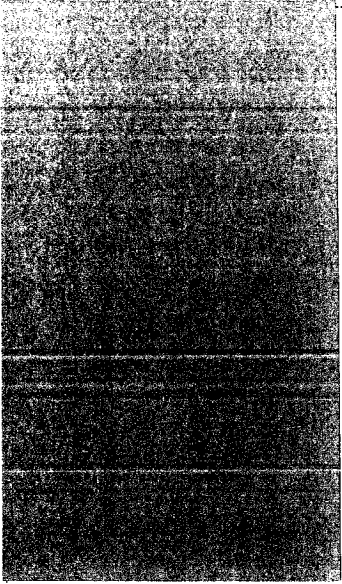
Project Duration: January 2006 – on going

LAS VEGAS AREA ATMS UPGRADE FEASIBILITY STUDY.

Iteris assisted the Las Vegas (Nevada) urban area's traffic management agency, FAST (Freeway and Arterial System of Transportation), in undertaking an evaluation of its ATMS (arterial traffic management system) software and hardware, in order to determine what, if any, improvements should be pursued in



II. Recent Project Experience & References



its immediate future. This Feasibility Study project assessed whether FAST's current arterial traffic management mission was being accomplished with the current ATMS, and determined if a major upgrade or replacement of the system was appropriate. FAST's mission had expanded from solely arterial coordination to also include freeway management since the implementation of the current ATMS. The study included identification of existing conditions and deficiencies, definition of system needs, and analysis of alternatives for upgrade or replacement (with both traditional and adaptive control systems). Iteris also coordinated a scanning tour for six agency staff to visit five comparable examples of system alternatives. A comprehensive set of functional requirements, suitable for the agency's use in going forward with a Request for Proposals, was the final project deliverable. A comparison of the traffic signal systems reviewed for this project is available in Appendix C.

Key Staff: Glenn Grayson, Abbas Mohaddes

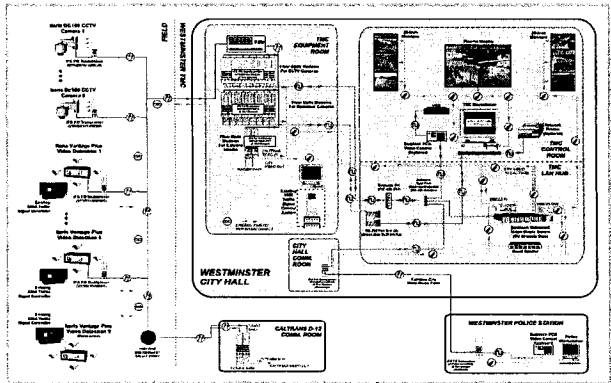
Project Cost: \$150,000

Project Construction Cost: N/A

Project Duration: July 2005 – May 2006

CITY OF WESTMINSTER - TRAFFIC SIGNAL MASTER CONTROLLED SYSTEM & ITS PROJECT

Iteris is the design/build contractor for the City's new traffic signal master controlled system. The project consists of approximately 8 miles of fiber optic communications, traffic signal controller upgrades at 58 intersections, 12 video detection installations, 12 CCTV camera installations, new signal timing plans for 64 signalized intersections, as well as the design and integration of the new Traffic Signal Master Controlled System. Iteris is responsible for all project components, along with procurement, installation, testing and integration of the needed equipment, and training of the City staff for operation of the new system. Our responsibilities include scheduling, monitoring, and inspection of all construction activities for the project. We have sole responsibility for project delivery, on schedule and within budget for a turnkey completion. The City will release an RFP for installation of the fiber optic system to be deployed. However, Iteris will be responsible for integration within the field as well as installation and integration of the head-end communications elements within the TMC.



Key Staff: Marc Porter, Ramin Massoumi, Scott Carlson, Lynda Garcia

Project Cost: \$1,250,000

II. Recent Project Experience & References

Project Construction Cost: To be determined at the completion of the design phase (it is estimated at December 2007)

Project Duration: February, 2007 - Ongoing

CITY OF INGLEWOOD ITS DEPLOYMENT AND INTEGRATION PROJECT

Iteris assisted the City of Inglewood as system manager for the implementation of their overall ITS plan. Traffic congestion on the City's arterial corridors will be minimized by the implementation of ITS elements within areas that need traffic-related improvements. Implementation of the ITS elements provides opportunities for improved traffic management for recurrent and non-recurrent congestion, incidents, and special events at the venues (e.g., Hollywood Park) situated in the City.

Phase I of the project included deployment of closed circuit television (CCTV) cameras with fiber optic communication links, development of an RFP for procurement of the traffic control system and vendor oversight upon selection (BI Tran), and upgrade of the Transportation Management Center (TMC). Phase II consisted of deployment of additional CCTV cameras and fiber optic communication links, citywide installation of the traffic control system, and development of communication interface with other agencies. Iteris also provided contractor oversight for development of the Information Exchange Network interface for the BI Tran QuicNet/4 system. This project allows the exchange and sharing of data, video, and information with regional and local neighboring jurisdictions through the Southern California network and the County of Los Angeles Countywide network. The Inglewood TMC has been identified as a candidate location for the County of Los Angeles sub-regional TMC because of its advanced traffic management capability and fiber optic communication infrastructure.

Key Staff: Abi Mogharabi, Marc Porter, Scott Carlson

Project Cost: \$800,000

Project Construction Cost: \$3,000,000

Current Status: September 1998 to September 2005

ELK GROVE ITS MASTER PLAN AND SIGNAL SYSTEM SELECTION

Iteris assisted the City of Elk Grove in the development of the City's first ITS Master Plan. This plan assessed existing traffic signal operations within the city and developed a strategy to accommodate future growth with the deployment of advanced technologies. The Master Plan also contained a concept plan and a phased implementation plan. One of the technologies proposed for the City involved the replacement of the City's existing controllers and aging VMS 330 traffic control system. Iteris assisted the City in identifying five systems (TransSuite, QuicNet/4, ACTRA, ICONS, and StreetWise) for further evaluation. Iteris developed a Request for Information (RFI) and assisted the city with the vendor interview and requirements analysis. Upon completion of the interview process, Iteris assisted city staff with review of each system and development of

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II. Recent Project Experience & References

the recommended approach. The city selected Naztec for their traffic signal system, and Iteris assisted with contract negotiations and installation oversight. Iteris also provided communications design and signal controller upgrade for the replacement of 820A controllers with Naztec 2070N controllers along three major arterials throughout the city. Iteris will be assisting city staff with an additional six-mile segment of fiber design in the summer 2007 that will also include replacement of several controllers along two additional major arterials.

Key Staff: Marc Porter, Abi Mogharabi, Glenn Grayson, Paul Frislie

Project Cost: \$299,000

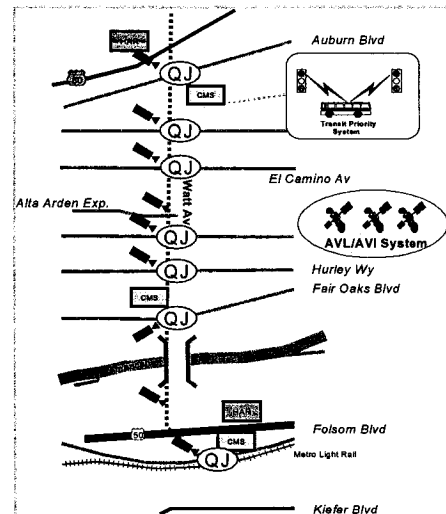
Project Construction Cost: \$1,700,000

Current Status: March 2002 – May 2004 (Phase II - May 2007 – August 2007)

WATT AVENUE TRANSIT PRIORITY AND BRT (MOBILITY ENHANCEMENT)

Iteris assisted the County of Sacramento, California, with identification and deployment of transit and ITS strategies to enhance transit and corridor wide mobility along Watt Avenue. Watt Avenue, a major north-south arterial, is one of the few bridge crossings across the American River. This natural barrier serves to concentrate regional traffic flow at these river crossings, producing much larger than normal traffic flows for an arterial of this character.

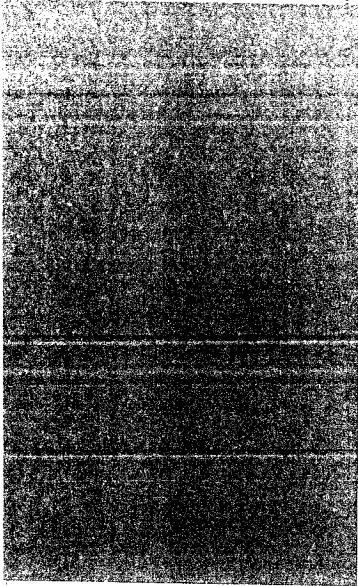
The feasibility analysis consisted of development of a three-year investment strategy focusing on technological, operational, and geometrical improvements. Year-one identified the need for deployment of a demonstration transit priority system (including replacement of controllers and deployment of an advanced traffic control system), Queue Jump, fiber optic cable, and closed circuit television (CCTV). Iteris developed the request for proposal to procure the traffic control system and transit priority system, conducted vendor interviews, detailed system evaluations, and recommended procurement of the ACTRA traffic control system with Seattle Algorithm for transit priority. During the system evaluation, Iteris staff tested the central software, 2070N controllers, and Opticom equipment to make they meet or exceed the requested system functionality. Upon completion, Iteris selected the proposed vendor and provided technical oversight during system installation and controller change-out. As part of this project Iteris led the design efforts for the fiber optic cable and CCTV. Finally, Iteris provided construction assistance and system integration services during implementation of the year-one improvements.



Key Staff: Marc Porter, Ramin Massoumi, Glenn Grayson

Project Cost: \$500,000

II. Recent Project Experience & References



Project Construction Cost: \$1,900,000

Current Status: Completed 2004

SAN GABRIEL VALLEY TRAFFIC FORUM, LOS ANGELES COUNTY, CA

Iteris is a subconsultant to Transcore, Inc. for development of the conceptual design of the Advanced Transportation Management Center (ATMS) elements for the San Gabriel Traffic Forum. The Iteris role within the conceptual phase focused on development of the concept of operations, functional requirements for the local control center systems, and development of the proposed TMC layouts within 16 agencies (please note that some of the TMCs will be as basic as installation of a TCS workstation and IEN workstation to complete TMCs). Phase II is expected to start late summer 2007. Iteris's role will transition to system manager for six agencies that plan to install dedicated traffic control systems. Within this role, Iteris will be responsible for development of the RFP documents, assistance during selection and negotiations, and installation/integration oversight as requested. The overall timeline for Phase II is expected to last over a three year period with 1-2 systems procured each year based on agency readiness and funding via Los Angeles County.

Key Staff: Marc Porter, Tom Petrosino, Lynda Garcia

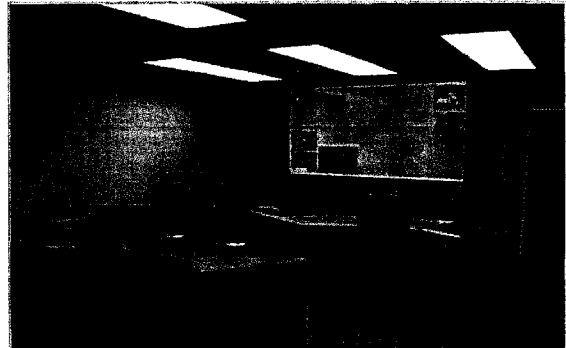
Project Cost: \$340,000 (Phase 1) \$300,000 (Phase 2)

Project Construction Cost: \$1,500,000 (TCS Procurement Only)

Current Status: October 2003 - Present

CORONA ATMS MASTER PLAN AND PHASE I DESIGN PROJECT, CITY OF CORONA, CA

Iteris served as the consultant for the City of Corona on this project to develop the ATMS Master Plan and to implement the Phase I Design project. The objective of the ATMS Master Plan is to outline the phased deployment of the Corona ATMS as funding becomes available. The development of the Master Plan followed a disciplined systems engineering process based of three separate tasks; Task 1, Research and Needs Assessment; Task 2, Analysis; and Task 3, Master Plan. As part of the Master Plan effort, Iteris researched technologies for IP-addressable cameras, dynamic message signs, system detectors, traffic management centers, traffic signal systems, video detection, and Gigabit Ethernet network. The development of the Master Plan followed a systems engineering approach that employed an iterative process in assessing the City's needs and mapping those needs to system solutions. Those system solutions detail phases of the Master Plan, consisting of operational, signal, ITS, and safety improvements.



II. Recent Project Experience & References

The Corona ATMS Master Plan also involved the preparation of a STIP application for additional funding from the Riverside County Transportation Commission, and the application for federal funding. In total, the City and Iteris have been successful in obtaining an additional \$3M in funding as a result of the preparation of the Master Plan. The additional funding will support Phase I and Phase II deployments.

The initial deployment of the Master Plan is the Phase I ATMS project. The Phase I design project includes the upgrade of over 60 City-intersections and 14 Caltrans-intersections to Model 2070 controllers, thirteen IP CCTV cameras, upgrade of existing video detection system to IP, and a new Gigabit Ethernet communication system supported by new fiber optic cable. The City will manage the ATMS system from the new Corona TMC, also designed and implemented as part of this project. The TMC implementation includes the procurement and integration of QuicNet/4 as the traffic signal system that places both City and Caltrans signals on the same system for regional traffic responsive operation, a first in California. The Phase I project will also implement the center-to-center Caltrans-Corona Intertie for the exchange of surveillance video and traffic data between the two agencies. The Phase I design project was completed in late 2005 and construction was completed in early 2007.

The project also involved several institutional issues to integrate the Caltrans traffic signals into the City's traffic responsive signal system. Iteris was instrumental in the consensus building efforts that include a MOU between the two agencies.

Lastly, Iteris is assisting the City with the preparation of the FHWA Project Description Report in support of the federal ITS funding to be used in support of the Corona ATMS Phase II project.

Key Staff: Scott Carlson, Marc Porter, Ramin Massoumi, Sai Chundi

Project Cost: \$527,399

Project Construction Cost: \$3,200,000

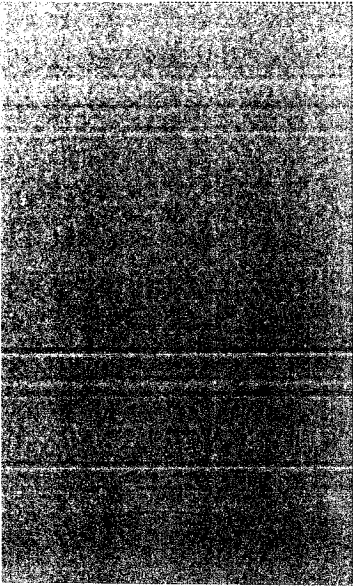
Current Status: April 2001 August 2005; Construction Support 2006- 2007

SOUTH BAY SIGNAL SYNCHRONIZATION AND BUS SPEED IMPROVEMENTS PLAN, PART II, LOS ANGELES COUNTY, CA

Part II of the South Bay Signal Synchronization and Bus Speed Improvements Plan provides design and implementation strategies to improve regional arterial traffic flow and reduce area-wide traffic congestion in the 24 jurisdictions of the South Bay region of Southern California. This project followed a disciplined systems engineering process to develop, design and implement CCTV, system detection, and communication systems in conjunction with the development, design and implementation of ATMS, ATIS, and TMCs. The following is a detailed listing of the activities that have or are currently taking place on this project:

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II. Recent Project Experience & References

- 
- Development of and ranking of proposed CCTV and system detection deployment locations throughout the region along 39 arterials.
 - Study and field reconnaissance to develop a detailed listing of locations in which existing detection system can be utilized for system detection without any modifications, existing detection system that can be utilized for system detection with minimal modifications, and new system detectors are required.
 - Development of a plan for a regional communications network to support functional requirements of the proposed advanced traffic management system (ATMS), regional and local traffic management centers (TMC) and advanced traveler information systems (ATIS) for voice, data and video transmission capabilities. This included strategies to provide connectivity between the signalized intersections and the traffic control system (TCS).
 - Detailed study of an immediate term deployment of communication media (wired such as leased service and wireless such as MeshNetworks and spread spectrum radio) that would provide the most efficient and cost effective solutions for a pilot deployment.
 - Preparation of a Request for Bids document that will secure the acquisition and implementation services of a qualified wireless communications vendor to construct and activate a spread spectrum based wireless radio system as part of a pilot deployment.
 - Conceptual and final design of the recommended long term communications system using a phased deployment approach.
 - Detail design (PS&E) of wired and wireless communication system at selected locations in the South Bay that supports the regional communication plan.

Key Staff: Marc Porter, Ramin Massoumi, Abi Mogharabi, Lynda Garcia,

Project Cost: \$1,229,511 (conceptual design) \$1,250,000 (Final Design)

Project Construction Cost: \$10,000,000 (estimated)

Current Status: June 1998 - Present

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II. Recent Project Experience & References

Client References

Iteris has recently conducted several comparable assignments for the following public and municipal agency clients. We urge you to contact each individual for reference.

Rob Sprinkle

Supervising Engineer
City of Santa Rosa
69 Sony Circle
Santa Rosa, CA 95401
(707) 543-3817

Doug Maas

Senior Civil Engineer
County of Sacramento Department of Transportation
9630 Conservation Road
Sacramento, CA 95827
(916) 875-5545

Jane White

ITS Program Manager
Los Angeles County, Department of Public Works
900 South Fremont Avenue, Annex 1st Floor
Alhambra, CA 91803-1331
(626) 300-2020

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Cost Proposal

April 19, 2007

Iteris, Inc.
1515 South Manchester Avenue
Anaheim, CA 92802

Elaine Jeng, P.E.
CITY OF CULVER CITY
Engineering Division; 2nd Floor
9770 Culver City Boulevard
Culver City, CA 90232

Re: Cost Proposal for the Configuration / Project Management Services for The Fox Hills
Traffic Signal Synchronization Project - Acquisition of a Traffic Control System P-852
P07-0022

Dear Ms. Jeng:

Iteris, Inc. (Iteris) is very pleased to submit this cost proposal to assist the City of Culver City for the Configuration / Project Management Services for The Fox Hills Traffic Signal Synchronization Project - Acquisition of a Traffic Control System.

The following person has full authority to negotiate this contract on behalf of Iteris, Inc.:

Marc Porter
Vice President - Western Division
ITS/Engineering
Iteris, Inc.
1515 S. Manchester Avenue
Anaheim, CA 92802
Email: map@iteris.com
Phone: (714) 780-7712
Fax: (714) 780-7287
Fed ID#: 95-2588496

Attached are Iteris' Standard Fee Schedule and a detailed cost estimate based on our understanding of the Scope of Work.

Thank you very much for the opportunity to submit this proposal. We look forward to the opportunity to assist the City of Culver City on this very exciting project. If you have any questions, please feel free to call either myself at (714) 780-7712, or our designated project manager, Ramin Massoumi at (714) 780-7719.

Sincerely,
Iteris, Inc.



Marc Porter
Vice President, Western Division



STANDARD FEE SCHEDULE

STAFF LEVEL	HOURLY RATE
Vice President/ Principal	\$ 180 - 250
Associate Principal/Associate Vice President	\$ 160 - 210
Senior Systems Engineer/Senior Program Manager	\$ 120 - 200
Senior Software Engineer	\$ 130 - 195
Senior Transportation Engineer/Planner	\$ 130 - 185
Software Engineer	\$ 75 - 140
ITS Designer	\$ 100 - 130
Transportation/Systems Engineer	\$ 110 - 125
Transportation Engineer/Planner	\$ 90 - 130
Field Technician	\$ 70 - 100
Associate Transportation Engineer/Planner	\$ 100 - 130
Assistant Transportation Engineer/Planner	\$ 70 - 105
Accounting/Financials	\$ 55 - 110
Technical Support/Editing	\$ 45 - 90
Graphics Support	\$ 45 - 80
Computer Aided Drafting Support	\$ 45 - 80
Administrative Support	\$ 65 - 80

Standard Terms and Conditions

- Invoices are due and payable within 30 days of date of invoice. Invoices outstanding over 30 days will be assessed a 1 1/4 percent service charge not to exceed the maximum allowable by law, for each 30 days outstanding beyond the initial payment period.
- Project expenses will be billed at cost plus 10 percent for service and handling. Expenses include project-related costs, such as subcontractor services, traffic counts, postage/delivery service, reproduction, transportation, and subsistence.

Effective through March 30, 2008.

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PROPOSED COST ESTIMATE

Configuration / Project Management Services for The Fox Hills Traffic Signal Synchronization Project –
Acquisition of a Traffic Control System P-852

TASK		Billing Rate			Total Hours	Total Cost
		Ramin Massoumi Project Manager	Marc Porter Project Engineer	Glenn Grayson Project Engineer		
		\$185	\$200	\$185		
Task 1.0	PREPARATION OF A RFP	88	24	80	192	\$35,880
	Meeting #1: Project Kick-Off Meeting (notes part of Deliverable 1.0)	4	4	4		
Sub-Task 1.1	DEVELOPMENT/ IDENTIFICATION OF SYSTEM REQUIREMENTS & FUNCTIONALITIES	20	6	16	42	\$7,860
	Meeting #2: Functional Requirements/System Identification Workshop (notes part of Deliverable 1.0)	8	4	4		
Deliverable 1.1	System Requirements & Functionalities Technical Memorandum	12	2	12		
Sub-Task 1.2	AVAILABLE TRAFFIC CONTROL SYSTEM EVALUATIONS	36	4	16	56	\$10,420
Deliverable 1.2	Draft RFP Package	24		16		
	Meeting #3: Review of the Draft RFP (notes part of Deliverable 1.0)	4	2			
Deliverable 1.3	Final RFP Package	8	2			
Sub-Task 1.3	TRAFFIC CONTROL SYSTEM SELECTION	28	4	16	48	\$8,940
	Meeting #4: Pre-Bid Conference (notes part of Deliverable 1.0)	4	2			
	Meeting #5: Potential Vendor Oral Interviews (notes part of Deliverable 1.0)	8		8		
	Meeting #6: Vendor Selection (notes part of Deliverable 1.0)	4	2			
Deliverable 1.4	Recommended System Technical Memorandum	12		8		
Task 2.0	PROJECT MANAGEMENT	110	20	48	178	\$33,230
Sub-Task 2.1	PROCUREMENT & CONSTRUCTION ASSISTANCE	92	14	48	154	\$28,700
	Meeting #7: Vendor Negotiation (notes part of Deliverable 2.0)	8		8		
	Meeting #8: Vendor/ Iteris/ City Kick-Off Meeting (notes part of Deliverable 2.0)	4	2			
	Meeting #9: Six (6) Monthly Vendor/ Iteris/ City Progress Meetings(notes part of Deliverable 2.0)*	24	12			
Deliverable 2.1	Quarterly Progress Reports to METRO	28		12		
Deliverable 2.2	Review of vendor submitted invoices (also part of Sub-task 2.2)	16		12		
Deliverable 2.3	Review of vendor's technical documents (also part of Sub-task 2.2)	12		16		
Sub-Task 2.2	ACCEPTANCE TESTING	18	6	0	24	\$4,530
	Meeting #10: Pre-ATP Meeting w/Vendor/ Iteris/ City (notes part of Deliverable 2.0)	4	4			
Deliverable 2.4	Acceptance Testing Assistance					
	Meeting #11: ATP Meeting (notes part of Deliverable 2.0)	12				
	Meeting #12: Project Close-out (notes part of Deliverable 2.0)	2	2			
Total Labor Hours		198	44	128	370	\$69,110
		ODC (i.e. mileage, copies, etc)				\$1,755
		Insurance ODC**				\$1,000
		TOTAL				\$71,865
*Projected Meeting Hours						
Meeting #9: Each meeting is expected to consume: Ramin 4 hours, Marc 2 hours						
**Insurance endorsement fee. The fee will be waived if the City accepts the use of Iteris' \$10 million umbrella coverage to fulfill the requirement for the General Aggregate to apply separately to the contract						

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MINAGAR & ASSOCIATES, INC.

ITS Deployment / Engineering / Planning – Traffic Engineering – Transportation Planning Consultants

Billing Rates for MINAGAR & ASSOCIATES, INC. (Effective January 1, 2007)

Compensation for Services (approved by the State of California)

The Consultants Billing rates for services are as follows:

Position	Fully Loaded Hourly Billing Rate
Principal-In-Charge/Project Director	\$153.05
Project Manager	\$132.77
Senior Electrical Engineer	\$125.00
Field Manager/Construction Manager	\$111.84
Principal Engineering Designer	\$132.77
Senior Designer	\$87.00
Engineering Assistant	\$39.24
Planning Assistant	\$35.27
Admin Assistant	\$30.74

General

1. Reimbursable direct costs, such as, reproduction of engineering plans, traffic counts, machine counts, special messenger services will be billed at cost plus ten (10) percent.
2. Hourly rates apply to work time, travel time and time spent at public hearings and board/council/commission meetings. For overtime work, the above rates may be increased in accordance to the State of California's Overtime Rules and Regulations.
3. Client payment for professional services is not contingent upon the client receiving payment from other parties.
4. Billing statements for work will be submitted monthly. Statements are payable within thirty (30) days of the receipt by client of statement. Any statement unpaid after thirty (30) days shall be subject to interest at the maximum permitted by law.

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**Fox Hills Area Traffic Signal Synchronization Upgrade
Configurations/Project Management Services
Task 1- Preparation of RFP
Minagar & Associates, Inc.**

Professional Services	Billable Hourly Rate	Man Hours	Salary Cost
Project Director/ Manager	\$153.05	15	\$2,296
Principal Engineering Designer	132.77	75	9,958
Senior Electrical Engineer	125.00	60	7,500
Senior Designer	87.00	64	5,568
Graphics/Word Processor/Clerical	30.74	40	1,230
Total Manhours		254	
Total Direct Salary Costs			\$26,551
Direct Expenses	Amount	Each	Cost
Travel:			
Mileage	450	\$0.405	\$182
Rental Car (per day)	0	\$75	0
Per Diem	0	\$125	0
Computer (per hour)	0	\$10	0
Reproduction/Reports	500	\$0.07	35
Phone/Fax/Delivery			140
Miscellaneous (Film & Dev)			185
Meetings (with City Staff & etc)	3	750	2,250
TOTAL DIRECT EXPENSES			\$2,792
SUBTOTAL DIRECT EXPENSES (Total Dir. Expenses X 1.05)			2932
TOTAL COST			\$29,483
GRAND TOTAL COST			\$29,483

04/17/07

**Fox Hills Area Traffic Signal Synchronization Upgrade
Configurations/Project Management Services
Task 2- Project Management
Minagar & Associates, Inc.**

	Billable Hourly Rate	Man Hours	Salary Cost
Professional Services			
Project Director/ Manager	\$153.05	148	\$22,651
Principal Engineering Designer	132.77	125	16,596
Senior Electrical Engineer	125.00	144	18,000
Senior Designer	87.00	97	8,439
Graphics/Word Processor/Clerical	30.74	53	1,629
Total Manhours		567	
Total Direct Salary Costs			\$67,316
Direct Expenses			
	Amount	Each	Cost
Travel:			
Mileage	1,163	\$0.405	\$471
Rental Car (per day)	0	\$75	0
Per Diem	0	\$125	0
Computer (per hour)	0	\$10	0
Reproduction/Reports	400	\$0.07	28
Phone/Fax/Delivery			140
Miscellaneous (Film & Dev)			200
Meetings (with City Staff & etc)	8	750	6,000
TOTAL DIRECT EXPENSES			\$6,839
SUBTOTAL DIRECT EXPENSES (Total Dir. Expenses X 1.05)			7181
TOTAL COST			\$74,497
GRAND TOTAL COST			\$74,497

04/17/07

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\$ 30,000
75,000
\$ 105,000

**Proposal to Provide Configuration / Project Management Services for
The Fox Hills Traffic Signal Synchronization Project – Acquisition of a Traffic Control System**

April 19, 2007

City of Culver City
Engineering Division, 2nd Floor
9770 Culver Boulevard
Culver City, CA 90232
ATTN: Elaine Jeng, P.E.

**Subject: COST PROPOSAL: To Provide Configuration/Project Management Services for the
“Fox Hills Traffic Signal Synchronization Project – Acquisition of a Traffic Control System”**

Dear Elaine,

ADVANTEC Consulting Engineers, Inc. is pleased to submit the cost proposal for the above referenced project to the City of Culver City. This cost proposal is submitted in conjunction with our technical proposal for this project. We are very excited about this opportunity and are committed to providing the City of Culver City with quality traffic engineering services.

This cost proposal is developed based on our clear understanding of the City of Culver City's needs, as described in our technical proposal.

Details breakdown of man-hours and costs by task of our cost proposal are shown in the table on the next page. All labor and expenses necessary to complete the subject project are included in the cost proposal.

We thank you for this opportunity to submit this proposal. Please contact me at 909-860-6222 if have any questions about this proposal. This proposal is valid for 90 days.

Sincerely,
ADVANTEC Consulting Engineers, Inc.



Bernard K. Li, P.E., P.T.O.E.
Vice President

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**Proposal to Provide Configuration / Project Management Services for
The Fox Hills Traffic Signal Synchronization Project – Acquisition of a Traffic Control System**

Table 6.1 Fee Proposal

Labor Cost	Project Manager \$220	Task Leaders \$170	Engineers \$100	Support \$60	Total Hours	Total Cost
Task 1 – Prepare RFP						
1.1 Identification of key functional Requirements	16	28		8	52	\$8,760
1.2 Development of Non-technical Requirements	12	24	6	8	50	\$7,800
1.3 Preparation of RFP	38	62	12	12	124	\$20,820
1.4 System Selection Assistance	46	64		10	120	\$21,600
1.5 Meetings	28	28			56	\$10,920
Total Task 1	140	206	18	38	402	\$69,900
Task 2 – Project Management						
2.1 Conduct Requirement Walk Through	8	10			18	\$3,460
2.2 Review Documentation	38	74	24	4	140	\$23,580
2.3 Conduct Tests	24	48			72	\$13,440
2.4 Monitor Progress and Review Invoices	36	72			108	\$20,160
2.5 Provide Quarterly Report for METRO	2	14		6	22	\$3,180
2.6 On-call Technical and Admin Support	40	40			80	\$15,600
Total Task 2	148	258	24	10	440	\$79,420
Total Labor	288	464	42	48	842	\$149,320
Other Direct Cost						
Travel	1200 miles @\$0.485 per mile				\$582	\$582
Total Direct Costs						
TOTAL COST						\$149,902

ADVANTEC proposes to conduct this project on a time-and-materials basis, due to the uncertainty of the amount of time necessary for some of the tasks, especially for those in Task 2 – Project Management. Our billing rates are provided in Table 6.2 in the next page.

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**Proposal to Provide Configuration / Project Management Services for
The Fox Hills Traffic Signal Synchronization Project – Acquisition of a Traffic Control System**

Table 6.2 Billing Rates

**ADVANTEC Consulting Engineers
Hourly Rates**

The following hourly rates are applicable as of the date of this proposal submittal, and these rates are to be maintained for a minimum of one year from the date of contract award.

Effective January 2007

<u>Classification</u>	<u>Rate</u>
Project Manager	\$220 / hour
Task Leader	\$170 / hour
Senior Engineer / Planner	\$140 / hour
Engineer / Planner	\$100 / hour
Assistant Engineer / Planner	\$80 / hour
Support Staff	\$75 / hour
Administrative Manager	\$90 / hour
Administrative Support	\$60 / hour

**Direct Costs
(Effective January 2007)**

Travel Mileage	\$0.485 per mile
Computer CAD Charges	\$12.00 per hour
In House Copies (b/w)	\$0.10 per page
In House Copies (color)	\$2.00 per page
In House Plotting (Mylar)	\$20.00 per D-size sheet
In House Plotting (Bond)	\$10.00 per D-size sheet
Facsimile	\$1.00 per page
Other Direct Costs	At Cost + 10% admin

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