AGREEMENT FOR CONSULTANT SERVICES
LOS GATOS SMART SIGNALS - DESIGN FOR FIELD IMPROVEMENTS

THIS AGREEMENT is made and entered into on_____(DATE) by and between TOWN OF LOS GATOS, a California municipal corporation, ("Town") and Iteris, Inc., ("Consultant"), whose address is 1999 Harrison Street, Suite 2125, Oakland CA 94612. This Agreement is made with reference to the following facts.

I. RECITALS

1.1 The Town desires to engage Consultant to provide Design Services for the Los Gatos Smart Signals - Design for Field Improvements Project.

1.2 The Consultant represents and affirms that it is willing to perform the desired work pursuant to this Agreement.

1.3 Consultant warrants it possesses the distinct professional skills, qualifications, experience, and resources necessary to timely perform the services described in this Agreement. Consultant acknowledges Town has relied upon these warranties to retain Consultant.

II. AGREEMENTS

2.1 Scope of Services. Consultant shall provide services as described in that certain Proposal sent to the Town on March 6, 2020, which is hereby incorporated by reference and attached as Exhibit A.

2.2 Term and Time of Performance. This contract will remain in effect from May 20, 2020 to December 31, 2021. Consultant shall perform the services described in this agreement as follows:
- Draft Submittal by July 31, 2020.
- Bid document Submittal by September 30, 2020.
- Bid and construction services through balance of contract.

2.3 Compliance with Laws. The Consultant shall comply with all applicable laws, codes, ordinances, and regulations of governing federal, state and local laws. Consultant represents and warrants to Town that it has all licenses, permits, qualifications and approvals of whatsoever nature which are legally required for Consultant to practice its profession. Consultant shall maintain a Town of Los Gatos business license pursuant to Chapter 14 of the Code of the Town of Los Gatos.

2.4 Sole Responsibility. Consultant shall be responsible for employing or engaging all persons necessary to perform the services under this Agreement.

2.5 Information/Report Handling. All documents furnished to Consultant by the Town and all reports and supportive data prepared by the Consultant under this Agreement are the Town's property and shall be delivered to the Town upon the completion of Consultant's services or at the Town's written request. All reports, information, data, and exhibits prepared or assembled by Consultant in connection with the performance of its services pursuant to this Agreement are confidential until released by the Town to the public, and the Consultant shall not make any of the these documents or information available to any individual or organization not employed by the Consultant or the Town without the written consent of the Town before such release. The Town acknowledges that the reports to be prepared by the Consultant pursuant to this Agreement are for the purpose of evaluating a defined project, and Town's use of the information contained in the reports prepared by the Consultant in connection with other projects shall be solely at Town's risk, unless Consultant expressly consents to such use in writing. Town further agrees that it will not appropriate any methodology or technique of Consultant which is and has been confirmed in writing by Consultant to be a trade secret of Consultant.

2.6 Compensation. Compensation for Consultant's professional services **shall not exceed** $135,390, inclusive of all costs. Payment shall be based upon Town approval of each task.

2.7 Billing. Billing shall be monthly by invoice within thirty (30) days of the rendering of the service and shall be accompanied by a detailed explanation of the work performed by whom at what rate and on what date. Also, plans, specifications, documents or other pertinent materials shall be submitted for Town review, even if only in partial or draft form.

Payment shall be net thirty (30) days. All invoices and statements to the Town shall be addressed as follows:

Invoices:
Town of Los Gatos
Attn: Accounts Payable
P.O. Box 655
Los Gatos, CA 95031-0655

2.8 Availability of Records. Consultant shall maintain the records supporting this billing for not less than three years following completion of the work under this Agreement. Consultant shall make these records available to authorized personnel of the Town at the Consultant's offices during business hours upon written request of the Town.

2.9 Assignability and Subcontracting. The services to be performed under this Agreement are unique and personal to the Consultant. No portion of these services shall be assigned or subcontracted without the written consent of the Town.

2.10 Independent Contractor. It is understood that the Consultant, in the performance of the work and services agreed to be performed, shall act as and be an independent contractor and not an agent or employee of the Town. As an independent contractor he/she shall not obtain any rights to retirement benefits or other benefits which accrue to Town employee(s). With prior written consent, the Consultant may perform some obligations under this Agreement by subcontracting, but may not delegate ultimate responsibility for performance or assign or transfer interests under this Agreement. Consultant agrees to testify in any litigation brought regarding the subject of the work to be performed under this Agreement. Consultant shall be compensated for its costs and expenses in preparing for, traveling to, and testifying in such matters at its then current hourly rates of compensation, unless such litigation is brought by Consultant or is based on allegations of Consultant's negligent performance or wrongdoing.

2.11 Conflict of Interest. Consultant understands that its professional responsibilities are solely to the Town. The Consultant has and shall not obtain any holding or interest within the Town of Los Gatos. Consultant has no business holdings or agreements with any individual member of the Staff or management of the Town or its representatives nor shall it enter into any such holdings or agreements. In addition, Consultant warrants that it does not presently and shall not acquire any direct or indirect interest adverse to those of the Town in the subject of this Agreement, and it shall immediately disassociate itself from such an interest, should it discover it has done so and shall, at the Town's sole discretion, divest itself of such interest. Consultant shall not knowingly and shall take reasonable steps to ensure that it does not employ a person having such an interest in this performance of this Agreement. If after employment of a person, Consultant discovers it has employed a person with a direct or indirect interest that would conflict with its performance of this Agreement, Consultant shall promptly notify Town of this employment relationship, and shall, at the Town's sole discretion, sever any such employment relationship.

2.12 Equal Employment Opportunity. Consultant warrants that it is an equal opportunity employer and shall comply with applicable regulations governing equal employment opportunity. Neither Consultant nor its subcontractors do and neither shall discriminate against persons employed or seeking employment with them on the basis of age, sex, color, race, marital status, sexual orientation, ancestry, physical or mental disability, national origin, religion, or medical condition, unless based upon a bona fide occupational qualification pursuant to the California Fair Employment & Housing Act.

III. INSURANCE AND INDEMNIFICATION

3.1 Minimum Scope of Insurance:

i. Consultant agrees to have and maintain, for the duration of the contract, General Liability insurance policies insuring him/her and his/her firm to an amount not less than: one million dollars ($1,000,000) combined single limit per occurrence for bodily injury, personal injury and property damage.

ii. Consultant agrees to have and maintain for the duration of the contract, an Automobile Liability insurance policy ensuring him/her and his/her staff to an amount not less than one million dollars ($1,000,000) combined single limit per accident for bodily injury and property damage.

iii. Consultant shall provide to the Town all certificates of insurance, with original endorsements effecting coverage. Consultant agrees that all certificates and endorsements are to be received and approved by the Town before work commences.

iv. Consultant agrees to have and maintain, for the duration of the contract, professional liability insurance in amounts not less than $1,000,000 which is sufficient to insure Consultant for professional errors or omissions in the performance of the particular scope of work under this agreement.

General Liability:

i. The Town, its officers, officials, employees and volunteers are to be covered as insured as respects: liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of Consultant, premises owned or used by the Consultant. This requirement does not apply to the professional liability insurance required for professional errors and omissions.

ii. The Consultant's insurance coverage shall be primary insurance as respects the Town, its officers, officials, employees and volunteers. Any insurance or self-insurances maintained by the Town, its officers, officials, employees or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

iii. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Town, its officers, officials, employees or volunteers.

iv. The Consultant's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.2 All Coverages. Each insurance policy required in this item shall be endorsed to state that coverage shall not be suspended, voided, cancelled, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the Town. Current certification of such insurance shall be kept on file at all times during the term of this agreement with the Town Clerk.

3.3 Workers' Compensation. In addition to these policies, Consultant shall have and maintain Workers' Compensation insurance as required by California law and shall provide evidence of such policy to the Town before beginning services under this Agreement. Further, Consultant shall ensure that all subcontractors employed by Consultant provide the required Workers' Compensation insurance for their respective employees.

3.4 Indemnification. To the fullest extent premitted by law, the Consultant shall save, keep, hold harmless and indemnify and defend the Town its officers, agent, employees and volunteers from all damages, liabilities, penalties, costs, or expenses in law or equity that may at any time arise or be set up because of damages to property or personal injury received by reason of, or in the course of performing work which may be occasioned by a willful or negligent act or omissions of the Consultant, or any of the Consultant's officers, employees, or agents or any subconsultant.

IV. GENERAL TERMS

4.1 Waiver. No failure on the part of either party to exercise any right or remedy hereunder shall operate as a waiver of any other right or remedy that party may have hereunder, nor does waiver of a breach or default under this Agreement constitute a continuing waiver of a subsequent breach of the same or any other provision of this Agreement.

4.2 Governing Law. This Agreement, regardless of where executed, shall be governed by and construed to the laws of the State of California. Venue for any action regarding this Agreement shall be in the Superior Court of the County of Santa Clara.

4.3 Termination of Agreement. The Town and the Consultant shall have the right to terminate this agreement with or without cause by giving not less than fifteen days (15) written notice of termination. In the event of termination, the Consultant shall deliver to the Town all plans, files, documents, reports, performed to date by the Consultant. In the event of such termination, Town shall pay Consultant an amount that bears the same ratio to the maximum contract price as the work delivered to the Town bears to completed services contemplated under this Agreement, unless such termination is made for cause, in which event, compensation, if any, shall be adjusted in light of the particular facts and circumstances involved in such termination.

4.4 Amendment. No modification, waiver, mutual termination, or amendment of this Agreement is effective unless made in writing and signed by the Town and the Consultant.

4.5 Disputes. In any dispute over any aspect of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, including costs of appeal.

4.6 Notices. Any notice required to be given shall be deemed to be duly and properly given if mailed postage prepaid, and addressed to:

Town of Los Gatos	Iteris Inc.
Attn: Town Clerk	Attn: Richard Shinn
110 E. Main Street	1999 Harrison Street, Suite 2125
Los Gatos, CA 95030	Oakland CA 94612

or personally delivered to Consultant to such address or such other address as Consultant designates in writing to Town.

4.7 Order of Precedence. In the event of any conflict, contradiction, or ambiguity between the terms and conditions of this Agreement in respect of the Products or Services and any attachments to this Agreement, then the terms and conditions of this Agreement shall prevail over attachments or other writings.

4.8 Entire Agreement. This Agreement, including all Exhibits, constitutes the complete and exclusive statement of the Agreement between the Town and Consultant. No terms, conditions, understandings or agreements purporting to modify or vary this Agreement, unless hereafter made in writing and signed by the party to be bound, shall be binding on either party.

IN WITNESS WHEREOF, the Town and Consultant have executed this Agreement.

Town of Los Gatos by:

_____

Laurel Prevetti, Town Manager

Consultant, by:

_____

Name/Title

Recommended by:

_____

Matt Morley, Director of Parks and Public Works

Approved as to Form:

_____

Robert Schultz, Town Attorney

Attest:

_____

Shelley Neis, CMC, Town Clerk

EXHIBIT A – SCOPE OF SERVICES

2. ORGANIZATION AND APPROACH

2.1 Roles and Organization of Proposed Team

With offices in Oakland, Santa Ana (headquarters) and Los Angeles, Iteris has the resources of over 100 team members throughout California dedicated to Traffic Engineering, Transportation Planning, and ITS. Iteris' proposed team organization is provided in **Figure 1** and includes seven project staff.

Figure 1 – Project Team Organization

STAFF	TASK A2 Communications Design	TASK A3 Preliminary Design/Utility Coordination	TASK A4 Right-of-Way Certification	TASK A5 Final Design	TASK A6 Construction Phase Authorization	TASK B1 Bid Services	TASK BC1 Construction Support Services
Richard Shinn	◆	✓	✓	✓	✓	◆	◆
David Huynh, PE	✓	✓	✓	✓	✓	✓	✓
Matt Wages, PE	✓	◆		◆		✓	✓
Monique Fuhrman, PE		✓	◆	✓	◆	✓	✓
Tuan Nguyen, CCDP, CCNP, CCNA	✓						
Kassra Rafiee, EIT	✓	✓	✓	✓	✓	✓	✓

PROJECT MANAGEMENT

Rich Shinn
Project Manager

Rich brings over 29 years of experience and has played a technical or managerial role in many major Bay Area ITS programs over the last 15 years including MTC's NexGen Arterial Operations Program, the San Mateo County Smart Corridor Program, the I-80 Integrated Corridor Management Program, and the SFgo and Santa Clara County TOS. He will serve as the Project Manager (PM) for this project and will be the principal contact with the Town of Los Gatos and other entities per Town's direction. As PM, Rich brings our client solutions that work, solutions that innovate and solutions that are smart as shown through his long track record of success on projects such as Los Gatos' IDEA Program Category 2 Project. With his extensive background and experience on other projects similar to this one, Rich is the ideal PM for the Town.

Please direct any follow-up questions or needed clarifications regarding this submittal to Rich at **rjs@iteris.com** or **(925) 872-0834**.

KEY PERSONNEL CAPSULE PROFILES

This section includes high-level summaries of the key staff proposed for this project.

DAVID HUYNH, PE – QUALITY CONTROL/ QUALITY ASSURANCE

David brings over 23 years of transportation experience having worked in both the public and private sectors with a focus on traffic engineering, design, Intelligent Transportation System (ITS), operations, signal systems, communications design, TSP design and implementation, connected vehicle, and system engineering. David previously served as the Senior Transportation Engineer for the City of Fremont where he managed the Transportation Group and was responsible for operation and management of the City's traffic signals and central signal system, project delivery of capital projects, transportation analysis and plan review for new developments.

Education and Registrations
MS, Civil Engineering (Transportation)
BS, Civil Engineering
PE, CA #60230

MATT WAGES, PE – TASK LEAD (TASKS A3, A5 AND A9)

Matt has more than 11 years of hands-on technical and project management experience in many areas of ITS, traffic engineering and design, traffic signal timing and systems integration. Matt's main focus is in the areas of advanced technologies for ITS, transportation management systems, communications networks, CCTV systems, Bus Rapid Transit (BRT) and TSP, and railroad and Emergency Vehicle Preemption (EVP). His wide range of skills focuses on the planning, design, deployment and integration of advanced technologies and electrical systems for transportation management.

Education and Registrations
BS, Civil Engineering
PE, CA #82548

MONIQUE FUHRMAN, PE – TASK LEAD (TASK A4)

Monique has 9 years of experience working in the fields of traffic engineering, transportation design, ITS design and planning, public works engineering, and civil site engineering. Monique has performed analyses as part of traffic studies using the traffic analysis software Synchro and HCS. She has also prepared traffic analysis and design in compliance with standards set forth by the California Department of Transportation (Caltrans), the Los Angeles Department of Transportation (LADOT), and various local municipalities in Northern and Southern California. Monique has extensive experience with fiber optic communication projects, including signal interconnect, fiber, and wireless design for various communication applications. Her civil site engineering experience is in both public and private sector engineering projects. Monique has provided support to various types and phases of projects including: signing and striping plans, grading, demolition plans, erosion control plans, storm water management, fiber optic design, street lighting design, communications, traffic impact studies, traffic signal modification, and utility design. She also has experience in all phases of design from proposals to preliminary studies to design packages and through final submittals and construction support.

Education and Registrations
BS, Civil Engineering
PE, CA #82740

2.2 Project Management Approach

The Iteris Team has been involved in this project since the beginning and has an unmatched understanding of all project phases and how they interrelated and depend on each other in order to successfully complete this project. **As a matter of fact, Iteris' PM, Mr. Richard Shinn, has been involved since the inception of this project supporting MTC in the initial project concept development and scope refinement process.** He has since and continues to serve as the PM for Iteris on the SE phase of the project. The Iteris Team sees this project design as a natural progression into the next phase of the overall project goal. Having already worked with all agency project partners over the last 1.5 years, we hope to say that Iteris has built a great working relationship and trust with the Town moving forward into this next project design phase. With the Iteris Team, Rich we will provide the Town with complete project continuity from start to finish.

The Iteris Team understands what has been done, what needs to be done, and can move this design phase of the project in an expedited manner to meet the Town's schedule requirements.

The delivery of this project has essentially been divided up into three phases: SE; adaptive system, central signal system, and VBD system deployments; and construction of field elements to support these systems. Iteris is the systems engineer working with the Town and its project partners throughout the SE process. This process has resulted in the development of the current RFP for the procurement of the adaptive and central traffic control systems. During the deployment of the adaptive system by the selected vendor, as the systems engineer, Iteris will continue to provide support the Town. As part of the adaptive system deployment, the Town will need to provide the selected adaptive and central signal system vendor with a working communications infrastructure and the necessary intersection detection configuration along the adaptive system corridor. Thus, this project design phase is a natural continuation of Iteris' previous and current work effort on this project. As a result of Iteris' work during the SE process, Iteris has already collected traffic signal as-builts, communications infrastructure and configuration, and performed a field inventory for most of the Town's 31 signals.

Our approach to this project will focus on developing a complete and thorough design package, as well as obtaining all necessary approvals, that is ready to advertise for construction by the Fall. We will leverage our previous field survey work as the Los Gatos IDEA project System Engineer to expedite our detailed design. In addition, Task A2 – Communications Design and Task A3 – Preliminary Design/Utility Coordination will commence immediately upon NTP. Mr. Shinn will work with our staff of Cisco and Microsoft certified engineers to develop the overall network architecture that will seamlessly migrate the Town's traffic network to 100% Ethernet protocols. In parallel, a locally based design team will develop the PS&E package that incorporates the network architecture.

Our approach will be proactive, communicative and punctual. ITS design projects such as this are one of Iteris' core competencies. We know the typical pitfalls and will avoid them. Our PM will keep Town staff informed every step of the way so there are no surprises and results in high quality deliverable submitted on time.

2.3 Resumes

Roles for Iteris' proposed team members are presented in **Section 2.1**. Detailed resumes for proposed team members are provided in the **Appendix.**

3. SCOPE OF SERVICES

3.1 - 3.2 Scope of Services and Project Deliverables

The following section describes our approach to performing the scope of services outlined in the RFP. In it, we highlight some of the key challenges and issues and provide insights into how our team and the Town of Los Gatos can collaboratively address them as the overall program moves forward.

TASK A. DESIGN SERVICES

Iteris will provide all design services, including but not limited to: project management, preliminary engineering, utility coordination and right-of-way, and final design and development of all contract documents. This work will be organized into the following tasks. A resource allocation table with hours per task/subtask is provided in **Table 1** in **Section 3.3**.

Subtask A1. Project Management

Project management will be an extremely important component of this project as coordination will be needed with this project's selected ATCS-ATMS system vendor(s) as well as Town staff and consultants. At the initiation of the project, the Iteris Team will lead a project kick-off meeting with the Town and other project stakeholders. Through Iteris' current work as the systems engineer on the IDEA portion of the program, Mr. Richard Shinn, our PM, has already built a strong relationship with the Town's staff that will have a positive contribution to engaging the Town throughout the project. The goal of this meeting will be to establish communications protocol, review the scope of services, project staff, goals and expectations, approach, methodology, schedule, and any other items the Town and its project partners would like to discuss. Iteris will hold weekly meetings with the Town's Project Manager to provide updates on project progress and to discuss and resolve any project issues. Throughout the project, Iteris will continue to also coordinate with the Town for various project elements such as design reviews and permitting. Iteris will organize and lead any necessary project meetings with the Town and any or all project partners to discuss and resolve issues in order to keep and maintain forward progress on this project.

Iteris will provide project management activities throughout the duration of this project. Iteris will prepare and distribute meeting agendas prior to each meeting and meeting minutes summarizing outcomes and any action items for each meeting, provide monthly invoices and progress reports to Town staff, and create and maintain a project schedule. Iteris understands that the Town staff have other jobs to perform outside of this project, and want to be as efficient as possible with their time. Thus, project management techniques will be modified to meet the Town's needs.

Essential to the success of this project is the development and adherence to a project schedule that identifies tasks and subtasks, deliverables, and milestones. The schedule must be realistic and include appropriate review times for deliverables, not just by the Town, but by the project partners as well. The project schedule is the foundation for planning the work and working the plan. Iteris' proposed project schedule will complete the design portion of the project within four (4) months from the Notice to Proceed (NTP). We believe strongly that Iteris' Team can meet this schedule without risk to the Town based on our current work on the IDEA project.

Subtask A1. Deliverables

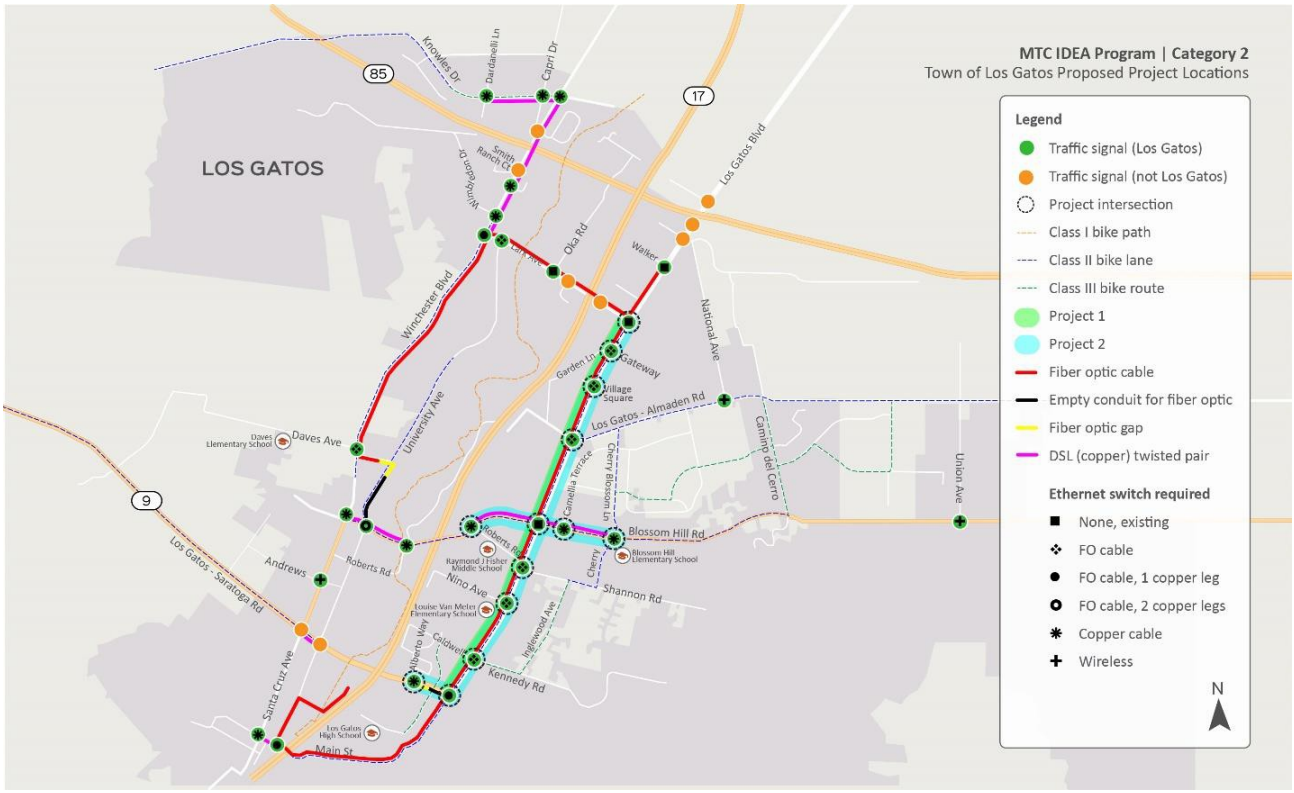
- Meeting agendas
- Draft and Final meeting minutes with action item logs

- Design schedule (Baseline within 5 days of NTP, with updates provided monthly at a minimum)
- ATCS-ATMS System Vendor discussion notes
- Monthly invoices and progress reports

Subtask A2. Communications Design

The installation of an Ethernet-based communications system is needed to both support the ATMS, ATCS and ATSPM system elements deployed throughout this program and serve as the foundation for all future ITS related initiatives going forward. As shown in **Figure 2**, the Town has a number of solid building blocks in place and will use this project to fill in the missing pieces.

Figure 2 – Project Map



The Town of Los Gatos is a partner in the regional Silicon Valley Intelligent Transportation Systems (SV-ITS) program and that program provides fiber optic links along several corridors in the Town. Installed in the early 2000's, this fiber has undergone a few changes over the years. The links listed below will remain in place going forward:

- 12 strand fiber optic cable along Lark Avenue from SR-17 to Los Gatos Boulevard.
- 24 strand fiber optic cable along Los Gatos Boulevard from Lark Avenue to Samaritan Drive-Burton Road.
- 96 strand fiber optic cable along Los Gatos Boulevard from Lark Avenue to the Town of Los Gatos Transportation Management Center.

In addition, the Town of Los Gatos installed a 72 strand fiber optic cable along Lark Avenue from Winchester Boulevard to Los Gatos Boulevard. In the near future the Town will install the following fiber links:

- 96 strand fiber optic cable along Los Gatos Boulevard from Lark Avenue to Samaritan Drive-Burton Road
- 12 strand branch cables at Walker Street/Los Gatos Boulevard, Lark Avenue/Los Gatos Boulevard and Lark Avenue/Oka Road.

Dial-up modem phone drops are used along Los Gatos Boulevard from Los Gatos-Saratoga Avenue to Roberts Road with a phone drop at Roberts Road. Along Los Gatos Boulevard between Blossom Hill Road and Lark Avenue, modems are used in conjunction with a fiber connection from the Field Master to City Hall. Overall, dial-up modem phone drops and SV-ITS fiber optic provide communications linkages to about two-thirds of the city's traffic signals (23 intersections). The remainder intersections have no communications linkages.

The Iteris Team also has a head start on this design element as part of our field work developing the ConOps for the IDEA portion of the project.

Seventy percent of the Town's intersections are currently equipped with twisted copper pair cables that link back to designated intersections with dial-up phone drops while the remaining traffic signals do not have any communications capabilities. When the Town is ready to check signal status, a serial-based field modem is accessed through a dial-up phone call. Four serial-based field modems provide access to dial-up locations.

Iteris will prepare preliminary designs to establish IP-based (Ethernet) communications between all project traffic signals and any equipment needed as part of the ATCS and ATMS systems. As part of preliminary design, Iteris will evaluate existing available copper signal interconnect cable (SIC) pairs and fiber optic strands and determine available SIC pairs and FO strands to use. The infrastructure upgrades anticipated include:

- Replacement of all TS-1 series cabinets with TS-2 series cabinets.
- Replacement of all serial-based field modems with Ethernet-over-Copper switches.
- Installation of fiber optic pull boxes, splice enclosures and lateral cables as needed to link all traffic signal cabinets to nearby fiber trunk lines.
- Installation of approximately 250 feet of new conduit and cable to link Alberto Way/Saratoga Road to the Los Gatos Boulevard fiber trunk line.
- Installation of approximately 1.1 miles of fiber optic cable in existing conduit on Winchester Boulevard between Lark Avenue and Daves Avenue.
- Installation of cellular modems at Blossom Hill Road & Union Avenue, Los Gatos-Almaden Road & National Avenue, and Andrews Street & Santa Cruz Avenue. These traffic signals that are not located near a fiber optic trunk line.

Our communications design will commence with a detailed field inventory of the Town's traffic signal infrastructure. This inventory will support both the Communications Design and the Detailed Design undertaken in subsequent tasks. Building off the IDEA project field inventory of thirteen intersections conducted in the fall of 2018, Iteris will inventory all traffic signal cabinets and pull boxes to ascertain the existing conditions and verify which existing conduit is suitable for reuse. Once complete, Iteris will develop a Communications plan showing the connections of all traffic signals including physical media (fiber, copper, or wireless), required Ethernet switches and standard details for connecting the traffic signal controllers to the Ethernet switches in the cabinet, and provides fiber optic cable splicing diagrams that will be included in the PS&E submittals later in the project. Accompanying the Communications Plan will be a Network Architecture Technical Memorandum that explains the rationale behind the diagrams in the Communications Plan; provides wireless communications recommendations; and assigns IP addresses, subnets and Virtual Local Area Network (VLAN) for each ITS field device in the project. Given this project will be the first large scale Ethernet deployment for the Town's traffic network, Iteris believes thorough documentation of the network architecture is critical to successful initial deployment and ongoing O&M activities.

Subtask A2. Deliverables

- Communications Plan sheets showing connections to all Town traffic signals showing media, Ethernet switches and connection details.
- Network Architecture Technical Memorandum
- Fiber optic cable splicing diagrams.

Subtask A3. Preliminary (35%) Design and Utility Coordination

Leveraging the field inventory completed in Task A2, Iteris will establish and confirm the basis of design in this task. Iteris will prepare appropriate base mapping, at a scale to be discussed and agreed to by Town staff, for design and conduct all research necessary. Base mapping shall consist of digital plans including (but not limited to) all existing roadway features, traffic signal equipment, ADA considerations such as pull box locations near curb ramps, potential need for demolition activities, right-of-way, property lines/ownership information as well as compiling all necessary information for utility facilities while evaluating potential conflicts. Each site investigation shall include reviewing any/all as-built documents. Iteris will also review all existing background information regarding this project including the SE reports written by Iteris, North 40 development project plans and applicable Town and Caltrans standard specifications and details, applicable portions of the California MUTCD and other controlling design standards.

Using the base map, a preliminary (35%) design submittal will be prepared that illustrates a design/layout for the project that is consistent with the project's goals and budget. If necessary, multiple design options will be presented for specific locations along with an order of magnitude cost estimate for the recommended option. The preliminary design shall, at a minimum, include the Town's Standard Cover Sheet and Title Sheet and all plan sheets necessary to show the work included in the cost estimate. All anticipated sheets to be included in the final plan set shall be listed, such as a listing of required details to be included in subsequent submittals. A table of contents for Special Provisions shall be prepared and construction cost estimate will be presented including all anticipated cost items. Finally, permitting requirements will be identified for successful completion of the project.

Upon completion of the 35% Design, Iteris shall submit the plans showing underground work to utility companies as needed for review in accordance with utility requirements. Iteris will prepare all transmittals for signature by Town staff. Collected utility information will be shown on plans as needed when underground work is proposed.

Subtask A3. Deliverables

- Location of visible utilities in the project area.
- Location of property lines and easements within or immediately adjacent to the project area.
- Summary or diagram of existing conditions highlighting any special/potential conditions that may affect the final design.
- Preferred preliminary design.
- Specifications table of contents.
- Order of magnitude cost estimate for review with Town staff.
- Mapping of existing utilities, listing of potential utility conflicts and proposed solutions.

Subtask A4. Right-of-Way Certification

If Right-of-Way certification is required for the project, Iteris shall verify and prepare the appropriate Right-of-Way certification to advance the project to the construction phase in accordance with the Caltrans Local Assistance Procedures Manual. All Right-of-Way lines will be shown on the design and construction documents.
It is anticipated that all project improvements will occur in the public right-of-way and/or existing public utility easements, and no right-of-way will need to be acquired as part of the project.

Subtask A4. Deliverables

- Right-of-Way Certification(s)

Subtask A5. Final Design

Building on the 35% Design, the PS&E documents will be further developed with additional design content/details and requirements to reflect a 65% design level of completion. After the Town comments on the 35% Design submittal, Iteris shall respond and resolve any outstanding issues for the 65% design phase. Comments on the 35% design will be incorporated into the 65% design plans. Iteris will further develop the Specifications with additional details and requirements. At this state a construction schedule representing a 65% level estimate for all remaining portions of the design and project shall be prepared and included. Iteris will develop 65% level estimates of probable construction costs for the project.

The 95% submittal shall address all comments on the 65% submittal and include a fully developed set of contract documents including all plan sheets, Specifications and Special Provisions, details, and other contract documents needed for construction. The 65% plans will then be further developed with additional design details and requirements to complete a fully developed set of plans, Specifications and Special Provisions, details and other contract documents needed for construction. The construction cost estimate shall be finalized and shall include a 10% estimating contingency. The 95% submittal will be essentially complete under the assumption that only minor comments will be needed in the Final stage. Upon completion of the 95% design review submittal by the Town and project stakeholders, Iteris will prepare final contract documents for use in the construction bid process. All contract documents will be signed by a licensed Professional Engineer.

Iteris will provide an electronic copy of the final contract documents, a signed and stamped Mylar copy of the final approved plans, and a hard copy of the final signed, approved and stamped Specifications, Special Provisions and construction cost estimate. The electronic copy of the plans shall be provided as both AutoCAD and Adobe PDF files, and the electronic copy of the specifications and estimate shall be in both Microsoft Word/Excel format and PDF format.

Subtask A5. Deliverables

- 65% Plans, Specifications, Special Provisions and Estimates. Three hard copy sets of half-size (11”x17”) plans and five hard copies of the Specifications, Special Provisions and cost estimates. The electronic copy of the plans shall be provided as both AutoCAD and PDF files, and the electronic copy of the specifications and estimate shall be in both Microsoft Word/Excel format and PDF format.
- 95% Plans, Specifications, Special Provisions and Estimates. Three hard copy sets of half-size (11”x17”) plans, five hard copy sets of full-size (24”x36”) plans and five hard copies of the Specifications, Special Provisions and cost estimates. The electronic copy of the plans shall be provided as both AutoCAD and PDF files, and the electronic copy of the specifications and estimate shall be in both Microsoft Word/Excel format and PDF format.
- Final contract documents. Three hard copy sets of half-size (11”x17”) plans, five hard copy sets of full-size (24”x36”) plans, one D-size (24”x36”) mylar plans and five hard copies of the Specifications, Special Provisions and cost estimates. The electronic copy of the plans shall be provided as both AutoCAD and PDF files, and the electronic copy of the specifications and estimate shall be in both Microsoft Word/Excel format and PDF format.
- Response to comment memorandum (35%, 65% and 95%).

Subtask A6. Construction Phase Authorization

Iteris shall assist the Town in verifying the Request for Authorization to advance the project to construction in accordance with the Caltrans Local Assistance Procedures Manual. If additional work is required, then Iteris will prepare a budget proposal to complete the additional services needed for the Town to obtain authorization to proceed with construction.

Subtask A6. Deliverables

- Authorization from Caltrans to proceed with construction (E-76) (if needed).

TASK B. BID SUPPORT SERVICES

Subtask B1. Bid Services

Iteris will assist the Town during the bidding and contract award phase. Iteris will respond in writing to all bidder inquiries and prepare addenda to the bid documents as needed in a format that can be easily posted online by Town staff. Iteris will update the cost estimates as needed in response to any addenda issued.

Within 10 working days of the bid date, Iteris will prepare and submit a conformed set of contract documents (plans and specifications) that incorporate any and all addenda.

The conformed set will consist of an electronic copy of the final conformed plans, and a hard copy of the final signed, approved, and stamped conformed Specifications, Special Provisions, and cost estimate. The electronic copy of the plans shall be provided as both AutoCAD files and PDF files, and the electronic copy of the specifications and estimate shall be provided in both Microsoft Word/Excel format and PDF format.

Subtask B1. Deliverables

- Responses to questions from bidders.
- Bidder inquiry and response log.
- Addenda as necessary with support information.
- Conformed set of Contract Documents incorporating any and all addenda (one original set for Town printing, plusfive hard copies, and electronic copy in AutoCAD, MS Word/Excel and PDF formats)

TASK C. CONSTRUCTION SUPPORT SERVICES

Subtask C1. Construction Support Services

Iteris will assist the Town in providing support during the construction phase of the Project. Commencing with the Town's issuance of the "Notice to Proceed" (NTP) of the construction contract, Iteris will:

- Review Contractor's submittals, including shop drawings, product data, and samples. In order to allow the contractor to maintain their schedule, Iteris will review all submittals within 5 calendar days.
- Iteris will prepare a written response with the Engineer's review comments for all submittals.
- Respond to RFI from the Contractor and Construction Manager to clarify the contract documents and the design intent. Iteris will provide a written response within 3 working days.
- Review Contractor's proposed substitutions and provide written response for Town's review and approval. Iteris will provide a written response within 3 working days.
- Prepare, review, and recommend approval of construction change orders, if any.

Subtask C1. Deliverables

- Written responses to Contractor's submittals, RFI's, and proposed substitutions.
- Construction contract change orders (if necessary).

3.3 Cost Control and Budgeting Methodology

COST CONTROL METHODOLOGY

Iteris has a resource allocation-based project management system that is geared toward assuring that staff are productive and management is recruiting and training to provide Iteris Project Managers with the appropriate level of staff resources to complete all client commitments. This includes a monthly assessment by each project manager of the status of each project, in terms of progress against objectives, and a forecast of the resources required to complete the project on-time and within budgetary constraints.

The proof of Iteris' ability to develop such resource allocation plans is the fact that the majority of Iteris' business is from repeat clients. They know that Iteris delivers what it promises.

Iteris utilizes an Oracle-based Project Management system through which all costs (labor and direct costs) for each project are recorded and tracked and project managers can monitor the status of their projects on a weekly basis. As a publicly-traded company, Iteris is required to accurately monitor and forecast costs and profits, therefore the accounting system is designed to facilitate such efforts in an accurate and transparent way. The monthly cost-to-complete estimates made by Iteris project managers are used by the management team to balance staff resources and complete projects successfully.

From day one on a project, Iteris project team members are encouraged to keep in mind the desired outcome for each project. This is true for a traffic impact analysis, a multimodal mobility analysis, or development of a set of design plans; staff need to know what the final product is that we are all working to produce. This allows everyone involved in the project to understand what the project deliverables will look like and to work toward that end, with an eye on ways to expedite delivery of that product.

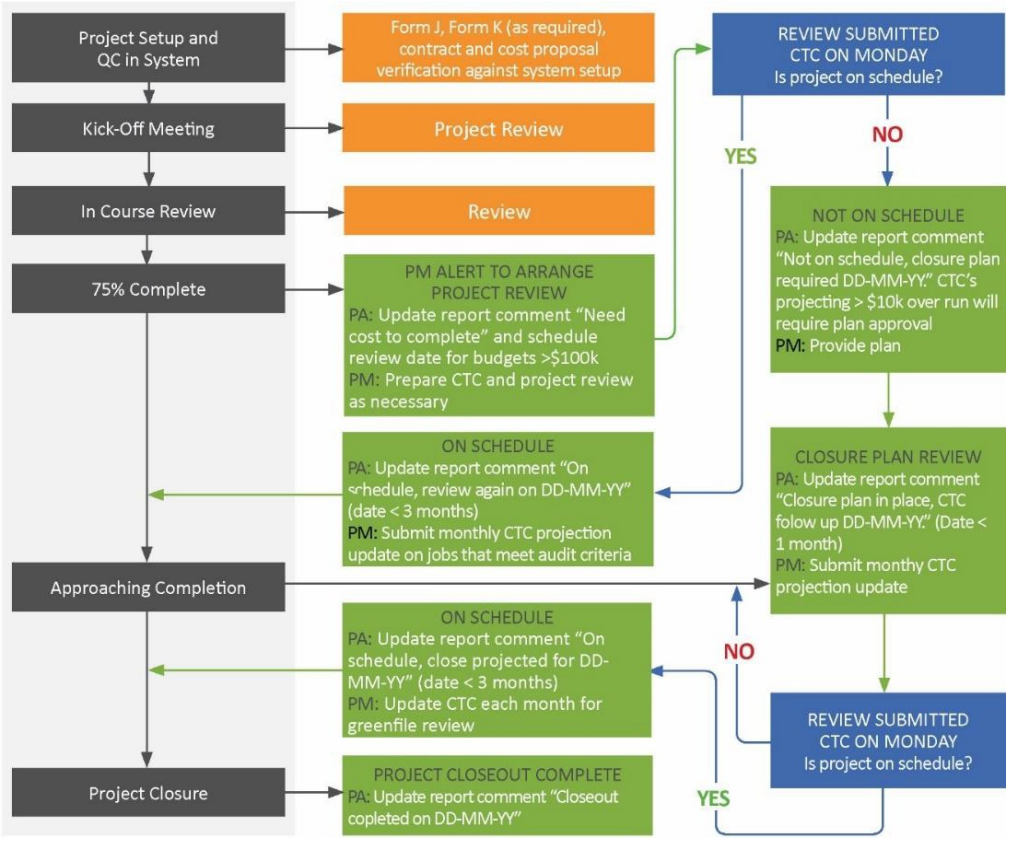
Management Reporting Systems /Tools

Iteris has a history of successful administration of projects. Through many years of experience, Iteris' Project Manager, Richard Shinn, has developed a methodology that has proven effective in measuring progress, anticipating problems, reacting quickly to changes in project requirements, and maintaining schedule integrity. Iteris' project management process is designed with checks and balances that have resulted in our impressive track record of success on similar projects. Our project management objectives are developed to:

- Provide a complete and comprehensive technical description and work definition for the entire project.
- Develop a viable, comprehensive cost and schedule plan that reflects the planned performance of the work.
- Establish a comprehensive control system that provides the necessary status information to the project team, Town of Los Gatos, and Iteris management.
- Identify problem areas early and initiate corrective action.
- Communicate information to the Town on a regular and timely basis.
- Ensure thorough documentation through an effective Quality Assurance/Quality Control process.

Iteris' Project Controls process is shown in **Figure 3.** It is a sequential process of formal project (task order) start, regular review and estimating of cost to complete, with a fixed review point at 75% complete, then project closure.

Figure 3 – Project Controls Process



Performance Monitoring

Monitoring of technical performance, schedules, and costs using a combination of automated and manual techniques provides an early indication of any deviation from planned performance. The earlier a deviation from the plan can be identified, the easier it is to implement the required corrective actions. The following activities are performed to proactively manage projects to ensure timely delivery and budget adherence:

- Monitor and control project activities with respect to schedule performance and analyze the impact of delays and cost alternatives. Actual project performance is periodically compared to planned project performance to identify deviations or areas of concern.
- Facilitate the assessment of work progress in terms of project milestones, work completed, percent in process, and dependence on future project tasks. The Iteris Project Manager will frequently hold informal discussions with the Town's Project Manager on specific tasks in addition to the regularly scheduled project team meetings. The designated Iteris Project Manager has extensive experience working with multiple agencies and has proven track record of completing projects on schedule and within budget.

For projects with subcontractors, development and tracking of subcontractor progress on their scopes of work begins with the execution of well-defined subcontract that clearly defines the roles and responsibilities of the subcontractor. Specific task responsibilities, deliverables, schedule and estimated levels of effort for each task will be agreed to prior to the initiation of work so they are no ambiguities as to the roles and responsibilities of team members. Iteris upper-level management is committed to:

- Maintaining a proper environment for the successful execution of the project
- Providing the Iteris Project Manager with adequate resources
- Monitoring the effectiveness of the Iteris Project Manager and the project team

Internal management review meetings are held monthly for each project. Current status is reviewed against the current project schedule and, most importantly, changes from baselines reported in the previous management review meeting are noted.

Monthly Progress Reports

The Iteris Project Manager will submit a monthly written progress report to the Town. In this report, the Iteris Project Manager will discuss activities conducted during the reporting period (typically the previous calendar month) as well as a look at anticipated activities for the upcoming reporting period. The monthly progress report will provide the data necessary to track the progress of the work plan, in terms of budget and schedule adherence, and will forecast future expenditures and deliverable dates. Typical subjects covered in the monthly progress report include:

- Summary of activities during the month
- Planned activities for the next month
- Concerns or problems encountered and planned solutions
- Up-to-date project schedule
- Status of subcontractors
- Status of open and closed items
- Status of deliverables
- Forecast of cost to complete
- Documentation changes to the Scope of Work

BUDGETING/RESOURCE ALLOCATION METHODOLOGY

At the outset of each project and task, Iteris project managers put together an outline of what the project or task deliverable will look like. This could be an outline of a final report or a list of design plans. The benefit of this approach to project delivery is that it allows the project team to develop pieces of the final deliverable as the project proceeds, rather than waiting to the end to begin to package work products. Iteris Project Managers are also trained to look for opportunities to expedite review and approval of interim products during the course of a

project. This could be the Existing Conditions/Setting section of a traffic study, or the base mapping upon which design plans will be prepared. This also includes documentation and confirmation of important decisions made on a project as work progresses. Meeting minutes are also carefully prepared and reviewed at each meeting to document decisions that have been reached with client and reviewing agency staffs to keep projects moving forward and to avoid revisiting settled issues.

An important technique to insure seamless review of work products by reviewing agencies is to make sure that they know what's coming and when. This means giving them adequate time to prepare for anticipated reviews of project deliverables and giving them an estimate of the magnitude of the product that will need to be reviewed. Providing early drafts of sections or pieces of a design package can also expedite review of the complete package.

Iteris always offers and encourages a meeting with reviewing agency staff to walk them through the submittal package. This helps the reviewing agency staff to know what they are being asked to look at and alerts them to any known outstanding items, prior to them pausing a review because something may be unresolved missing. Understanding each review cycle is a key to conducting it in a timely fashion. Iteris staff are always available to meet with agency reviewers during the review process to answer questions or clarify items in the review package. For subsequent review submittals, following an initial review, Iteris is always careful to document previous comments and responses to those comments. This directs the reviewing agency staff to those specific items within a re-submittal and avoids opening up the entire package to a re-review.

Table 1 summarizes the hours allocated per task/subtask by each Iteris staff member.

Table 1 – Resource Allocation Table

		STAFF & HOURS ALLOCATED PER TASK							
TASKS		Richard Shinn	David Huynh, PE	Matt Wages, PE	Monique Fuhrman, PE	Tuan Nguyen, CCDP, CCNP, CCNA	Kassra Rafiee, EIT	Admin	TOTAL HOURS PER TASK
A	**Design Services**								
A1	Project Management	16						**16**	**32**
A2	Communications Design	**16**	**2**	**4**		**8**	**4**		**34**
A3	35% Design and Utility Coordination	12		**40**	**48**		**80**		**180**
A4	Right-of-Way Certification				8		8		**16**
A5	Final Design								
	65% Submittal	**16**	**4**	**40**	**48**		**80**		**188**
	95% Submittal	**8**	**4**	**20**	**24**		**40**		**96**
	Final Contract Documents	**4**	**4**	**8**	**24**		**20**		**48**
A6	Construction Phase Authorization	**4**		**8**	**8**		**8**		**28**
B	**Bid Support Services**								
B1	Bid Services	**4**	**2**	**4**	**4**		**4**		**18**
C	**Construction Support Services**								
C1	Construction Support Services	**16**	**4**	**16**	**16**		**16**		**68**
	TOTAL HOURS	**96**	**20**	**140**	**168**	**8**	**260**	**16**	**708**

3.4 Responses

A) CRITICAL ENGINEERING DESIGN ISSUES

Overall, Iteris views this project as being very straight-forward. At a high level, this project is focused on modifying and enhancing the Town's existing communications and traffic signal infrastructure to support a new ATMS, an adaptive system, and ATSPM system. However, there are a few design issues that warrant close attention.

- **Ethernet Network Setup:** As mentioned previously, this project is the first major deployment of Ethernet communications protocols in the Town's traffic system. Developing an IP addressing scheme, subnet assignments and Virtual Local Area Network (VLAN) scheme that scales to meet the Town's current and future transportation needs. Iteris has included these activities in Task A.2 – Communications Design. Iteris will develop a high level network architecture as well as specific Ethernet configuration assignments (IP address, subnet and VLAN) for every IP addressable device included in the project. We will work with Town traffic engineering and IT staff to ensure these assignments fit into the Town's overall network architecture. This will allow the Town to easily and seamlessly expand their traffic network to support additional types and quantities of field devices in the future.
- **Traffic Signal Cabinet Selection:** Based on our various IDEA project meetings with Town staff, it is our understanding the Town plans on deploying TS-2 controllers and cabinets. This will result in all but six traffic signals receiving a new cabinet. Iteris intends to reuse as many cabinet foundations as possible in order to conserve costs.
- **Construction Schedule:** Iteris understands the Town's goal is to advertise this project for construction by mid-October 2020. In order to meet this schedule, Iteris will leverage our in-depth knowledge of this entire program. Our design efforts will be extremely efficient and focused entirely on producing a reliable network that will support the needs of the Town's limited staffing resources.

B) CRITICAL ENVIRONMENTAL ISSUES

It is our understanding that this project is Categorically Exempt and therefore does not anticipate there to be any environmental issues.

C) MINIMIZING PROJECT COST AND SCHEDULE

In addition to applying the cost control and budgeting methodologies described earlier, the following strategies will be utilized to minimize the cost and schedule for this particular project.

Iteris assembled a team of Engineers that with expertise in Ethernet based ITS communication systems. Iteris has a wealth of hands-on integration experience where we implement and deploy the elements in our design package. This allows us to apply lessons learned to make subsequent design and integration projects more efficient and cost effective for our public agency clients. Iteris continues to innovate in the communication system design with the latest technologies as well as innovate in the design plans improving the level of information and detail placed on engineering plans to eliminate change orders during construction.

- **Leverage Past Field Work:** Iteris staff conducted detailed inventories of the thirteen traffic signals included in the IDEA program portion of this project. While we will visit these traffic signals a second time as part of this project, we expect the field work to be completed faster. We will be updating the documentation at approximately 40% of the traffic signals versus documenting them for the first time. As a result, Task A.3 – Preliminary (35%) Design and Utility Coordination will be completed in 30 working days instead of the maximum two months listed in the RFP.

- **Leverage Familiarity with the Town:** In addition to completing a sizable portion of the field work previously, Iteris will leverage our past working experience with Town staff to produce a design that meets or exceeds the Town's expectations. Through our IDEA program SE work the Town made it abundantly clear they wanted an advanced system that are reliable and easy to use. The Town's traffic engineering staff is limited in number and assigned a myriad of responsibilities. To that end, our focus will be to provide a modern, reliable and low maintenance traffic signal network that will support deploying advanced ITS and Smart City strategies well into the future.
- **Complete Tasks A2 and A3 in Parallel:** The Communications Design and Preliminary (35%) Design & Utility Coordination tasks will be commence immediately upon NTP. These two tasks do not overlap and feed into Task A.5 – Final Design. Performing these two tasks in parallel will save 10 working days from the project.
- **Network Architecture Integration:** By developing the detailed design based on the network architecture will result in a smoother construction and system integration phases of the project.

ITERIS' RESPONSES TO QUESTIONS

1. **Iteris' Response**: Iteris has summarized the requested information in the following tables:

Table 1 – Current and Pending Projects of Key Personnel (May 2020 to July 2020)

A.	B.	C.	D.	E.	F.
Rich Shinn Project Manager, Task Leader – A2, B1 and B2	12%	48%	Webster – Posey Tube Fiber Design (5%)	Los Gatos ATCS-ATMS Project (6%) Fashion Island System Integration Project (5%)	35%
David Huynh, PE Quality Control/Quality Assurance	1%	49%	I-880 ICM System Integrator (20%)	Los Gatos ATCS-ATMS Project (1%) San Jose ATSPM Project (5%)	35%
Matt Wages PE Task Leader - A3 and A5	16%	56%	I-880 ICM System Integrator (20%)	Los Gatos ATCS-ATMS Project (8%) San Jose ATSPM Project (5%)	25%
Monique Fuhrman, PE Task Leader - A4 and A6	20%	42%	Webster – Posey Tube Fiber Design (10%) Ridgeline HS Signal Design (5%)	Los Gatos ATCS-ATMS Project (10%) MTC 511/Express Lanes Ops Center (25%)	15%
Kassra Rafiee Project Engineer	33%	32%	I-880 ICM System Integrator (20%) Ridgeline HS Signal Design (5%)	Los Gatos ATCS-ATMS Project (16.5%) San Jose ATSPM Project (15%)	1%

Table 2 – Current and Pending Projects of Key Personnel (August 2020 to June 2021)

A.	B.	C.	D.	E.	F.
Rich Shinn Project Manager, Task Leader – A2, B1 and B2	2%	35%	Webster – Posey Tube Fiber Design (5%)	Los Gatos ATCS-ATMS Project (1%) Fashion Island System Integration Project (5%)	35%
David Huynh, PE Quality Control/Quality Assurance	1%	40%	I-880 ICM System Integrator (20%)	Los Gatos ATCS-ATMS Project (1%)	35%
Matt Wages PE Task Leader - A3 and A5	3%	30%	I-880 ICM System Integrator (20%)	Los Gatos ATCS-ATMS Project (1.5%) San Jose ATSPM Project (10%)	25%
Monique Fuhrman, PE Task Leader - A4 and A6	3%	20%	Webster – Posey Tube Fiber Design (5%)	Los Gatos ATCS-ATMS Project (1.5%) MTC 511/Express Lanes Ops Center (25%)	15%
Kassra Rafiee Project Engineer	4%	40%	I-880 ICM System Integrator (20%)	Los Gatos ATCS-ATMS Project (2%) San Jose ATSPM Project (15%)	1%

2. Iteris' Response: In assessing an existing traffic signal controller cabinet, and our subsequent recommendations for whether the cabinet needs to be replaced, we generally evaluate 1) the physical condition of the cabinet, 2) the standards that the cabinet was built to, and 3) the ability of the cabinet to accommodate and support the proposed project improvements. Each of these is described in detail below:

- Physical Condition – Our assessment starts with an evaluation of the physical condition of the overall cabinet shell, looking for signs of damage, dents, and rust. While most dents may be superficial and cosmetic, we look for dents that may impact or compromise the internal components of the cabinet, such as a dent that may be pushing up against the load bay or stretching or crimping internal wiring. When it comes to rust, we especially look for signs of rust in the cabinet flange where it is bolted to the foundation. We find that flanges that have deteriorated due to rust is very common and have led to the cabinet no longer being properly secured to the foundation.
- Standards – Our next assessment looks at the standards in which the cabinet was built. Based on our field work thus far, the Town primarily uses cabinets built on the NEMA standards. Cabinets built based on the current NEMA TS-2 tends to be newer and in good shape. Our focus will be on cabinets built based on the older NEMA TS-1 standard (the previous standard). These cabinets will tend to have more issues related to upkeep and maintenance as it may be difficult to find replacement parts and components. In particular, older cabinets that were built with using a printed-circuit (PC) board load bay are very difficult to maintain and repair in the event of a failure as PC load bays are no longer made. We would recommend any cabinet with a PC load bay be the first priority for replacement. Given this, we still do find that some TS-1 cabinets remain in very good condition and do not need to be replaced. This will be a discussion with the Town as to whether the Town would like all NEMA TS-1 cabinets to be upgraded to NEMA TS-2, as dictated by available project budget.
- Ability to Accommodate Proposed Project Improvements – Finally, and most importantly, is our assessment of the existing cabinet's ability to accommodate the additional components and equipment that would be installed as part of this project's improvements. For example, with the project's implementation of adaptive and ATSPM, the ability for the existing cabinet to support the more robust detection requirements of these systems will be critical. A constraint of NEMA TS-1 cabinets is that by default, they only support 16 channels of detection, which may not be adequate. While there are ways around this (such as by utilizing an SDLC connection when using video detection) that we will assess for, this may sometimes not be feasible. Based on our experience on other projects, we sometimes find that replacing an old NEMA TS-1 cabinet with a newer TS-2, while more costly initially, results in an overall savings in the end when trying to integrate new technology into an old cabinet. Also, we would assess the physical space within the cabinet to ensure any additional equipment (i.e., switches, fiber terminal panels, additional detection, etc.) can fit within the available space. Given that the City uses Type P sized cabinets, this is not likely to be an issue.

Iteris has done this exact work on two recent projects for Daly City as part their Traffic Management System upgrade (which is almost identical in scope to this project) and for AC Transit as part of the Line 97 Transit Priority Initiative (which also had a few project components similar to this project). For the Los Gatos IDEA Category #2 Systems Engineering project we followed the same process for 13 of the Town's intersections. The Attachment following Iteris' responses provides the inventory sheets for a few of these intersections.

3. Iteris' Response: In the event that Rich Shinn became unavailable to serve as the Project Manager (PM), then David Huynh would assume all of Rich's duties. Similarly, If Matt Wages and Monique Fuhrman would assume the other's duties in the event one of them were unable to lead their assigned tasks. Their availability is provided in the response to Question #1. All resumes have been included with our original proposal.

4. Iteris' Response: As discussed on page 14 of our proposal, the communications design will commence with a detailed field inventory of the Town's traffic signal infrastructure. This inventory will support both the Communications Design and the Detailed Design undertaken in subsequent tasks. Building off the IDEA project field inventory of thirteen intersections conducted in the fall of 2018, Iteris will inventory all traffic signal cabinets and pull boxes to ascertain the existing conditions and verify which existing conduit is suitable for reuse. Once complete, Iteris will develop a Communications plan showing the connections of all traffic signals including physical media (fiber, copper, or wireless), required Ethernet switches and standard details for connecting the traffic signal

controllers to the Ethernet switches in the cabinet, and provides fiber optic cable splicing diagrams that will be included in the PS&E submittals later in the project. Accompanying the Communications Plan will be a Network Architecture Technical Memorandum that explains the rationale behind the diagrams in the Communications Plan; provides wireless communications recommendations; and assigns IP addresses, subnets and Virtual Local Area Network (VLAN) for each ITS field device in the project. A key decision to be made will be determining how the traffic network will interface with the Town's Wide Area Network. This will impact the actual IP address and VLAN assignments. Integrating the traffic and Town WAN could also subject the traffic network to the Town IT department's security policies and practices.

The Task A.2 deliverables include Communications Plan sheets showing connections to all Town traffic signals showing the physical media, Ethernet switches and connection details; Network Architecture Technical Memorandum; and fiber optic cable splicing diagrams. Given this project will be the first large scale Ethernet deployment for the Town's traffic network, Iteris believes thorough documentation of the network architecture is critical to successful initial deployment and ongoing O&M activities.

Our approach for designing the fiber optic and copper cable network will be to transform the network from supporting serial communications protocols to Ethernet protocols in a manner that provides as much redundancy as practical given the Town's budget constraints. From a practical viewpoint, this translates to connecting each traffic signal in a drop-and-repeat configuration and striving to establish a ring topology with multiple links between the signals on the east and west of SR17. The existing fiber connection on Lark Avenue between Winchester Boulevard and Los Gatos Boulevard. A second link across SR17 is in place on the southern end of town where Main Street intersects with Santa Cruz Avenue. A ring could be completed by either deploying Town-owned 5.9 GHz license-free Ethernet radios on Santa Cruz Avenue between Main Street and Blossom Hill Road or deploying those same type of radios to cross SR17 at Blossom Hill Road. A wireless site survey will be conducted to determine the best option.

In terms of fiber optic and copper cable requirements, Iteris recommends deploying 96 strand fiber trunk cables along with 12 strand lateral cables that will connect an Edge Ethernet switch residing in each traffic controller cabinet to the network. This architecture can be implemented using as few as two strands of fiber trunk cable and four strands of fiber lateral cable. On the copper cable side, Generally speaking, Iteris has found that 24 AWG cable or thicker performs best in arterial ITS deployments such as this project. However utilizing SHDSL based Ethernet-over-Copper switches allows for a margin of error in the event thinner copper cable is already in place.

Concerning the high-resolution controller data needed to support the Town's ATSPM solution, controller data does not require significant amounts of bandwidth at all. It typically requires less than 50 Kbps compared to 1 Mbps – 2 Mbps for CCTV cameras. While not needed to support the Town's ATSPM system, latency is critical for adaptive traffic control systems. Latency is defined as the time it takes for a data packet to travel from origin to destination. Adaptive traffic control system typically requires once per second communications between the controller and the server. This translates to designating traffic controller data as the highest priority traffic on an Ethernet network with rock solid connections and redundancies built in to compensate for any communications outages.

5. Iteris' Response: Our approach to cellular/wireless design in this project is to be as practical as possible. Given the hilly terrain east of SR17, Iteris recommends deploying cellular modems at Union Ave/Blossom Hill Road and National Ave/Los Gatos-Almaden Road. For these locations the wireless modem will be placed in the controller cabinet and will be connected to an antenna attached to the outside of the cabinet. Iteris recommends placing these devices in a network segment that is designated by the provider as private to the Town of Los Gatos. This will ensure that none of the data goes onto the public internet. As part of our design effort, Iteris will work with the Town's IT department to obtain pricing from the Town's preferred provider and include the details of the modem, antenna and mounting instructions into the applicable portions of the PS&E submittal. Iteris will also work with Town staff to quantify the expected recurring monthly charges which are expected to be between $50 and $75 per location. In our experience on similar projects, the agency's IT department and finance department typically handles the communications provider's billing and maintenance issues. The Public Works department will need to coordinate with these entities going forward after construction is completed.

As discussed in our response to Question #4, Iteris recommends a detailed evaluation of Town-owned 5.9GHz Ethernet radios on Santa Cruz Avenue between Main Street and Blossom Hill Road. A preliminary review of the topology of this segment is encouraging and worthy of a detailed site survey. Establishing wireless communications in this segment will improve the redundancy of the entire network and provide communications for the third location designated for wireless communications in the RFP, Andrews Street/Winchester Boulevard. At a high level our design will entail a radio mounted on a traffic signal pole or in close proximity to the controller cabinet. The radio and antenna will be mounted on a traffic signal pole in close proximity to the traffic signal cabinet.

When evaluating Ethernet switches, Iteris seeks to select or recommend a product(s) that meet or exceed the project's needs and requirements. From a network technology perspective, factors to be considered include: number of autosensing fiber ports that can support 10/100/1000 Mbps fiber connections, number of copper twisted pairs supported for backbone Ethernet communications, and the number of copper Ethernet ports (i.e. RJ-45 ports) at 10/100/1000 Mbps for local edge communications. The IEEE 802 LAN/MAN Standards Committee develops and maintains networking standards for local, metropolitan and other networks. While there is not sufficient space to explain the multitude of IEEE 802 standards, there are a few that are critical for projects like this. These include 1) IEEE 802.1Q which supports the ability to separate and prioritize different types of network traffic such as controller data and CCTV video through the creation of Virtual Local Area Networks (VLAN), 2) Internet Group Management Protocol (IGMP) Snooping which is used in conjunction with VLAN's to ensure network elements receive only the data packets of interest thereby reducing the chances of broadcast storms and optimizing available bandwidth, 3) support for Simple Network Management Protocol (SNMP) version 3 which is used for network elements such as switches and routers to exchange information and monitor the health of network, and 4) support for Spanning Tree Protocol (IEEE 802.1D) (or other vendor proprietary redundancy protocol) by controlling the use of redundant links in order to prevent data loops that can cripple a network.

Specific to Ethernet-over-Copper Ethernet switches, Iteris prefers to utilize switches that employ Single-pair High Speed Digital Subscriber Line (SHDSL) protocols due to its ability to bond multiple pairs of copper together to form a single high speed link and its ability to successfully operate with lower quality copper cable due to its relatively low carrier frequency when compared to the other protocols such as VDSL. Very high Digital Subscriber Line (VDSL) protocols do not support bonding multiple copper pairs into a single communications link and operate at a higher carrier frequency leaving users limited to a shorter operating range and the bandwidth generated by a single copper pair.

An overarching requirement for all ITS field devices is their ability to meet the - NEMA TS2 standards. In particular, operating at a temperature range of -34°C to +74°C with a relative non-condensing humidity that meets or exceeds 18 to 95% humidity over the temperature range.

Understanding the Town's preference for simplicity and ease of operations, standardizing on Ethernet switches from a single manufacturer will allow Town staff to be trained on only one manufacturer's equipment.

In terms of experience with similar deployments, Iteris has been at the forefront of converting ITS networks such as Los Gatos from serial based to Ethernet for over 15 years. What differentiates Iteris from our competition is our proven track record of sustained performance across the full project spectrum from high level planning to detailed design to 'hands-on' configuration and deployment of the actual network gear and ongoing Operations & Maintenance. Our firm has deployed thousands of field hardened Ethernet switches across the country. Our PM has over 20 years of experience in IT management. Among his many projects in this technical area is the San Mateo County Smart Corridor where he oversaw the deployment of approximately 1,000 Ethernet enabled field devices and is currently overseeing the entire system as an extension of C/CAG staff.

6. Iteris' Response: The following are the plan sheets anticipated for this project: Title Sheet; General Notes and Abbreviations; Construction Notes; Index Map; Table of Intersections; Signal Modification (1:20), 1 sheet per signal; Communication Plans (SIC and Fiber Optic) (1:40), 5-6 sheets; Communications (Wireless), 1 sheet; Communication Schematics. 1-2 sheets; Fiber Optic Splicing Diagrams, 3-5 sheets; Signal Interconnect Termination Diagrams, 3-5 sheets; and Details Sheet (fiber optic pull box, equipment mounting, etc.), 1-2 sheets.

7. Iteris' Response: We anticipate the key issues to resolve during design will be related to the communications infrastructure, particularly verifying the condition and understanding any constraints of the existing signal interconnect (SIC) and fiber optic (FO) cables.

- SIC – As part of the conversion to an IP-based (Ethernet) communications to signals, Ethernet-over-copper devices will be deployed to leverage the use of this existing SIC infrastructure. To the extent possible, our design plans to utilize any existing SIC as a project cost savings measure. In order to do so, we have to verify that the existing SIC is in good working order. This means verifying that the SIC cable runs continuously between signal cabinets with no breaks and also verifying that all conductor pairs within the cable are in working order. Since the Ethernet-over-copper devices allows the bonding of multiple pairs of SIC conductors, we want to leverage this and bond together as many pairs (up to 4 pairs) as possible to maximize communications bandwidth. As part of the verification, in addition to visual inspections, we would want to perform an end-to-end tone test on each individual SIC conductor to verify that each conductor is continuous and in working order. We did this exact work on our project in Daly City and found a couple of instances where the SIC was indeed not continuous and thus not in working order to utilize (in once instance, we suspect there was a break as a result of new sidewalk work related to construction of a new development). At that point, we discussed this finding with City staff and proposed alternatives. In this example, it was decided that a point-to-point wireless Ethernet radio system was the best solution to bridge the broken gap in the SIC. Catching this and resolving it during the design is obviously preferable to the Contractor discovering this during construction which would have resulted in delays and contract change orders.

- FO – Similar to the SIC, understanding the condition of the existing FO cables will be important as this project intends to utilize this existing asset. This includes understanding what strands are currently being used and how existing splices are made and routed. Knowing this will inform our design in terms of providing logical strand assignments that will make it easier to maintain and expand the use of the fiber optic network in the future. We also need to determine where existing fiber optic splice closures are located in the field as part of the design to intercept existing the FO cable with laterals. For example, it may be that an existing splice closure cannot accept any additional entry FO cable and would need to be upsized. Our design would also need to account for situations where an existing FO cable needs to be intercepted but lacks the coil length to perform the required splicing work to a lateral.

8. Iteris' Response: In our proposal, our Cover Letter discussed three of our team's advantages. These include an established relationship with Town staff, familiarity with Los Gatos' IDEA program and design engineers that know network design. Richard Shinn and David Huynh have been working with Town staff, W-Trans and MTC on the Town's IDEA program for the last 26 months beginning with the technical evaluation of the Town's IDEA program application on behalf of MTC. Our involvement has continued through Systems Engineering process where we have worked with the project stakeholders to develop several SE documents including a Needs Assessment, Concept of Operations, System Requirements, Verification Plan and input to the RFP's that will select the ATCS, ATSPM and VBD/BSP systems that will utilizing the infrastructure to be designed in this project. Our staff have observed school dismissal along Los Gatos Boulevard and seen the extremely large number of bicyclists that flood the corridor. We have conducted detailed inventories of the 13 traffic controller cabinets included in the IDEA program. This accounts for roughly 42% of the Town's traffic signals.

We know how important it is for the Town to deploy a system that not only meets or exceeds the IDEA program goals and objectives but does so in a manner that does not place an undue burden on the Town's extremely busy traffic engineering and maintenance staff. To make that happen, our team will design and architect a rock solid ITS field network that will support the four systems being deployed currently but also easily support future transportation technology solutions. Projects like this are the foundation of Iteris' consulting practice. We look forward to the opportunity to continue serving the Town of Los Gatos.

EXHIBIT B – SCHEDULE

8. COST PROPOSAL

Table 2 provides detailed rates by task for all team members that will be assigned to this project.

Table 2 – Cost Proposal

TASK	Rich Shinn	David Huynh, PE	Matt Wages, PE	Monique Fuhrman, PE	Tuan Nguyen, CCDP, CCNP, CCNA	Kassra Rafiee, EIT	Admin	HOURS/ QUANT.	LABOR COST	ODC	TOTAL
Rates	*$285.00*	*$285.00*	*$240.00*	*$195.00*	*$185.00*	*$115.00*	*$115.00*				
A1. Project Management	16						16	32	$6,400	$250	$6,650
A2. Communications Design	16	2	4		8	4		34	$8,030		$8,030
A3. 35% Design & Utility Coordination	12		40	48		80		180	$31,580	$1,000	$32,580
A4. Right-of-Way Certification				8		8		16	$2,480		$2,480
A5. Final Design								0	$0		$0
65% Submittal	16	4	40	48		80		188	$33,860	$500	$34,360
95% Submittal	8	4	20	24		40		96	$17,500	$250	$17,750
Final Contract Documents	4	4	8	12		20		48	$8,840		$8,840
A6. Construction Phase Authorization	4		8	8		8		28	$5,540		$5,540
B1. Bid Services	4	2	4	4		4		18	$3,910	$250	$4,160
C1. Construction Support Services	16	4	16	16		16		68	$14,500	$500	$15,000
TOTAL	**96**	**20**	**140**	**168**	**8**	**260**	**16**	**708**	**$132,640**	**$2,750**	**$135,390**

Standard Terms and Conditions

- Billings will be monthly at the individual Categories and Maximum Rates for the persons actually performing the work during the performance period and are subject to annual adjustments.
- An escalation of 4% will apply to the rates above effective June 1 of each year.
- Expenses will be billed at cost plus 10% for services and handling. Expenses include project-related costs, such as subcontractor services, traffic counts, postage/delivery service, reproduction, transportation, and subsistence.
- All mileage rates will be based upon current IRS standard rates.