TASK ORDER NO. 1
UNDER

AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES
DATED SEPTEMBER 29th, 2016

BETWEEN

THE CITY OF LANCASTER, "OWNER"
AND
ADVANTEC CONSULTING ENGINEERS INC., "CONSULTANT"

PROJECT TITLE:	**Design Services for PWCP No. 16-001, Traffic Signal System Modernization and North County ITS Expansion Projects**
PROJECT DESCRIPTION:	Provide System Management, Design Service, Construction Management and general oversight of the combined two projects for upgrading traffic signal communications and signal control equipment.
SCOPE OF WORK:	Per Attached Exhibit "1", Scope of Services
PERIOD OF SERVICES:	Per Attached Exhibit "2", Schedule
COMPENSATION FOR SERVICES:	Per Fee Schedule - Not to Exceed $419,293.60

"OWNER"	"CONSULTANT"
CITY OF LANCASTER	ADVANTEC CONSULTING ENGINEERS INC.
By _____	By _____
Jeff Hogan	Leo Lee
Development Services Director	CEO
Date _____	Date _____

Task 1 – Provide System Management, Design Services, Construction Management and general oversight of the Central Traffic Signal System Upgrade project

Background

The City of Lancaster, in partnership with the City of Palmdale, has received grant funds for the North County Traffic Forum ITS Expansion Project (City of Palmdale Agreement No. A-3752, LACMTA Call for Projects ID#CFP F1300, FTIP # LAF1300

The scope of the project within the City of Lancaster includes: the upgrade of the City's Central Traffic Control Management Software; connection to the Los Angeles County Information Exchange Network (IEN); installation of new traffic signal controllers; upgrade communications equipment and connections between communications hubs and fiber optics ring/backbone to Ethernet protocol.

The deadline for use of the METRO funds is June 2018.

Task 1.1 - Systems Management

The ADVANTEC Team will:

1. Coordinate with and monitor the progress of implementation of ATMS, including setup, installation, system integration, testing and commissioning. Ensure that all functional requirements defined in the "System Requirements" document are properly met and implemented.
2. Review and approve shop drawings, acceptance test plans, commissioning schedule, training agenda, and other documentations provided by ATMS vendor.

3. Participate in the acceptance testing to verify that the system and functional requirements are met.

System Acceptance Test (SAT)

The System Acceptance Test (SAT) activities shall begin after installation of field and TMC hardware/software has been successfully completed. The SAT activities shall verify all operational, functional and performance specifications. At a minimum, the SAT shall verify that all requirements listed in the specifications are satisfied. The acceptance test procedures shall follow the test plan submitted by Intelight and approved by the Systems Manager and the City.

Task 1.2 - Design Services

Task 1.2.1 - Project Management, Project Coordination, and Meetings Attendance

The ADVANTEC Team will provide Project Management activities through all the aspects of the project. The ADVANTEC Team will prepare a detailed Work Plan, Project Schedule, and prepare progress reports. The ADVANTEC Team will prepare all necessary document and certification as required by Metro ITS Program.

The ADVANTEC Team will attend the project kick-off meeting and meetings with the City and others as directed by the City to discuss specific information, action items, project constraints, project requirements, etc. Meetings will also consist of any specific meeting called by the City, or other agencies, at which Consultant's attendance is requested. It is recommended that in the early stages of the

preliminary engineering phase, the ADVANTEC Team and City staff conduct bi-weekly meetings in order to provide a continuous dialogue and develop a team relationship for the success of this project. The ADVANTEC Team will prepare and distribute meeting agendas, meeting minutes, and an action item matrix to the project team as appropriate.

Deliverables: Project Management, Project Coordination, and Meetings Attendance

Task 1.2.2 - Data Collection and Existing System Inventory

Project Locations - The ADVANTEC Team will conduct data collection and system inventory of existing fiber optics ring/backbone, at and between communication hubs, City Hall, and Maintenance Yard Building.

Data Collection - The ADVANTEC Team will obtain all existing reference documentation from the City, including improvement plans (street, traffic signals, signal communications), aerial photographs, right-of-way information and other applicable data.

Existing System Inventory - The inventory will also include projects currently underway or planned projects by the City. The field review for each location will document location of existing cabinets, associated equipment and communication system, and to verify potential locations where new cabinets, pull boxes, and splice vaults may be installed. In addition, a thorough investigation and evaluation of the communication hardware/software at the communication hubs, City Hall, and Maintenance Yard building, and other facilities where future connections may be anticipated. Field notes and a photo log of communication hubs, City Hall and Maintenance Yard building other proposed communication facility will be maintained.

Assessment of Existing Fiber Optic Cable - The ADVANTEC Team will determine number and location of existing fiber optic cables, number of fiber strands, and availability of dark fiber between communication hubs, City Hall and Maintenance Yard.

Existing Inventory Project Report – A Technical Memorandum Report will be provided to the City. The report will summarize existing system inventory and evaluation, findings and deficiencies at communication hubs, City Hall, other locations, and communication systems. Graphics, photos, citywide system map, and field notes will be included.

Deliverables: Data Collection, Existing System Inventory, Memorandum Report

Task 1.2.3 - Review of Transportation Communications Master Plan

ADVANTEC Team will review the Transportation Communications Master Plan prepared in 2008, and identify revisions to master plan recommendations based on new technologies available today. We will also identify opportunities to integrate new ITS technologies and introduce “Smart City” elements. ADVANTEC Team will meet with City’s staff from Traffic and IT departments to discuss City’s vision for the communications system.

ADVANTEC will prepare a Technical Memorandum identifying updated recommendations to the Transportation Communications Master Plan

Deliverables: Technical Memorandum with recommendations to the Transportation Communications Master Plan

Task 1.2.4 - Communication System Architecture and Preliminary Engineer's Estimates

The ADVANTEC Team will develop a system level architecture for entire traffic communications network. We will meet with City's Traffic and IT department to define or take into consideration any citywide networking architecture already in place. System Architecture will indicate detailed communication requirements for the network field devices (Ethernet switches), hub locations, City Hall, and City Maintenance Yard Building. It will include the City's recommended ITS architecture. The ADVANTEC Team will identify the recommended technologies at each intersection, hub(s), City Hall, City Maintenance Yard Building, and additional buildings, based on recommendations developed. Recommendations for future deployments of adaptive control system, Monitoring Systems (Travel Times, Volumes, Occupancy, Speeds), CCTV systems, DMS systems, and other ITS field elements will be included. It will also include a design guideline for communication deployment. A communication corridor system architecture exhibit showing proposed and future communications systems will be included. The exhibit will show locations of existing and proposed hubs, conduit/communication alignments, and other future ITS elements.

The ADVANTEC Team will prepare a Preliminary Engineer's Estimates to verify that the proposed improvements meet the project's allocated budget.

Deliverables: Communications System Architecture
Preliminary Engineer's Estimates

Task 1.2.5 - Utility Coordination

Although this project does not interfere with existing conduit and fiber optic cables, it is important to ascertain locations of conflicting utilities near pullboxes and hubs.

Utility notifications to the various utility owners within the sphere of the Project will be prepared using City's letterhead. The ADVANTEC Team will request locations for existing and proposed underground and overhead utilities, including high risk utilities. Provide coordination interface to establish controls for utilities that would be included within the right-of-way limits, and identify existing underground and overhead utility lines that may interfere with the location of the proposed cabinets, pull boxes, splice vaults, conduits, and associated equipment. The utility information provided by the agencies will be delineated on the plans based on their record drawings and our field review.

The ADVANTEC Team will compile the information in a matrix format to include dates of notification, persons/utility notified and responses from utility. Letters will be forward to the utility companies requesting their verification of their review of the preliminary and final plans and concur with the information shown on the plans. Copies of this information will be updated periodically and provided to the City of Lancaster at the schedule project meetings and/or as the information has been received.

The ADVANTEC Team will coordinate with SCE for source of electrical service points if new service point connections will be required. The ADVANTEC Team will conduct utility coordination throughout the design phase of the project. The ADVANTEC Team will designate the utility pothole locations on the final plans for Contractor's use prior to construction.

Deliverables: Utility Notification Letters & Summary Matrix

Task 1.2.6 – Prepare Fiber Optic Backbone Communication Plans

The ADVANTEC Team will prepare plans for the proposed communications system. Improvements are anticipated to include:

- Re-splicing of existing single-mode fiber optic cable
- Replacement of some existing pull boxes
- Installation of splice vaults and pull boxes
- Removal of old communications equipment
- Installation of Layer 2 and Layer 3 Ethernet switches at Hubs, City Hall and Maintenance Yard

The following improvements are not anticipated to be necessary unless new fund is available:

- Installation of new fiber-optic cable
- Installation of PVC conduit with tracer wire

Fiber splice assignment details will be provided for each Hub location, City Hall and Maintenance Yard Building. All new field elements and field element upgrades will be shown on the plans. Additional equipment upgrades, modifications, termination hardware and related improvements necessary for an effective and efficient communication system will be shown on the plans.

The communication plans will also include improvements at the communication Hubs, City Hall and Maintenance Yard Building in order to connect the existing communication backbone. The fiber optic communication plans will be prepared based on record drawings, City GIS maps, aerial drawings, and site visits, at 1" = 40' scale and in accordance with standards set forth by the City.

A project Title Sheet will be provided. Communication detail sheets will be included showing details for pull boxes, conduit sweeps, trenching, interconnecting wiring diagram path/communication protocol matrix, and general notes.

Our estimate of number of plan sheets assumes that the existing Backbone Fiber Optic cable will remain and no additional cables will be installed.

Deliverables:
Title Sheet (1 sheet)
Fiber Optic Communication Plans at hubs, TMC & Yard (6 Sheets)
Communications Schematic (1 sheet)
Cabinet Detail (1 sheet)
Splice Assignment (2 sheets)
Miscellaneous Details and Notes (1 sheet)

Task 1.2.7 – Prepare Technical Specifications

The ADVANTEC Team will prepare Bid-ready Technical Specifications for inclusion in the City's construction bid documents. The Technical Specifications will include specifications for all the required fiber optic communication system, fiber optic cable manufacturing, delivering, testing, and commissioning requirements, and any additional item that may be required for the project (controller cabinet upgrades, pedestrian ramps, etc.).

Fiber optic communication equipment including Ethernet switches required at communication hubs, City Hall, and Maintenance Yard Building will be specified in the technical specifications including system integration in order to provide a complete system.

In addition, the ADVANTEC Team will provide the following technical specifications.

- Existing System Cutover Sections
- System Testing Sections
- System Training Sections
- System Equipment Warranty (or extended warranty) Sections

The ADVANTEC Team will work with City staff to include the specific Contractor license(s), and network/software certifications required for this project. The ADVANTEC Team will work with City staff to assure that the equipment requirements will meet their needs, and that are based on the latest technology available.

Deliverables: Technical Specifications

Task 1.2.8 - Prepare Construction Quantities and Engineer's Estimates

The ADVANTEC Team will prepare Construction Quantities and Engineer's Estimates in accordance with Caltrans requirements for the proposed installation of IP communication hardware/software, SMFO cable and conduit, pull boxes, splice vaults, and associated improvements at each location, communication hubs, City Hall, and Maintenance Yard Building.

The cost estimate will be based on cost data from similar current projects. The engineer's construction cost estimates will be prepared in MS Excel format for use by the City to advertise for bids.

Deliverables: Construction Quantities and Engineer's Estimates

Task 1.3 - Construction Management

Task 1.3.1 – Construction Support

The ADVANTEC Team will provide construction plan interpretation and consultation during the bidding and construction phases of the Project. The ADVANTEC Team will assist City in preparing bid addenda as required to provide clarification to the drawings. The ADVANTEC Team will attend the pre-construction meeting in order to provide construction plan interpretation.

The ADVANTEC Team will provide response to Contractor's requests for information (RFI) about the plans and specifications, and equipment shop drawing reviews/approvals, forwarded to ADVANTEC by the City. This task includes conferring with the City's Project Engineer regarding the RFI and shop drawings, as appropriate. Construction inspection and regularly scheduled construction observation or attendance at weekly meetings is specifically excluded from this scope of work, and an optional task 1.4 is provided below for Construction Inspection services. For budgeting purpose, It is anticipated that services under this task will be based on "as requested" time and materials basis.

Deliverables: Construction Support Services

Task 1.3.2 - As-Built Plans

The ADVANTEC Team will prepare As-Built Plans based "markups" provided by the Contractor and our site visit. For budgeting purpose, the anticipated fee is shown on our fee matrix. It is anticipated that services under this task will be based on "as requested" time and materials basis.

Deliverables: As-Built Plans

Task 1.4 - Construction Inspection (OPTIONAL)

The field inspection work will include the following:

Task 1.4.1 – Pre-Construction Phase

- Coordinate and conduct Pre-Job Walk.
- Attend preconstruction meeting.

Task 1.4.2 – Construction Phase

- Perform field inspections during construction to insure compliance with plans, specifications, and applicable standards. The inspector shall have a complete set of construction plans, specifications, Greenbook, Caltrans Standard Specs, and APWA Standard Plans at all times.
- Attend weekly or bi-weekly progress meetings with the Contractor and the City Project Manager, and resolve any job site difficulties in the City's best interest. Prepare and distribute meeting minutes.
- Prepare Daily Construction Reports (DCR's) on City's format or format approved by the City's Project Manager. These DCR's are expected to include a detailed description of the day-to-day operations, including on-site labor, personnel, weather, materials and equipment and include times of arrival and departure. Prepare Quantity Calculations Sheet per each Contract Bid Item and clearly show how quantities for each bid items were verified. One or two line descriptions will not be accepted. Sample DCR's must be submitted as part of this proposal.
- Work progress shall be documented on a regular basis by means of digital photographs properly labeled, and dated. Digital photograph shall be submitted to the City's Project Manager by end of each work week via CD or memory stick.
- Provide weekly status reports and submit DCR's, construction photos, and all tickets at the end of each week to the City's Project Manager.
- Review and approve all equipment and shop drawing submittals.
- Review potential issues, and ensure installation of equipment including setup, installation, system integration, testing and commissioning are complete.

Task 1.4.2 – Construction Closeout Phase

- Administer final inspections. Coordinate final walk through inspection, prepare final punch list items, and ensure all corrections items are completed by final close-out letter.
- Review and make recommendations as to the adequacy of as-built plans including setup, installation, system integration, testing and commissioning are complete.

Task 2 – Provide Design Services for the Citywide Fiber Upgrade project

The City of Lancaster has received grant funds for the "Traffic Signal System Modernization" project from LA METRO. The project has the objective to modernize the City's aging traffic signal communications system infrastructure to a more reliable, redundant, and faster system based on current ITS architecture. The project will replace approximately 34 miles of copper interconnect with fiber optic cable in existing conduit, install Ethernet switches in existing cabinets, install equipment to view images remotely from existing video detection cameras, and install wireless communications to remote signalized intersections.

Task 2.1 - Design Services

Task 2.1.1 - Project Management, Project Coordination, and Meetings Attendance

The ADVANTEC Team will provide Project Management activities through all the aspects of the project. The ADVANTEC Team will prepare a detailed Work Plan, Project Schedule, and prepare progress reports. The ADVANTEC Team will prepare all necessary document and certification as required by Metro ITS Program.

The ADVANTEC Team will attend the project kick-off meeting and meetings with the City and others as directed by the City to discuss specific information, action items, project constraints, project requirements, etc. Meetings will also consist of any specific meeting called by the City, or other agencies, at which Consultant's attendance is requested. It is recommended that in the early stages of the preliminary engineering phase, the ADVANTEC Team and City staff conduct bi-weekly meetings in order to provide a continuous dialogue and develop a team relationship for the success of this project. The ADVANTEC Team will prepare and distribute meeting agendas, meeting minutes, and an action item matrix to the project team as appropriate.

Deliverables: Meeting Minutes & Progress Reports

Task 2.1.2 - Data Collection and Existing System Inventory

Project Locations - The ADVANTEC Team will conduct data collection and system inventory of existing copper interconnect and conduits at and between traffic signal controller cabinets, between controller cabinets and communication hubs, and at potential additional city facilities.

Data Collection - The ADVANTEC Team will obtain all existing reference documentation from the City, including improvement plans (street, traffic signals, signal communications), aerial photographs, right-of-way information and other applicable data.

Existing System Inventory - The inventory will also include projects currently underway or planned projects by the City. The field review for each location will document location of existing cabinets, associated equipment and communication system, and to verify potential locations where new cabinets, pull boxes, and splice vaults may be installed. In addition, a thorough investigation and evaluation of the communication hardware/software at the communication hubs, City Hall, and Maintenance Yard building,

and other facilities where future connections may be anticipated. Field notes and a photo log will be maintained.

Assessment of Existing Conduits, pull-boxes, and copper interconnect cable - The ADVANTEC Team will field check the condition of conduits and pull-boxes. Field assessment tasks will include: to open pull-boxes and check for debris and condition of box, check presence and condition of copper interconnect cable, determine if copper interconnect has free movement inside conduit, and determine if conduit is intact. If we believe any segment of conduit may be blocked, then we will suggest to City to hire a contractor to blow air to determine whether the conduit may be reused for pulling fiber optic cables.

Existing Inventory Project Report – A Technical Memorandum Report will be provided to the City. The report will summarize existing system inventory and evaluation, findings and deficiencies at cabinets and pull-boxes, and other locations. Graphics, photos, citywide system map, and field notes will be included.

Deliverables: Data Collection, Existing System Inventory, Memorandum Report

Task 2.1.3 - Communication System Architecture and Preliminary Engineer's Estimates

The ADVANTEC Team will develop a system level architecture for entire traffic communications network. We will meet with City's Traffic and IT department to define or take into consideration any citywide networking architecture already in place. System Architecture will indicate detailed communication requirements for the network field devices (Ethernet switches), hub locations, City Hall, and City Maintenance Yard Building. It will include the City's recommended ITS architecture. The ADVANTEC Team will identify the recommended technologies at each intersection, hub(s), City Hall, City Maintenance Yard Building, and additional buildings, based on recommendations developed. Recommendations for future deployments of adaptive control system, Monitoring Systems (Travel Times, Volumes, Occupancy, Speeds), CCTV systems, DMS systems, and other ITS field elements will be included. It will also include a design guideline for communication deployment. A communication corridor system architecture exhibit showing proposed and future communications systems will be included. The exhibit will show locations of existing and proposed hubs, conduit/communication alignments, and other future ITS elements.

The ADVANTEC Team will prepare a Preliminary Engineer's Estimates to verify that the proposed improvements meet the project's allocated budget.

Deliverables: Communications System Architecture
Preliminary Engineer's Estimates

Task 2.1.4 - Utility Notification and Coordination

Utility notifications to the various utility owners within the sphere of the Project will be prepared using City's letterhead. The ADVANTEC Team will request locations for existing and proposed underground and overhead utilities, including high risk utilities. Provide coordination interface to establish controls for utilities that would be included within the right-of-way limits, and identify existing underground and overhead utility lines that may interfere with the location of the proposed cabinets, pull boxes, splice vaults, conduits, and associated equipment. The utility information provided by the agencies will be delineated on the plans based on their record drawings and our field review.

The ADVANTEC Team will compile the information in a matrix format to include dates of notification, persons/utility notified and responses from utility. Letters will be forward to the utility companies

requesting their verification of their review of the preliminary and final plans and concur with the information shown on the plans. Copies of this information will be updated periodically and provided to the City of Culver City at the schedule project meetings and/or as the information has been received.

The ADVANTEC Team will coordinate with SCE for source of electrical service points if new service point connections will be required. The ADVANTEC Team will conduct utility coordination throughout the design phase of the project. The ADVANTEC Team will designate the utility pothole locations on the final plans for Contractor's use prior to construction.

Deliverables: Utility Notification and Coordination

Task 2.1.5 – Prepare Fiber Optic Communication Plans

The ADVANTEC Team will prepare plans for the proposed communications system. Improvements are anticipated to include:

- Installation of new fiber-optic cable (approx. 34 miles)
- Installation of PVC conduit (to be determined)
- Splicing of single-mode fiber optic cable (at 122 signals and 6 hub cabinets)
- Replacement of some existing pull boxes (to be determined)
- Installation of splice vaults and pull boxes (to be determined)
- Removal of old communications equipment (to be determined)
- Removal of copper interconnect cable (approx. 34 miles)
- Installation of Ethernet switches at controller cabinets (at 141 controller cabinets)
- Installation of wireless communications equipment (at 20 locations)
- Installation of video image transmission equipment (potentially at 70 locations)
- Installation of Video Management System at City Maintenance Yard

Fiber splice assignment details will be provided for each controller cabinet and Hub location. All new field elements and field element upgrades will be shown on the plans. Additional equipment upgrades, modifications, termination hardware and related improvements necessary for an effective and efficient communication system will be shown on the plans.

The communication plans will also include improvements at the communication Hubs, City Hall and Maintenance Yard Building, and other facilities in order to connect the existing communication backbone.
The fiber optic communication plans will be prepared based on record drawings, City GIS maps, aerial drawings, and site visits, at 1" = 80' scale and in accordance with standards set forth by the City.

A project Title Sheet will be provided. Communication detail sheets will be included showing details for pull boxes, conduit sweeps, trenching, interconnecting wiring diagram path/communication protocol matrix, and general notes.

Fiber Optic segments (per June 2016 Traffic Signal System Map):

Arterial	Limits from	To	Length (miles)
Avenue H	35th St West	20th St West	1.5
Avenue I	30th St West	10th St West	2.0
Avenue I	Sierra Highway	15th St East	2.0
Lancaster Blvd	30th St West	20th St West	1.0
Lancaster Blvd	15th St West	10th St West	0.5
Lancaster Blvd	Sierra Highway	Division	0.4
Division	Lancaster Blvd N.	Lancaster Blvd S.	0.2
Lancaster Blvd	Division	5th St East	0.5
Avenue J	40th St West	20th St West	2.0
Avenue J	Sierra Highway	17th St East	2.0
Avenue J-8	25th St West	20th St West	0.5
Avenue K	45th St West	10th St West	3.5
Avenue K-8	20th St West	15th St West	0.5
Avenue L	40thSt West	10th St West	3.0
Avenue L	Sierra Hwy	4th St East	0.4
60th St West	Avenue J-8	Avenue K	0.5
60th St West	Avenue L	Avenue L-8	0.5
30th St West	Avenue H	Avenue L-8	4.5
25th St West	Avenue J	Avenue J-8	0.5
20th St West	Avenue I	Lancaster Blvd	0.5
20th St West	Avenue K	Avenue K-8	0.5
15th St West	Avenue J	Avenue J-5	0.3
15th St West	Avenue J-8	Avenue K	0.5
10th St West	Lancaster Blvd	Columbia Way (Ave M)	3.5
Division	Avenue K-4	Holston Dr/K-10	0.46
Challenger Way	Lancaster Blvd	Avenue J-8	1.0
Challenger Way	Avenue K	Avenue K-4	0.25
20th St East	Avenue I	Avenue J	1.0
		TOTAL	**34.0**

Deliverables: Title Sheet (1 sheet)
Fiber Optic Communication Plans (50 Sheets - 34 miles of FO at 3,600 feet per sheet)
Fiber Splice/Assignment (6 sheets - Typical details, Table format)
Detail – Pullbox/Cabinet/Splice Vaults, IP scheme (4 sheets)
Wireless Comm. (5 sheets)
Wireless Comm. Detail (2 sheets)
Total: 68 sheets

Task 2.1.6 – Prepare Technical Specifications

The ADVANTEC Team will prepare Bid-ready Technical Specifications for inclusion in the City's construction bid documents. The Technical Specifications will include specifications for all the required fiber optic communication system, fiber optic cable manufacturing, delivering, testing, and commissioning requirements, and any additional item that may be required for the project (controller cabinet upgrades, pedestrian ramps, etc.).

Fiber optic communication equipment including Ethernet switches required at communication hubs, City Hall, and Maintenance Yard Building will be specified in the technical specifications including system integration in order to provide a complete system.

In addition, the ADVANTEC Team will provide the following technical specifications.

- Existing System Cutover Sections
- System Testing Sections
- System Training Sections
- System Equipment Warranty (or extended warranty) Sections

The ADVANTEC Team will work with City staff to include the specific Contractor license(s), and network/software certifications required for this project. The ADVANTEC Team will work with City staff to assure that the equipment requirements will meet their needs, and that are based on the latest technology available.

Deliverables: Technical Specifications

Task 2.1.7 - Prepare Construction Quantities and Engineer's Estimates

The ADVANTEC Team will prepare Construction Quantities and Engineer's Estimates in accordance with Caltrans requirements for the proposed installation of IP communication hardware/software, SMFO cable and conduit, pull boxes, splice vaults, and associated improvements at each location, communication hubs, City Hall, and Maintenance Yard Building.

The cost estimate will be based on cost data from similar current projects. The engineer's construction cost estimates will be prepared in MS Excel format for use by the City to advertise for bids.

Deliverables: Construction Quantities and Engineer's Estimates

Task 2.2 - Construction Management

Task 2.2.1 – Construction Support

The ADVANTEC Team will provide construction plan interpretation and consultation during the bidding and construction phases of the Project. The ADVANTEC Team will assist City in preparing bid addenda as required to provide clarification to the drawings. The ADVANTEC Team will attend the pre-construction meeting in order to provide construction plan interpretation.

The ADVANTEC Team will provide response to Contractor's requests for information (RFI) about the plans and specifications, and equipment shop drawing reviews/approvals, forwarded to ADVANTEC by the City. This task includes conferring with the City's Project Engineer regarding the RFI and shop drawings, as appropriate. Regularly scheduled construction observation or attendance at weekly meetings is specifically excluded from this scope of work. For budgeting purpose, the anticipated fee is shown on our

fee matrix. It is anticipated that services under this task will be based on “as requested” time and materials basis.

Deliverables: Construction Support Services

2.2.2 - As-Built Plans

The ADVANTEC Team will prepare As-Built Plans based “markups” provided by the Contractor and our site visit. For budgeting purpose, the anticipated fee is shown on our fee matrix. It is anticipated that services under this task will be based on “as requested” time and materials basis.

Deliverables: As-Built Plans

Task 2.3 - Construction inspection (OPTIONAL)

The field inspection work will include the following:

Task 2.3.1 – Pre-Construction Phase

- Coordinate and conduct Pre-Job Walk.
- Attend preconstruction meeting.

Task 2.3.2 – Construction Phase

- Perform field inspections during construction to insure compliance with plans, specifications, and applicable standards. The inspector shall have a complete set of construction plans, specifications, Greenbook, Caltrans Standard Specs, and APWA Standard Plans at all times.
- Attend weekly or bi-weekly progress meetings with the Contractor and the City Project Manager, and resolve any job site difficulties in the City’s best interest. Prepare and distribute meeting minutes.
- Prepare Daily Construction Reports (DCR’s) on City’s format or format approved by the City’s Project Manager. These DCR’s are expected to include a detailed description of the day-to-day operations, including on-site labor, personnel, weather, materials and equipment and include times of arrival and departure. Prepare Quantity Calculations Sheet per each Contract Bid Item and clearly show how quantities for each bid items were verified. One or two line descriptions will not be accepted. Sample DCR’s must be submitted as part of this proposal.
- Work progress shall be documented on a regular basis by means of digital photographs properly labeled, and dated. Digital photograph shall be submitted to the City’s Project Manager by end of each work week via CD or memory stick.
- Provide weekly status reports and submit DCR’s, construction photos, and all tickets at the end of each week to the City’s Project Manager.
- Review and approve all equipment and shop drawing submittals.
- Review potential issues, and ensure installation of equipment including setup, installation, system integration, testing and commissioning are complete.

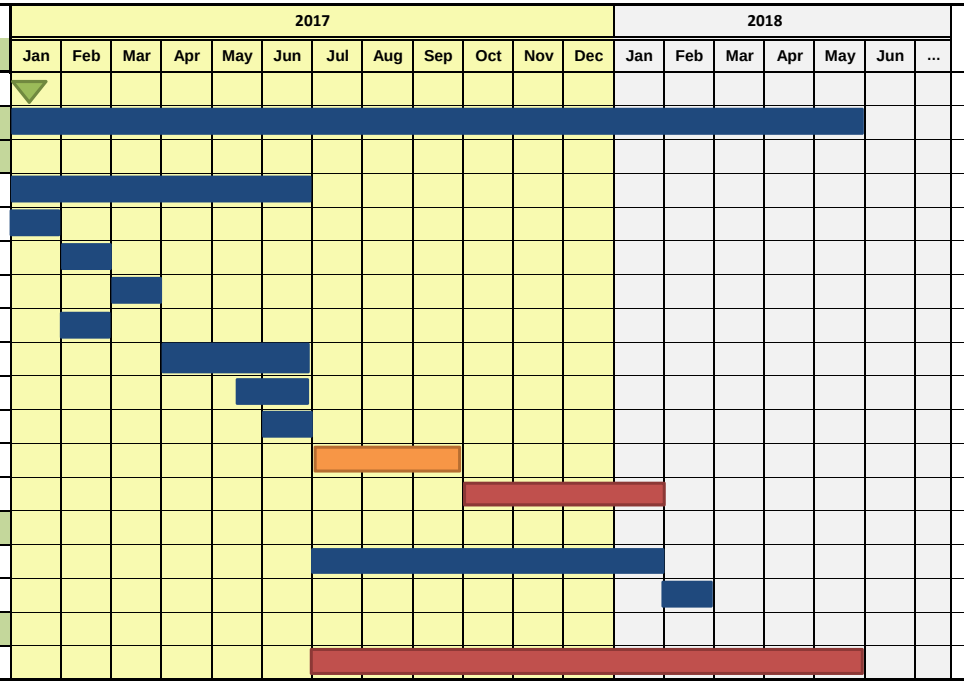
Task 2.3.3 – Construction Closeout Phase

- Administer final inspections. Coordinate final walk through inspection, prepare final punch list items, and ensure all corrections items are completed by final close-out letter.
- Review and make recommendations as to the adequacy of as-built plans including setup, installation, system integration, testing and commissioning are complete.

PROPOSED PROJECT SCHEDULE

City of Lancaster

Task 1- Central Traffic Signal System Upgrade Project (North County ITS Expansion)

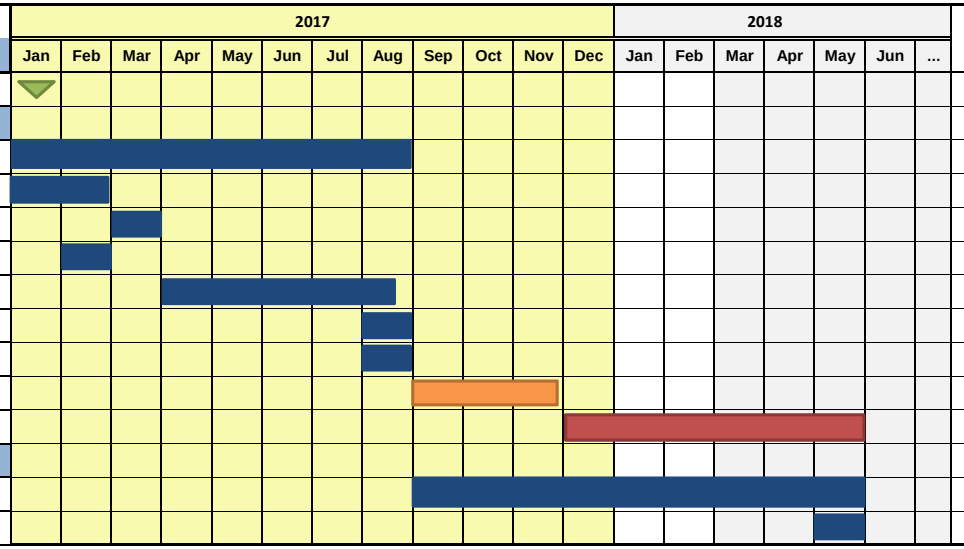


1.1	Systems Management
1.2	Design Services
1.2.1	*Project Management, Project Coordination, and Meetings Attendance*
1.2.2	*Data Collection and Existing System Inventory*
1.2.3	*Review of Transportation Communications Master Plan*
1.2.4	*Communication System Architecture and Preliminary Engineer's Estimates*
1.2.5	*Utility Notification and Coordination*
1.2.6	*Prepare Fiber Optic Backbone Communication Plans (12 Sheets)*
1.2.7	*Prepare Technical Specifications*
1.2.8	*Prepare Construction Quantities and Engineer's Estimates*
	CITY's BID PROCESS
	CONSTRUCTION
1.3	Construction Management / Construction Inspection
1.3.1	*Construction Support*
1.3.2	*As-Built Plans*
1.4	Central System and controller installation
	ATMS ORDERING AND INSTALLATION

PROPOSED PROJECT SCHEDULE

City of Lancaster

Task 2 - Citywide Fiber Upgrade Project (Traffic Signal Modernization Project)



2.1	Design Services
2.1.1	*Project Management, Project Coordination, and Meetings Attendance*
2.1.2	*Data Collection and Existing System Inventory*
2.1.3	*Communication System Architecture and Preliminary Engineer's Estimates*
2.1.4	*Utility Notification and Coordination*
2.1.5	*Prepare Fiber Optic Communication Plans (86 Sheets)*
2.1.6	*Prepare Technical Specifications*
2.1.7	*Prepare Construction Quantities and Engineer's Estimates*
	CITY's BID PROCESS
	CONSTRUCTION
2.2	Construction Management / Construction Inspection
2.2.1	*Construction Support*
2.2.2	*As-Built Plans*

ADVANTEC Consulting Engineers

FEE PROPOSAL

CITY OF LANCASTER

November 16, 2016

Task 1 – Provide System Management, Design Services, Construction Management and general oversight of the Central Traffic Signal System Upgrade project

TASK	DESCRIPTION	Project Manager $280	Project Engineer $210	Design Engineer $125	Engineer $105	Engineer (Field) $105	Total Hours	Total Cost
		Hours						
1.1	Systems Management	2	160			40	202	$38,360
1.2	Design Services	20	182	260	256	80	798	$111,600
1.2.1	*Project Management, Project Coordination, and Meetings Attendance*	*2*	*40*		*40*		*82*	*$13,160*
1.2.2	*Data Collection and Existing System Inventory*		*20*	*40*	*40*	*40*	*140*	*$17,600*
1.2.3	*Review of Transportation Communications Master Plan*	*4*	*20*	*40*			*64*	*$10,320*
1.2.4	*Communication System Architecture and Preliminary Engineer's Estimates*	*2*	*40*		*40*	*40*	*122*	*$17,360*
1.2.5	*Utility Notification and Coordination*		*2*		*16*		*18*	*$2,100*
1.2.6	*Prepare Fiber Optic Backbone Communication Plans (12 Sheets)*	*8*	*40*	*120*	*80*		*248*	*$34,040*
1.2.7	*Prepare Technical Specifications*	*2*	*10*	*20*	*40*		*72*	*$9,360*
1.2.8	*Prepare Construction Quantities and Engineer's Estimates*	*2*	*10*	*40*			*52*	*$7,660*
	DESIGN SERVICES - Total Hours	22	342	260	256	120	1000	
	Total Cost	$ 6,160	$ 71,820	$ 32,500	$ 26,880	$ 12,600		**$149,960**
1.3	Construction Management	2	18	28	12		60	$9,100
1.3.1	*Construction Support*	*2*	*16*	*16*			*34*	*$5,920*
1.3.2	*As-Built Plans*		*2*	*12*	*12*		*26*	*$3,180*
1.4	Construction Inspection (OPTIONAL)	2	136			376	514	$68,600
1.4.1	*Pre-Construction Phase*	*2*	*16*			*16*	*34*	*$5,600*
1.4.2	*Construction Phase*		*80*			*320*	*400*	*$50,400*
1.4.3	*Construction Close Out Phase*		*40*			*40*	*80*	*$12,600*
	CONSTRUCTION MANAGEMENT/INSPECTION - Total Hours	4	154	28	12	376	574	
	Total Cost	$ 1,120	$ 32,340	$ 3,500	$ 1,260	$ 39,480		**$77,700**
							Grand TOTAL	**$227,660**

ADVANTEC Consulting Engineers

FEE PROPOSAL

CITY OF LANCASTER

November 16, 2016

Task 2 – Provide Design Services for the Citywide Fiber Upgrade project

TASK	DESCRIPTION	Project Manager $280	Project Engineer $210	Design Engineer $125	Engineer $105	Engineer (Field) $105	Total Hours	Total Cost
		Hours						
2.1	Design Services	20	182	660	1016	120	1998	$245,600
2.1.1	*Project Management, Project Coordination, and Meetings Attendance*	*2*	*40*		*40*		*82*	*$13,160*
2.1.2	*Data Collection and Existing System Inventory*		*20*		*80*	*80*	*180*	*$21,000*
2.1.3	*Communication System Architecture and Preliminary Engineer's Estimates*	*2*	*40*		*40*	*40*	*122*	*$17,360*
2.1.4	*Utility Notification and Coordination*		*2*		*16*		*18*	*$2,100*
2.1.5	*Prepare Fiber Optic Communication Plans (68 Sheets)*	*16*	*60*	*600*	*800*		*1476*	*$176,080*
2.1.6	*Prepare Technical Specifications*		*10*	*20*	*40*		*70*	*$8,800*
2.1.7	*Prepare Construction Quantities and Engineer's Estimates*		*10*	*40*			*50*	*$7,100*
	DESIGN SERVICES - Total Hours	20	182	660	1016	120	1998	
	Total Cost	$ 5,600	$ 38,220	$ 82,500	$ 106,680	$ 12,600		**$245,600**
2.2	Construction Management	2	18	28	80		128	$16,240
2.2.1	*Construction Support*	*2*	*16*	*16*			*34*	*$5,920*
2.2.2	*As-Built Plans*		*2*	*12*	*24*		*38*	*$4,440*
2.3	Construction Inspection (OPTIONAL)	2	136			376	514	$68,600
2.3.1	*Pre-Construction Phase*	*2*	*16*			*16*	*34*	*$5,600*
2.3.2	*Construction Phase*		*80*			*320*	*400*	*$50,400*
2.3.3	*Construction Close Out Phase*		*40*			*40*	*80*	*$12,600*
	CONSTRUCTION MANAGEMENT/INSPECTION - Total Hours	4	154	28	80	376	642	
	Total Cost	$ 1,120	$ 32,340	$ 3,500	$ 8,400	$ 39,480		**$84,840**
							Grand TOTAL	**$330,440**