DRAFT INSTALLATION CONTRACT BETWEEN CITY OF SUNNYVALE AND CONTROL TECH WEST INC. TO DELPOY AN ADVANCED TRAFFIC MANAGEMENT SYSTEM

THIS CONTRACT dated _____ is by and between the CITY OF SUNNYVALE, a municipal corporation of the State of California ("Owner") and CONTROL TECH WEST, INC., a California Corporation ("Contractor").

RECITALS:

The parties to this Contract have mutually covenanted and agreed, as follows:

1. **The Contract Documents.** The complete Contract consists of the following documents: Exhibit A, Scope of Work; Exhibit B, Contract Pricing; Exhibit C, System Specifications; Exhibit D, Deliverable Acceptance Forms; Exhibit E, MAXVIEW End-user License Agreement; Exhibit F, MAXTIME End-user License Agreement; Exhibit G, Standard Warranty Software Products; Exhibit H, Maintenance Agreement Software Products; Exhibit I, Utilization of Local Workforce; Performance Bond; Payment Bond; and codes, standards, plans and specifications required by Owner. These documents are all incorporated by reference. The documents comprising the complete contract are collectively referred to as the Contract Documents.

Any and all obligations of the Owner and the Contractor are fully set forth and described therein.

All of the above documents are intended to work together so that any work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all documents.

2. The Work. Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, transportation, and material necessary to perform and complete the project in a good and workmanlike manner. The work consist(s) of deploying a citywide Advanced Traffic Management System and shall be completed according as called for, and in the manner designated in, and in strict conformity with, the plans and specifications prepared by the Public Works Department.

It is understood and agreed that the work will be performed and completed as required in the plans and specifications under the sole direction and control of the Contractor, and subject to inspection and approval of the Owner, or its representatives. The Owner hereby designates as its representative for the purpose of this contract the Transportation and Traffic Manager or an employee of the Owner who will be designated in writing by the Director of Public Works.

3. Contract Price. The Owner agrees to pay and the Contractor agrees to accept, in full payment for the work above agreed to be done, the sum of Five Hundred Eighteen Thousand Five Hundred Seventy Six and 81/100 Dollars ($518,576.81) subject to final determination of the work performed and materials furnished at unit prices per Exhibit A attached hereto and incorporated by this reference.

4. Permits; Compliance with Law. Contractor shall, at its expense, obtain all necessary permits and licenses, easements, etc., for the construction of the project, give all necessary notices, pay all fees required by law, and comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of the public health and safety.

5. Inspection by Owner. Contractor shall at all times maintain proper facilities and provide safe access for inspection by the Owner to all parts of the work, and to the shops wherein the work is in preparation. Where the Specifications require work to be specially tested or approved, it shall not be tested or covered up without timely notice to the Owner of its readiness for inspection and without the approval thereof or consent thereto by the latter. Should any such work be covered up without such notice, approval, or consent, it must, if required by Owner, be uncovered for examination at the Contractor's expense.

6. Extra or Additional Work and Changes. Should Owner at any time during the progress of the work request any alterations, deviations, additions or omissions from the Specifications or Plans or other Contract Documents it shall be at liberty to do so, and the same shall in no way affect or make void the contract, but will be added to or deducted from the amount of the contract price, as the case may be, by a fair and reasonable valuation, agreed to in writing between the parties hereto. No extra work shall be performed or change be made unless in pursuance of a written order from the Director of Public Works or authorized representative, stating that the extra work or change is authorized and no claim for an addition to the contract sum shall be valid unless so ordered.

7. Time for Completion. All work under this contract shall be completed before the expiration of One Hundred Eighty (180) calendar days from the date specified in the Notice to Proceed.

If Contractor shall be delayed in the work by the acts or neglect of Owner, or its employees or those under it by contract or otherwise, or by changes ordered in the work, or by strikes, lockouts by others, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by delay authorized by the Owner, or by any cause which the Owner shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Owner may decide.

This provision does not exclude the recovery of damages for delay by either party under other provisions.

8. Inspection and Testing of Materials. Contractor shall notify Owner a sufficient time in advance of the manufacture or production of materials, to be supplied under this contract, in order that the Owner may arrange for mill or factory inspection and testing of same, if Owner requests such notice from Contractor.

9. Termination for Breach, etc. If Contractor should file a bankruptcy petition and/or be judged bankrupt, or if Contractor should make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of insolvency, or if Contractor or any subcontractors should violate any of the provisions of the Contract, Owner may serve written notice upon Contractor and its surety of Owner's intention to terminate the Contract. The notice shall contain the reasons for such intention to terminate the Contract, and, unless within ten days after serving such notice, such violation shall cease and satisfactory arrangements for correction thereof be made, upon the expiration of the ten days, the Contract shall cease and terminate. In the event of any such termination, Owner shall immediately serve written notice thereof upon the surety and the Contractor, and the surety shall have the right to take over and perform the Contract; provided, however that, if the surety within fifteen days after the serving upon it of notice of termination does not give Owner written notice of its intention to take over and perform the Contract or does not commence

performance thereof within thirty days from the date of the serving of such notice, Owner may take over the work and prosecute the same to completion by contract or by any other method it may deem advisable, for the account and at the expense of Contractor, and Contractor and its surety shall be liable to Owner for any excess cost occasioned Owner thereby, and in such event Owner may without liability for so doing take possession of and utilize in completing the work, such materials, appliances, plant and other property belonging to Contractor as may be on the site of the work and necessary therefor.

10. Owner's Right to Withhold Certain Amounts and Make Application Thereof. In addition to the amount which Owner may retain under Paragraph 21 until the final completion and acceptance of all work covered by the Contract, Owner may withhold from payment to Contractor such amount or amounts as in its judgment may be necessary to pay just claims against Contractor or any subcontractors for labor and services rendered and materials furnished in and about the work. Owner may apply such withheld amount or amounts to the payment of such claims in its discretion. In so doing Owner shall be deemed the agent of Contractor and any payment so made by Owner shall be considered as a payment made under the Contract by Owner to the Contractor and Owner shall not be liable to Contractor for any such payment made in good faith. Such payment may be made without prior judicial determination of the claim or claims.

11. Notice and Service Thereof. All notices required pursuant to this Contract shall be communicated in writing, and shall be delivered in person, by commercial courier or by first class or priority mail delivered by the United States Postal Service. Transmission of notice by facsimile or by telephone may be deemed sufficient if the requirement for written notice is waived, in writing, by the receiving party. Notices delivered in person shall be deemed communicated as of actual receipt. Notices sent by mail or courier service shall be deemed communicated as of three days after mailing or dispatch, unless that date is a date on which there is no mail or delivery service, in which case communication shall be deemed to occur the next mail service or delivery day. The burden of proof of compliance with this requirement for written notice shall be on the sending party. All notices sent pursuant to this Contract shall be addressed as follows:

Owner: City of Sunnyvale
Department of Public Works
Shahid Abbas, Transportation and Traffic Manager
P. O. Box 3707
Sunnyvale, CA 94088-3707

Contractor: Control Tech West, Inc.
Attention: Steve Brown, Chief Technical Officer
43391 Business Park Drive, Suite C-8
Temecula, CA 92590

12. Assignment of Contract. Neither the Contract, nor any part thereof, nor moneys due or to become due thereunder may be assigned by Contractor without the prior written approval of Owner.

13. Compliance with Specifications of Materials. Whenever in the Specifications, any material or process is indicated or specified by patent or proprietary name, or by name of manufacturer, such Specifications must be met by Contractor, unless Owner agrees in writing to some other material, process or article offered by Contractor which is equal in all respects to the one

specified.

14. Contract Security. Contractor shall furnish a surety bond in an amount at least equal to 100 percent of the contract price as security for the faithful performance of this Contract. Contractor shall also furnish a separate surety bond in an amount at least equal to 100 percent of the contract price as security for the payment of all persons for furnishing materials, provisions, provender, or other supplies, or teams, used in, upon, for or about the performance of the work contracted to be done, or for performing any work or labor thereon of any kind, and for the payment of amounts due under the Unemployment Insurance Code with respect to such work or labor in connection with this Contract, and for the payment of a reasonable attorney's fee to be fixed by the court in case suit is brought upon the bond. Bonds shall be issued by an admitted surety insurer authorized to operate in the state of California.

15. Insurance. Contractor shall not commence work under this Contract until all insurance required under this paragraph has been obtained and such insurance has been approved by the Owner, nor shall Contractor allow any subcontractor to commence work on a subcontract until all similar insurance required of the subcontractor has been so obtained and approved. Contractor shall furnish the Owner with satisfactory proof of the carriage of insurance required, and there shall be a specific contractual liability endorsement extending the Contractor's coverage to include the contractual liability assumed by the Contractor pursuant to this Contract and particularly Paragraph 16 hereof. Any policy of insurance required of the Contractor under this Contract shall also contain an endorsement providing that thirty (30) days' notice must be given in writing to the Owner of any pending change in the limits of liability or of any cancellation or modification of the policy. Insurance carrier shall be California-admitted.

(a) Compensation Insurance and Employer's Liability Insurance. Contractor shall take out and maintain during the life of this Contract Workers' Compensation Insurance and Employer's Liability Insurance for all of employees employed at the site of the project and, in case any work is sublet, Contractor shall require the subcontractor similarly to provide Workers' Compensation Insurance and Employer's Liability Insurance for all of the latter's employees unless such employees are covered by the protection afforded by Contractor.

In signing this Contract, Contractor makes the following certification, required by Section 1861 of the Labor Code:

> "I am aware of the provision of Section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

(b) General and Automobile Liability Insurance. Contractor, at its own cost and expense, shall maintain personal injury liability and property damage insurance for the period covered by the Contract in the amount of Two Million Dollars ($2,000,000.00) per occurrence and $4,000,000 annual aggregate combined single limit coverage. Such coverage shall include, but shall not be limited to, protection against claims arising therefrom, and damage to property resulting from activities contemplated under this Contract, use of owned automobiles, products and completed operations, including U, C and X. Such insurance shall be with insurers and under forms of policies satisfactory

in all respects to the Owner and shall provide that notice must be given to Owner at least thirty (30) days prior to cancellation or material change. The following endorsements shall be attached to the policy:

> Policy shall cover on an "occurrence" basis. Policy must cover personal injuries as well as bodily injuries. Exclusion of contractual liability must be eliminated from personal injury endorsement. Broad form property damage endorsement must be attached. Owner is to be named as an additional insured on any contracts of insurance under this paragraph (b). Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code. The policies of insurance shall be considered primary insurance before any policies of insurance maintained by Owner.

16. Hold Harmless. Contractor agrees to defend, save, indemnify and hold harmless Owner and all its officers, employees, and agents, against any and all liability, claims, judgments, or demands, including demands arising from injuries or death of persons (Contractor's employees included) and damage to property, arising directly or indirectly out of the obligations herein undertaken or out of the operations conducted by Contractor, save and except claims or litigation arising through the active negligence or willful misconduct of Owner, or of Owner's officials, agents, employees, servants, or independent contractors who are directly responsible to Owner. Contractor shall make good and reimburse Owner for any expenditures, including reasonable attorneys' fees, Owner may make by reason of such claim or litigation, and, if requested by Owner, Contractor shall defend any such suits at the sole cost and expense of Contractor.

17. Hours of Work. Eight hours of labor during any one calendar day and forty hours of labor during any one calendar week shall constitute the maximum hours of service upon all work done hereunder, and it is expressly stipulated that no laborer, worker, or mechanic employed at any time by the Contractor or by any subcontractor or subcontractors under this Contract, upon the work or upon any part of the work contemplated by this Contract, shall be required or permitted to work thereon more than eight hours during any one calendar day and forty hours during any one calendar week, except, as provided by Section 1815 of the Labor Code of the State of California, work performed by employees of contractors in excess of eight hours per day and forty hours during any one week shall be permitted upon public work upon compensation for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. It is further expressly stipulated that for each and every violation of Sections 1811-1815, inclusive, of the Labor Code of the State of California, all the provisions whereof are deemed to be incorporated herein, Contractor shall forfeit, as a penalty to Owner, twenty-five dollars ($25.00) for each laborer, worker, or mechanic employed in the execution of this Contract by Contractor, or by any subcontractor under this Contract, for each calendar day during which the laborer, worker, or mechanic is required or permitted to work more than eight hours in any one calendar day and forty hours in any one calendar week in violation of the provisions of the Sections of the Labor Code.

Contractor, and each subcontractor, shall, in accordance with California Labor Code Section 1776 or as the same may be later amended, keep accurate payroll records showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with work under this agreement. Each payroll record shall contain

or be verified by a written declaration under penalty of perjury, in accordance with Labor Code Section 1776(a). Such payroll records shall be made available at all reasonable times at the Contractor's principal office to the persons authorized to inspect such records pursuant to Labor Code Section 1776. A certified copy of all payroll records shall be made available for inspection or furnished upon request to a representative of the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations, as well as to the Owner's representative. In the event the Contractor or a Subcontractor fails to comply in a timely manner within ten days to a written notice requesting the records, such contractor or subcontractor shall forfeit one-hundred dollars ($100.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated, in accordance with Labor Code Section 1776(h).

18. Wage Rates. Pursuant to the Labor Code of the State of California, or any applicable local law, Owner has ascertained the general prevailing rate per diem wages and rates for holidays, and overtime work in the city, for each craft, classification or type of laborer, worker, or mechanic needed to execute this Contract. Owner has adopted, by reference, the general prevailing rate of wages applicable to the work to be done under the Contract, as adopted and published by the Division of Labor Standards Enforcement and Labor Statistics and Research of the State of California, Department of Industrial Relations, to which reference is hereby made for a full and detailed description. A copy of the prevailing wage rates may be reviewed in the office of the Director of Public Works, City of Sunnyvale, 456 West Olive Avenue, Sunnyvale, California. Wage rates can also be obtained through the California Department of Industrial Relations website at: http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm.

Neither the notice inviting bids nor this Contract shall constitute a representation of fact as to the prevailing wage rates upon which the Contractor or any subcontractor may base any claim against Owner.

It shall be mandatory upon Contractor and upon any subcontractor to pay not less than the specified rates to all laborers, workers, and mechanics employed in the execution of the Contract. It is further expressly stipulated that Contractor shall, as a penalty to Owner, forfeit two-hundred dollars ($200.00) for each calendar day, or portion thereof, for each laborer, worker, or mechanic paid less then the stipulated prevailing rates for any work done under this Contract by Contractor or by any subcontractor; and Contractor agrees to comply with all provisions of Section 1775 of the Labor Code.

In case it becomes necessary for Contractor or any subcontractor to employ on the project under this Contract any person in a trade or occupation (except executives, supervisory, administrative, clerical, or other non-manual workers as such) for which no minimum wage rate is herein specified, Contractor shall immediately notify Owner who will promptly thereafter determine the prevailing rate for such additional trade or occupation and shall furnish Contractor with the minimum rate based thereon. The minimum rate thus furnished shall be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

19. Accident Prevention. Precaution shall be exercised at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery, equipment, and other hazards shall be guarded or eliminated in accordance with the safety provisions of the Construction Safety Orders issued by the

Industrial Accident Commission of the State of California.

20. Contractor's Guarantee. Owner shall not, in any way or manner, be answerable or suffer loss, damage, expense or liability for any loss or damage that may happen to the building, work, or equipment or any part thereof, or in, on, or about the same during its construction and before acceptance. Contractor unqualifiedly guarantees the first-class quality of all workmanship and of all materials, apparatus, and equipment used or installed by Contractor or by any subcontractor or supplier in the project which is the subject of this Contract, unless a lesser quality is expressly authorized in the Plans and Specifications, in which event Contractor unqualifiedly guarantees such lesser quality; and that the work as performed by Contractor will conform with the Plans and Specifications or any written authorized deviations therefrom. In case of any defect in work, materials, apparatus or equipment, whether latent or patent, revealed to Owner within one year of the date of acceptance of completion of this Contract by Owner, Contractor will forthwith remedy such defect or defects without cost to Owner.

21. Liquidated Damages. Time shall be the essence of this Contract. If Contractor fails to complete, within the time fixed for such completion, the entire work mentioned and described and contracted to be done and performed, Contractor shall become liable to Owner for liquidated damages in the sum of Two Hundred Fifty Dollars ($250.00) for each and every calendar day during which work shall remain uncompleted beyond such time fixed for completion or any lawful extension thereof. The amount specified as liquidated damages is presumed to be the amount of damage sustained by Owner since it would be impracticable or extremely difficult to fix the actual damage; and the amount of liquidated damages may be deducted by Owner from moneys due Contractor hereunder, or its assigns and successors at the time of completion, and Contractor, or its assigns and successors at the time of completion, and its sureties shall be liable to Owner for any excess.

22. Additional Provisions.

None.

IN WITNESS WHEREOF, two identical counterparts of this contract, each of which shall for all purposed be deemed an original thereof, have been duly executed by the parties.

CITY OF SUNNYVALE
a Municipal Corporation, Owner

By_____/___/____
City Manager

Attest:
City Clerk

By_____/___/____
City Clerk Date

(SEAL)

APPROVED AS TO FORM:

_____/___/____
City Attorney Date

Control Tech West, Inc.
Contractor

Registration No. 1000034357____

By_____

_____/___/____
Title Date

By_____

_____/___/____
Title Date

Exhibit A

SCOPE OF WORK

1) General

a) The purpose of this Project is to deploy optimized traffic signal timings, monitor deployed traffic signal timings and make necessary changes to meet the real time traffic demand by replacing the City's existing outdated and proprietary client/server central traffic management system with a modern web-based Advanced Traffic Management Central System (MaxView) Software that uses state of the art web-based technology on the server and thin clients which use leading browsers with no additional client software needed on the client workstations. The new system shall be standards based and shall be capable of running a combination of local intersection control equipment from different vendors. The system shall be fully compliant with the National Transportation Communications for ITS Protocol (NTCIP) standards. The new central system software must be able to integrate with existing City ITS infrastructure by upgrading and/or replacing current controllers. The Contractor will be responsible for installing the central software on a server or virtual server specified by the Contractor and provided by the City, and updating all of the traffic signal timing through the installed system.

b) Currently, the City of Sunnyvale is running several local intersection control software on a combination of Model 170 and Model 2070 controllers. Their central system software is primarily the McCain QuicNet system; however they also have Transcore SCATS running on the Mathilda corridor. In order to deploy optimized traffic signal timing along the major corridors in Sunnyvale, the Contractor shall update the City's existing traffic signal controller hardware and software to Advanced Traffic Controller (MaxTime) software that is standards compliant with the American Association of State Highway Officials (AASHTO)/National Electrical Manufacturers Association (NEMA)/Institute of Transportation Engineers (ITE) National Standard for ATC controllers, version 5.2b. The new controllers will support multiple optimized traffic signal timing plans (128 plans) and combinations thereof. As part of this upgrade, existing Model 170 controllers will be replaced with Model 2070ATC controllers and existing Model 2070 controllers will be upgraded with Model 2070-IC ATC CPU modules to bring all of the traffic signal controllers in the City on one unified communication network. The local intersection control software shall be used in both the upgraded Model 2070 controllers and the new ATC controllers.

c) The Contractor shall provide a perpetual, irrevocable software license to the City that gives City the right to copy and use the central signal system software furnished with this project at any facility within the City signal system limits or at any other offices that the City may establish for the purpose of traffic signal monitoring and control in the City's signal system jurisdictional area (up to the total number of intersections licensed under this contract at any given time.

d) The Contractor shall provide integration, data conversion, implementation, warranty, maintenance, repair and troubleshooting services for the traffic management system installed, as well as assistance in integration of any newly added intersections for up to five (5) years following the completion of the system implementation portion of the Contract.

e) The Contractor shall assign a project team, and a dedicated Project Manager to this project in accordance with the qualifications specified in Section 2.h. Contractor Staff Qualifications.

f) Throughout the system implementation and integration, the Contractor's Project Manager shall be responsible for organizing and conducting monthly progress meetings to update the City Project Officer on the project's status, any issues encountered, and basic project administrative tasks. The progress meeting shall be in person, by teleconference or video conference. The City shall have the right to request additional remote or in-person meetings as needed.

g) The Contractor may be asked to provide Model 2070ATC Advanced Transportation Controllers throughout the term of the Contract.

2) Advanced Traffic Management System Installation and Deployment

a) **The Contractor shall:**

i) Provide a City-wide license with unlimited logons for ATMS (MaxView) software for all City needs which will include the Traffic Management Centers, workstations, and all signalized intersections operated and maintained by the City of Sunnyvale. The Contractor's software must successfully communicate with ATC compliant controllers through an interface that has been verified to be successful in previously installed systems for other Contractor's clients or demonstrated directly to the City prior to the start of the project.

ii) Perform installation and integration of the ATMS (MaxView) software on a server or virtual server provided by the City to include initial installation, configuration and deployment of optimized traffic signal timing plans for all existing signalized intersections during the initial system deployment. Technical support will be provided for the lifetime of the contract, however, turn-key integration services for additional future signalized intersections beyond the initial one hundred thirty one (131) intersections is not included in the original contract agreement.

iii) Provide assistance to the City in integrating the ATMS (MaxView) with failover/backup hardware and software, including a backup server. It will be the responsibility of the City to provide the failover server, associated failover software and database server software per specifications provided by the Contractor.

iv) Provide training on operation, configuration, traffic signal timing plan deployment, maintenance, and troubleshooting of the ATMS (MaxView) software provided as part of this Contract.

(1) Training shall be for all City employees that are either members of the traffic engineering staff or technicians responsible for the maintenance of the system. Training shall be provided by a qualified member of the Contractor's team.
(2) The training shall be performed at a location designated by the City.
(3) The Contractor shall provide four (4) days of product training to allow for City staff to be trained to the point where staff can maintain and operate the system independently of the Contractor. The Contractor shall submit a training outline/syllabus to the City Project Officer for comments and approval no later than seven (7) calendar days prior to conducting the training session. The City may request additional sessions to the proposed training schedule at additional cost, to be paid separately.
(4) The training will be conducted within thirty (30) days of Contract award, or as otherwise decided by the City, as part of original contract price. Optional refresher courses shall be provided as needed thereafter at additional cost, to be paid separately.
(5) The training will be hands-on, in person.
(6) The Contractor shall provide each trainee a class outline for note-taking and a link to any digital presentation materials.

v) Provide five (5) hard copies and an electronic copy of the ATMS (MaxView) software user manual to the City. The Contractor shall update and maintain the electronic copy throughout the contract period following project completion and provide a copy of the updated documents to the City Project Officer within thirty (30) calendar days after their publication.

- Assist the City in maintaining consistent Time Base Coordination between existing field controllers running on the new central software and those controllers still remaining on the McCain QuicNet system until all controllers have been upgraded to ATC software and transferred to the new ATMS (MaxView). This coordination shall be accomplished by using a common time of day reference and common cycle timer reset time. The City shall maintain the existing signal timings until the system implementation is completed. Contractor is not responsible for maintenance of the existing McCain or Transcore central and local intersection software.

b) **City of Sunnyvale will:**

i) Supply a commercial grade enterprise server or virtual server capable of running the ATMS (MaxView) central software for a fully expanded system. The server hardware shall be in accordance with specifications provided by the Contractor within thirty (30) calendar days of execution of

the Agreement. The server shall run Microsoft Windows Server 2008 R2 or later and Microsoft SQL Server 2008 R2+ or later. The City will be responsible for providing and maintaining licenses for the server operating system, database management system, virtual machines (if desired by the City), and for providing backup software and server.

ii) Currently, the City operates a traffic management system that uses a time-of-day plan to control intersections. This data will be provided by the City to the Contractor immediately after execution of the Agreement. The Contractor may suggest changes upon review of the initial database that will better serve the City's needs, given differences in the structure of the ATMS (MaxView) system and QuicNet database. The Contractor shall submit the City-wide list of the proposed control groups to the City for review prior to implementing the first batch of controllers. The City shall have ten (10) working days to review and provide comments. The City shall have final authority in determining the number and composition of the control groups.

iii) In the event of a loss of the main server, a backup server shall be initiated. This will not require another copy of the ATMS (MaxView) server software. The switch from primary to backup server will require manual intervention by the City. The frequency and architecture of the backup and failover will be the responsibility of City of Sunnyvale.

iv) Provide access to the Internet for each of the workstations for cloud based resources such as Bing Maps that are needed for proper system operation.

v) Provide access to the Internet throughout the contract period for troubleshooting and maintenance period for the Contractor through a VPN connection to access and maintain the ATMS (MaxView) system server software.

c) **Integration**

i) General

(1) The Contractor shall install all support software furnished for the system in accordance with the procedures recommended for software installation.
(2) The Contractor shall register all software products furnished with this project with the software publisher under the City's name.
(3) Integration shall be considered in four Phases:

(a) Phase I: Central System Software Installation and Configuration
(b) Phase II: Controller Upgrades or Replacements

(c) Phase III: Deployment of Optimized Traffic Signal Timing Plans
(d) Phase IV: ITS Component Integration
(e) Phase V: Observation Period
(f) Phase VI: Training

(4) Each phase shall not be deemed complete until all appropriate Deliverables and Phases as outlined in Exhibit D have been approved and signed off by the City Project Officer.

ii) Phase I: Central System Software (ATMS)

(1) The Contractor shall install and fully integrate the ATMS (MaxView) with optimized traffic signal timing plans on the City provided server after the functional test is successfully completed. A Windows Server based installation program shall be provided by the Contractor for installing the software. The Contractor shall fully configure City identified Microsoft Windows 7 or higher workstations or laptops in the City to communicate to central system software along with the associated components described in Section 2.iv.1. below.
(2) The Contractor shall conduct a functional test as specified in Section 2.d. Testing below once the ATMS (MAXVIEW) web-based software is installed on the server. Upon successful completion of the functional test, the Contractor shall proceed to update the database settings, control groups, maps (web-based base map along with GIS layers), and external ITS components per the sections below.

iii) Phase II: Controller Upgrade and Radio Installations

(1) The controller upgrade shall only commence once the server functional test is complete and accepted by the City. The controller upgrade process shall begin within seven (7) calendar days of the completion of the server functional test.
(2) The Contractor shall ensure that the controller firmware, signal communication infrastructure, and the signal database, are all configured and integrated with the Central System Software. The City will be responsible for resolving any issues not directly related to new hardware or software supplied by the Contractor under this contract.
(3) The City shall initially supply the Contractor with five (5) Model 2070 controllers prior to beginning the controller Model 2070-1C module upgrades. The Contractor will upgrade the five (5) Model 2070 controllers and replace installed, but not yet upgraded controllers. The controller upgrade process is as follows:

(a) The Contractor shall identify five (5) Model 2070 controllers to be upgraded with Model 2070-1C module.
(b) The City will provide pdfs of the McCain or Transcore signal timing database for the particular controllers being upgraded, at

which point the Contractor-supplied ATC compliant Model 2070-1C module shall be installed and the traffic signal timing database shall be entered into the controller by the Contractor.

(c) After completing item (b) above, the City will perform the controller bench test for the upgraded controller in accordance with the testing requirements in Section 2.d. Testing.

(d) Upon successful completion of the bench test, the Contractor will be present on-site at the intersection while the City installs the controller into the traffic cabinet at the intersection, removing the currently installed controller. During this task, the Contractor will provide technical assistance and will make any controller parameter changes necessary; however, the City will integrate/connect the controller to the cabinet facilities.

(e) The Contractor shall salvage the controller removed from the upgraded cabinet to use in the next batch of controllers to be upgraded. If the controller being upgraded is known to be deficient, a new controller will be provided by the City.

(4) The process of installing the traffic signal timing and the upgraded controllers will be performed with a City representative. This activity shall be completed with proper traffic control and strict adherence to safety procedures provided by the City.

(5) The Contractor shall not leave the intersection until completing observation of five (5) complete cycles and verifying correct operation of all vehicular and pedestrian service, all detectors, and pre-emption. The Contractor shall not leave the site until such correct operation is completed to the satisfaction of the City representative present.

(a) In the event that proper operation cannot be achieved with the upgraded controller, the previous (existing) controller will be re-installed. The Contractor will then be required to complete the observation process described in this paragraph before leaving.

(b) The Contractor shall correct the faulty controller by either installing a replacement controller, module or troubleshooting the error and resubmitting for bench testing.

(c) The Contractor is not responsible for any existing deficient vehicular, pedestrian service, detection, or preemption operation prior to installing the upgraded controller. The contractor will not be responsible for communications networks or equipment except for equipment specifically installed by the Contractor under the contract.

(6) The Contractor shall furnish, configure and install radio equipment specified in this contract. The radio system will be tested by the contractor. It is assumed that the coax cable for the existing radios can be used to pull the new Cat5e cable for the radios. In the event the existing cable cannot be used to pull

in the Cat5e cables, the Contractor shall notify the City. Additional cost may be incurred by the City.

(7) If lane closure is deemed necessary and approved by the City project manager, contractor will provide the City with typicals as per CAMUTCD for lane closures during installation.

iv) Phase III: Deployment of Optimized Traffic Signal Timing Plans

(1) The contractor will convert the City's existing timing to run on the new ATC (MaxTime) platform.
(2) All timing will be submitted to the City for approval and further optimization. The City will have fourteen (14) days to review and approve the timing.
(3) Upon approval by the City, the new optimized traffic signal timing plans will be deployed to the ATC (MaxTime) controllers.
(4) The Contractor will work with the City to implement and fine tune the new optimized Traffic Signal Timing Plans.

v) Phase IV: ITS Component Integration

(1) Integrate the ITS components into the ATMS (MaxVew) as specified below with the overall traffic management system and coordinate fully with City of Sunnyvale to achieve this integration. The Contractor shall perform a field investigation to gather an understanding of the existing City equipment. The Contractor shall coordinate this field investigation with the City as needed. Integration will be required for all City ITS components including, but not limited to, the following:

(a) Model 2070 Controllers via Model 2070-1C ATC modules and new Model 2070ATC controllers.
(b) CCTV Cameras with ONVIF protocol
(c) GIS Mapping via ArcGIS Tile Servers or ArcGIS Map Servers.
(d) 3rd party devices that support a web server through http protocol.

(2) The Contractor shall add all system detector video feeds to the appropriate intersection display.

vi) Phase V: Observation Period

(1) The Observation Period shall be as defined in the section Testing.

vii) Phase VI: Training

(1) The Contractor shall provide the following training to City personnel:

(a) MaxView Training – two (2) days
(b) Controller Training – two (2) days

(c) The Contractor shall submit the proposed training outline to the City for approval at least thirty (30) days prior to the scheduled training. The City shall have seven (7) days to respond with comments.

d) **Testing**

i) General

(1) The Contractor shall develop a test plan that describes the scope of the overall effort and provides a record of the test planning process. The test plans must identify requirements and test pass/fail criteria. Related test plans can be grouped in a master plan. The test plan shall be submitted to the City within thirty (30) calendar days of the execution of the Agreement.

(2) For all testing outlined in Section 2.d. below, the Contractor shall deliver a report with all hardware/software errors or issues and submit to the City on a monthly basis, at least two (2) business days prior to the progress meeting. The report shall include, at a minimum: a description of the event, date of occurrence, date of resolution, and the detailed description of the solution.

ii) Server Functional Test

(1) The ATMS (MaxView) Central System Software shall be installed by the Contractor on the City provided server as the first phase of deployment.

(2) The web-link shortcut to the ATMS (MaxView) shall be provided by the Contractor on City workstations, as specified in Section 2.c.ii.1. above.

(3) The ATMS (MaxView) shall run on the server as a service upon power-on and be accessible from the City network without error for twenty four (24) hours.

(4) A network test will be performed by the City to ensure that the server will communicate within the City network. If there are problems with the network test the City shall troubleshoot the server and provide a solution.

(5) The City will review and provide written acceptance of the test. Upon City Project Officer's acceptance, the ATMS (MaxView) Central Software will be ready to integrate the traffic signal controllers. If the Server Functional Test is unsuccessful due to problems with the Contractor's software, the Contractor shall remedy the issue at no additional cost to the City within fourteen (14) calendar days. If the test is unsuccessful due to problems with the City-provided server, then the City will provide a solution within twenty-one (21) calendar days.

(6) The test shall be repeated until the City's acceptance can be issued in accordance with test requirements.

iii) Controller Bench Test

(1) This bench test will be conducted by the City for each upgraded controller once the intersection specific database has been programmed into the controller by the Contractor.
(2) The bench test will be performed by the City and will consist of three parts:

(a) Power-on: the unit will be powered on and the controller will be observed for three (3) minutes.
(b) Compatibility: The controller must run the programmed virtual intersection without registering conflict (defined as calling two conflicting phases, i.e. directions of vehicles) for a minimum of one (1) hour.
(c) Network: The controller must be able to talk through a workstation connected to the City network via a ping test.
(d) Successful completion of all three portions of the bench test specified in items (a) through (c) above will result in a successful test. Upon successful completion of the test, the City shall provide written acceptance notice of the test.
(e) In the event that a test is unsuccessful, the Contractor shall correct any issues and re-submit the controller within forty eight (48) hours of a failed test. The resubmitted controller will be re-tested until the test is successfully completed.

iv) System Operations Test

(1) This test will be ongoing from the integration of the first traffic controller until the final traffic controller is integrated and the City has provided a written acceptance of the test. Unsatisfactory results of any of the following requirements will require correction by the Contractor within the timeframes shown in Exhibits I. and J. to the Agreement. The City will determine the severity of any errors that arise during the operational test. Throughout the System Operations Test, the following tests will be performed by the City:

(a) Ensure established communication between ATMS (MaxView) server software to all traffic control devices.
(b) Verify time-of-day schedule is being executed as intended and that operation of coordinated signal groups is executed as planned.
(c) Verify integration of external ITS components outlined in Section 2.c.iv. above.

(2) The test will be considered successful if there are no outstanding problems within thirty (30) days after the final batch of controllers has been integrated. The Contractor shall provide a solution to any

recurring problems that arise during the System Operational Test within the timeframes provided in Exhibits I. and J. to the Agreement.

(3) The City will provide written final acceptance of the System Operations Test once the test has been successfully completed in accordance with the acceptance procedures outlined below.

v) Observation Period

(1) A thirty (30) calendar day observation period will begin after all traffic controllers and ITS components have been integrated, tested through the System Operational Test, and accepted by the City under the final acceptance of the System Operational Test.

(2) If no critical system failures (as described in Section 3.ii. below) or recurring issues arise during the observation period, the requirement will be satisfied. However, if a critical system failure occurs at any time during the observation period as a result of hardware of software furnished by the contractor under this contract, the Contractor shall provide correction in accordance with Section 3.ii, below, and the observation period will start over.

(3) The City shall provide written acceptance of the Observation period once the observation period is successfully completed according to the acceptance procedures outlined in Section f. Acceptance Process below.

vi) Regression Testing

(1) Problems or errors that arise during the implementation process that require alterations to the central system software or already integrated controllers shall require regression testing for those systems which have already been accepted but may be impacted by the changes. Regression testing may consist of any of the tests described in the sections above at the discretion of the City.

e) **System Implementation**

i) The existing traffic controllers will be integrated into the new ATMS (MaxView) in batches based on the schedule provided by the Contractor in accordance with section 2.f, below.

ii) The City shall provide pdf intersection information and traffic signal timing plans for the Contractor to program into the controllers to be upgraded.

iii) Within seven (7) calendar days of completion of the controller upgrade, the Contractor shall add the upgraded intersection to the Central System Software using the data from the field installation of the upgraded controller and the database information provided by the City. At this point, the controller will be operated under the new ATMS (MaxView).

iv) Upon configuring the intersections in the Central System Software, the Contractor shall request a quality check from the City to verify that the intersection is configured properly. If the City determines that there are errors, the Contractor shall correct within forty-eight (48) hours or within an alternate time-frame the City agrees to in writing.

v) Once the configuration of the intersection in the ATMS (MaxView) is verified by the City, the City will remove the intersection configuration from the QuicNet or SCATS system.

vi) During the controller upgrade process, QuicNet, SCATS and the new ATMS (MaxView) will operate independent portions of the signal system simultaneously until the final batch of controllers is transferred to the new ATMS (MaxView).

vii) The controller upgrades and integration shall be in accordance with the requirements of the project schedule specified in Section 2.g. below.

viii) The radio installation and integration shall be in accordance with the requirements of the project schedule specified in Section 2.g below.

f) **Acceptance Process**

i) Acceptance Procedures

(1) Acceptance by the City is required for the System and all Deliverables supplied by the Contractor or configured or implemented under the Contractor's supervision under this Contract. At the completion of each Phase of implementation, the Project Officer shall confirm the acceptance of all Deliverables.

(2) A Deliverable shall include one or both of the two types of actions:
(1) A service performed or
(2) A document created (referred to as a "deliverable document").

The following assumptions apply to the process:

(a) All deliverables (services and documents) are outlined in the Phase Acceptance Form (PAF)
(b) Once all deliverables have been completed for a Phase, the Contractor shall sign and deliver the PAF and attach any required deliverable documents
(c) The City shall verify that all tasks (services and documents) within the Phase were performed satisfactorily using the PAF to validate it.

ii) The following table outlines the tasks and the order that will take place for the acceptance of Deliverables and Phases.

Steps	Task	Description
1	Deliverable actions completed	Deliverable actions include performing services and/or creating documents. These actions are completed based on the Deliverable Acceptance Form, or as otherwise required.
2	Deliverable documents released for review and feedback	The Deliverables documents are provided to the City Project Officer by the Contractor's Project Manager for review and feedback. Based on feedback and criticality of changes, the deliverable documents may require resubmittal.
3	Issue Phase Acceptance form	Once all deliverable documents for a Phase have been accepted by the City, the Contractor's Project Manager shall submit the Phase Acceptance Form (see Exhibit D) for that Phase to the City Project Officer for final review and acceptance. The completed DAFs and supporting documentation shall be attached to the Phase Acceptance Form.
4	Document reason for rejection	If the Deliverable or Phase is rejected, the reason for rejection shall be documented by the City's Project Officer. This documentation shall be completed within five (5) business days from submittal.
5	Deliverable twice rejected	If a Deliverable or Phase is rejected on two separate occasions, then the issue must go through the issue resolution process, as defined in Section 2.f.iii.2. below.
6	Final Deliverable/ Phase accepted	The Deliverable/Phase will be reviewed by the City Project Officer.

(1) Acceptance shall not be deemed to occur for specific Deliverables or Phases and no fees or other charges shall be paid by the City until the City confirms in writing to the Contractor that the Deliverables or Phases have been accepted by the City on the appropriate acceptance forms. If no criteria and/or procedures are set forth in the scope of work, then acceptance of such Deliverables or Phases shall occur upon the City's written confirmation to the Contractor of the City's acceptance thereof.

(2) A blank Deliverable Acceptance Form, and all Phase Acceptance Forms which outline all required Deliverables, are included in this Agreement as Exhibit D.

iii) Final System Acceptance Process

(1) Final System Acceptance will occur at the end of Phase 4: Observation Period. The City shall determine final system acceptance utilizing the following decision points:

Steps	Description
1	System documentation is current and complete for all software and has been turned over to the City's Project Officer. All configuration documentation and traffic signal timing plan deployment has been approved.
2	All Deliverables and Phases are complete and accepted by the City and the Contractor per the acceptance process described above.
3	All issues listed in the issue tracking log are resolved or addressed to the satisfaction of the City.

(2) Issue Resolution Process

Risks and issues will be managed using the following procedure:

(a) The City Project Officer identifies and submits a risk and/or issue to the Contractor's Project Manager.

(b) The Project Manager is responsible for researching the risk/issue, identifying and documenting mitigations and/or resolutions, and closing out the risk/issue by an assigned due date specified by the City. All outstanding Risks/Issues will be reviewed during the progress meetings.

(c) The use or non-use of this procedure does not alter, waive, restrict or modify the remedies afforded elsewhere in the Agreement.

g) **Project Schedule**

i) The integration and deployment of all Ethernet based one hundred and thirty one (131) intersections (Phases I through IV) shall be completed no later than six (6) months from the notice to proceed. Additional intersections shall be integrated into the system as Ethernet becomes available.

ii) Within fifteen (15) calendar days from execution of the Agreement, the Contractor shall submit a detailed schedule for the new system implementation and deployment.

iii) The Contractor shall work with the City to divide the required field work into geographic areas to indicate where and when work will be taking place. This schedule must be approved by Sunnyvale City prior to beginning the work. The City will have the final authority in determining the schedule in case of a disagreement. The City will review and approve the initial schedule to ensure that the project completion deadline is met, and that the work does not conflict with active construction areas. The City will also evaluate the proposed batches to ensure that corridor coordination is maintained.

iv) Any requests for changes to this schedule must be submitted in writing to the City Project Officer for approval before the schedule changes are implemented.

v) The City and the Contractor agree that time is of the essence in the implementation of the new traffic management system; therefore the Contractor shall fully integrate all signalized locations and radio system no later than six (6) months from the actual Notice to Proceed. The Contractor shall fully integrate additional upgraded locations within sixty (60) calendar days of being notified in writing by the City. The sixty (60) calendar days begin with delivery of the equipment to accommodate the current lead time to supply equipment.

h) **Contractor Staff Qualifications**

The Contractor shall designate key personnel to be the primary service providers for the integration, data conversion and implementation portion of the Contract. All substitutions of key personnel must be approved in advance by the City Project Officer. The City may, in its sole discretion, reject a proposed personnel substitution and require the Contractor to propose another substitution that the City deems qualified.

The Contractor's Project Manager shall have at least five (5) years of professional experience in the following areas:

- Managing the implementation of ATMS (MaxView) in urban/suburban environments
- Implementing the ATMS (MaxView) with signal systems communicating on fiber optic networks

The Project Manager shall also have thorough knowledge of traffic signal operations, NEMA standards, and ATC standards.

i) **Pricing and Payment**

Payments for the system implementation portion of the Work shall be made in installments based on initial delivery, acceptance of deliverables and complete integration of each major deliverable as follows;

- Phase 1: Ninety (90) percent of the Central System License and Integration fees may be invoiced after the initial installation of the Central System. The remaining ten (10) percent of the fee will be withheld until project final acceptance per section 2.f.iii. The ten (10) percent retention will be paid with thirty (30) days of final acceptance.
- Phase 2: ATC Compliant Hardware and Controllers will be implemented and tested in batches of twenty five (25) intersections each time. For each batch, ninety (90) percent of the "ATC Compliant Hardware" may be invoiced after the delivery of the hardware or controllers. The remaining ten percent (10%) will be withheld until all integrated hardware has passed final acceptance. A final payment for each major deliverable or batch of intersections can only be invoiced once all components (as described in section 2.iv.1. above) at that location have been fully integrated, tested and approved by the City under the System Operational Test.
- Communications equipment and training fees will be invoiced upon completion.

Payment of the retained ten (10) percent from Phase 1 will occur after written notice of acceptance is provided by the City for the Observation Period.

The ATMS (MaxView) integration and deployment will be included in the contract price.

3) Warranty, Technical Support and Maintenance

a) Software Warranty, Technical Support and Maintenance

i) Software Guarantee

(1) The Contractor shall guarantee that the software will not become incompatible with the City's existing controllers for ten (10) years after the execution date of the Agreement. This requirement may be satisfied by providing software binaries to the City compatible with the controllers supplied under the contract. This software guarantee shall not limit the Contractor or its suppliers from developing new software for next generation controllers, even though those developments may be incompatible with the controllers supplied on this contract.

ii) Software Warranty

(1) The Contractor shall provide a software warranty as specified in Exhibit G. to this Agreement for the period of five (5) years following the system's Final Acceptance.

iii) Software Maintenance

iv) The Contractor shall provide unlimited and ongoing technical and maintenance support, as specified in Exhibit H. to this Agreement, for up

to five (5) years after the expiration date of the Software Warranty, renewable annually at the sole discretion of the City.

v) The contractor will provide up to 131 licenses for traffic signal controllers software (MaxTime) deployed at existing City intersections. Software if needed to be reinstalled due to controller failures, repairs, maintenance and replacements of controllers at these 131 intersections will be done at no additional software or licensing cost to the City. Installation or reinstallation of controller software due to any reason on the 131 intersections will be considered as part of 131 licenses, and will not be considered additional license(s). The City will pay additional license fee when new intersection above and beyond 131 existing intersection is added to the system.

b) **Hardware Warranty and Repair**

i) Hardware Warranty

(1) The Contractor shall provide two (2) year hardware manufacturer's warranty for any ATC compliant controllers or engine boards provided by the Contractor.

ii) Hardware Repair

Throughout the Initial Contract Term and any and Subsequent Contract Terms the Contractor shall provide:

(1) ATC compliant hardware repairs – repair to be completed and equipment returned back to the City within thirty (30) calendar days.

(2) Two-way freight shall be included in the price of the repair.

c) **Payment**

i) Technical support during the software warranty period shall be included in the price of the software. Annual technical support and maintenance after warranty expiration date will be paid by the City annually to the Contractor starting in the first (1st) month following the end of the five (5) year factory warranty.

ii) The hardware warranty shall be included in the price of the hardware. Repair services shall be provided by the Contractor on the per-unit basis per the Contractor's standard hardware warranty.

Exhibit B

CONTRACT PRICING

Item	Unit	Qty	Invoice Upon Delivery	Invoice Upon Final Acceptance	Total Price
System License for MaxView (131 Intersections)	LS	1	$ 123,428.38	$ 13,713.38	$ 137,141.76
System Implementation which includes implementation and Fine Tuning of Signal Timings	LS	1	$ 28,000.00	$ -	$ 28,000.00
MaxView Training (2 Days)	LS	1	$ 2,000.00	$ -	$ 2,000.00
Controller Training (2 Days)	LS	1	$ 2,000.00	$ -	$ 2,000.00
Model 2070-IC ATC CPU Module	LS	55	$ 59,591.20	$ 6,621.25	$ 66,212.45
Model 2070LDX Traffic controller	LS	50	$ 138,199.50	$ 15,355.50	$ 153,555.00
Base Station Radios	LS	4	$ 16,177.65	$ -	$ 16,177.65
Subscriber Radios	LS	52	$ 58,189.95	$ -	$ 58,189.95
Radio Installation	LS	1	$ 47,300.00	$ -	$ 47,300.00
Total					$ 510,576.81

Maintenance and Support

Item	Unit	Qty	Price
Years 1-5	Lump Sum	1	Included
Each Additional Year	Lump Sum	1	$ 16,000.00
Refresher 2 Day Training	Lump Sum	1	$ 2,000.00

Exhibit C

SYSTEM SPECIFICATIONS

1) Central Software Basic Functional Requirements

The following defines a series of functional requirements which the ATMS system must support. As part of the system test development called for in the Scope of Work, the Contractor shall be responsible for ensuring that all software functionality and all software functional requirements are tested and verified before the system goes live (see Section 2.d.2.6 above). The Contractor shall be responsible for furnishing all software and equipment that may be necessary to demonstrate conformance with these requirements.

a) **Compatibility**

i) The central system client software shall be fully compatible with following computer operating systems: Windows 7 (all versions), Windows 8 (all versions), Mac 0S X (Lion+).

ii) The central and local software shall support a system of local Advanced Transportation Controllers (ATC) compliant to the open ATC (version 5.2b or later) standard (http://www.ite.org/standards/ATCcontroller), and shall fully comply with the controller functions defined in the NEMA Standards Publication for TS-2 Traffic Signal Controller Assemblies with NTCIP Requirements v02.06 (http://www.ntcip.org).

iii) The system shall be capable of interfacing with all Advanced Traffic Control (ATC) and NTCIP 1202 standard equipment.

iv) The central software shall have a Microsoft SQL-Server™ database that is compatible with standard formats, such as SQL and XML.

v) The central software shall support multiple (different) versions of the local control software running at different intersections.

b) **Communication Protocol**

i) The Contractor shall provide all NTCIP Management Information Base (MIBs) files associated with the licensed controller software including manufacturer specific and extended objects. Re-distribution and re-use of the MIBs associated with the licensed controller software shall be permitted as specified in Exhibits G and H of this Agreement.

ii) The central software and local controller software shall support all mandatory ASC NTCIP objects and 1202 series NTCIP STMP & SNMP protocols over IP.

c) **UPS and Backup**

i) The central software and server hardware shall be capable of integration with the City's existing uninterruptible power supply (UPS) that detects power outages and allows for the orderly shutdown of the system, or transfer to backup power. The system shall be brought back online automatically when primary power is restored.

d) **Monitoring**

i) The central software shall monitor and return status information on all local detectors, system detectors, controllers (flash, free, coordination, etc.), and communication status to Traffic Management Center and workstations. The central software shall notify operators by message or alarm in the event of equipment malfunction.

ii) The central signal system software shall be capable of monitoring the traffic signal controllers on a second-by-second basis. If polling rates are restricted by elements of the field communications infrastructure, the central signal system software shall monitor the traffic signal controllers at the most frequent rate possible, up to second-by-second rates. At startup, the central signal system software shall establish communications with all intersection controllers via the central communication system and begin second-by-second monitoring. The central signal system software shall start to process both incoming data and user requests. A message communications scheme shall be included that ranks messages to controllers on a priority level basis in which upload/download is a higher priority than second-by-second monitoring.

iii) The central software shall display a flashing graphic on the main map to indicate that an actively configured intersection has lost communication.

iv) Controller hardware monitoring shall diagnose and report on detector and controller output. The diagnostics shall compare controller settings in the field compared with database parameters, highlight differences and identify failures. Upon failure, the central signal system software shall log the event and also display a visual alarm to the operator. The event log shall include both the controller time and the central signal system software time. The central signal system software shall continue to attempt communication with the failed component. If the failed component communicates successfully for an operator-specified amount of time, the component shall be considered operational. This event shall also be logged, along with the clearing of the alarm for the failed component. The operator shall be able to disable these components through the user interface. When disabled, these central signal system software shall not communicate with the component. The central software shall provide a graphical drag and drop user interface for configuration of detailed intersection status screens. Intersection status

screens shall support Flashing Yellow Arrow and other miscellaneous special functions in a clear and intuitive display.

v) The intersection status screens shall be capable of displaying all phase, pedestrian, and overlap intervals using one dynamic object per each type of output. Status objects including flashing Don't Walk and flashing Yellow Arrow intervals shall display those intervals as flashing objects in the central system. Five-section signals Protected/Permissive shall display similar to the actual signal head.

vi) The central software shall provide a mechanism to view the current coordination status of a static or dynamic group of intersections. The current coordination status screen must display the running pattern, cycle time, offset, and split timings of all intersections in the static or dynamic group in real time. From the status screen the user must be able to change the pattern of a given intersection or apply a manual command (with expiration time) to the entire group.

e) **Interface Features**

i) For ease of deployment and the future integration with other map based City applications, the central software shall have a "Thin-Client" based graphical user interface architecture with point and click and map-based entity selection functionality, and data exchange between the system software and other applications. Client workstations shall be web-based and shall not require client software.

ii) The central software shall have a system map supporting Microsoft's Bing Maps and will also support City supplied ArcGIS layers. The map shall allow the user to zoom in to reveal additional real-time dynamic system, sub-system, corridor, and intersection data at selected graphical zoom levels directly on the main system map.

iii) The central software main map must be capable of displaying intersections as graphics on the main system map. As a user zooms into a higher resolution on the main map, the graphical representation of a given map object shall update to show additional details and relevant information related to that object.

iv) In addition to static background images, the central software main map and detailed intersection views shall support Internet based map tile sources such as Bing Maps or Open Street Maps streamed live from the source or from the central system server, requiring no additional map configuration from the City.

v) The central software shall provide a mechanism to display a road, aerial or hybrid map in the main interface.

vi) The central software shall provide a mechanism for each user to select a set of intersections as Favorites, allowing easy access to detailed status directly from the main map. Favorite intersections shall be identical across user's logons.

vii) The central software shall provide a mechanism to quickly locate a section, group, or intersection on the main map.

viii) The central software shall provide a detailed communication event log and status of intersection communication connection directly in the main interface.

f) **Traffic Management Functions**

i) The central software shall support a hierarchy for timing control boundaries, reporting, and system actions (such as group flash) by time of day, scheduler initiation, or user intervention through the graphical interface. Under this interface schedule, manual command, or other similar commands shall be applied to sub-groups or individual intersections, over-riding system control.

ii) The central software shall allow the user to create pre-defined sections and groups of controllers using a drag and drop interface, as well as select dynamic one-time-use groups of controllers from the main map.

iii) The central software shall support simultaneous central editing of local controller timing parameter databases and automatically generated time-space diagrams for a defined or dynamic section or group of controllers. User shall be able to modify offsets directly in the time-space diagram.

iv) The time-space diagram shall display the programmed splits versus actual splits simultaneously.

v) The central software shall allow central editing, and archive storage, review and retrieval of all local controller database parameters.

vi) The central software shall allow "live" editing of controller database parameters where changes are updated and applied directly from the controller vs. uploading / downloading / archiving of database.

vii) The central software shall automatically update the database structure and database fields in the central database editor based on the version of the local software running at the intersection. For example, when a local controller software version is updated in the street, the new database table structure and parameters shall automatically be visible in the central software database editor without any user configuration on the central system.

viii) The central software shall support simultaneous control of multiple control zones with each having different control modes (Time of Day, Adaptive Control and Manual Control) and different timing plans (cycle length, offset,

and split). Coordination shall be possible between adjacent control zones or subsystems.

ix) The central software shall support the configuration of traffic responsive control algorithms for a given group or corridor based on system detector Measure of Effectiveness (MOE) data.

x) The central software shall support flash/free control operation via manual command or Time of Day schedule.

xi) The central software shall support the central editing of local and adaptive control parameters and controller features.

xii) The central software shall provide a mechanism to apply a manual command (i.e. pattern change) to a static or dynamic group of intersections. The user must be able to specify a time out for the manual command at which the control will revert to the previous control mode.

xiii) The central software shall provide a detailed command and control event log that can be filtered to a given section, group, or intersection. The event log shall show the command, time and user/source that initiated the command.

xiv) The central signal system software shall be capable of variable left-turn phasing including lead, lag, and lead/lag phasing. The central signal system software shall recognize first and third-car left-turn detection. The central signal system software shall recognize a variety of different phase sequences commonly used in the Traffic Engineering field such as split phase, sequential, etc.

xv) The central software shall support configuration of streaming video feeds per intersection. Configured videos shall be displayed in the detailed intersection view or the favorite intersection view of a given intersection. The central system shall support the following video formats:

(1) Motion JPEG
(2) Raw Video
(3) RGBA format
(4) Uncompressed 32 bit Alpha Red, Green, Blue
(5) YV12 format- YCrCb(4:2:0)
(6) Uncompressed YCrCb(4:2:0)
(7) RGBA - 32 bit Alpha Red, Green, Blue
(8) Windows Media Video and VC-1 formatsWMV1: Windows Media Video 7
(9) Supports Simple, Main, and Advanced Profiles
(10) WMV2: Windows Media Video 8
(11) WMV3: Windows Media Video 9
(12) Supports Simple and Main Profiles.
(13) WMVA: Windows Media Video Advanced Profile, non-VC-1
(14) WVC1: Windows Media Video Advanced Profile, VC-1

(15) Supports Advanced Profile
(16) H264 (ITU-T H.264 / ISO MPEG-4 AVC) formats
(17) Supports H.264 and MP43 codecs
(18) Supports Base, Main, and High Profiles
(19) Supports PlayReady DRM with Mp4 (H264 and AAC-LC)
(20) MPEG-4 Part 2 format
(21) Supports Simple and Advanced Profiles

g) **Data Import/Export Capabilities**

i) The central software shall support the export of any database table to MS Excel, Word or Adobe PDF format.

ii) The central software shall support the import/export of signal timing and phase data to/from Synchro from an individual or group of intersections.

iii) The central software shall support the export of Time Space diagrams to PDF.

iv) The central software shall support printing of database tables directly from the system, showing a print preview window before the document is printed.

h) **Capacity**

i) The proposed system shall be scalable in the number of intersections and components that can be integrated to meet the City's current and future needs.

ii) The central software shall be able to support at least one thousand (1,000) traffic signals.

iii) The central software shall support a minimum of five hundred (500) system-initiated or schedule-initiated events (timing plan changes) that are recurring (hourly, daily, weekly, monthly, or annually) or single instance.

i) **Access**

i) The central software database shall be structured so that system monitoring data, such as speed and volumes from system detector stations, may be accessed and archived in a manner useful for real time publication to World Wide Web advanced traveler information system Web sites.

ii) The central software shall support IP/Ethernet communications between the central application servers and field devices, including signal controllers and sensors.

iii) The central software shall support a multi-level security system that controls access to the system. The user's capabilities shall range from view only to

total system control depending on the privileges granted from the password assigned to an individual or agency.

iv) The central software shall support email messaging for NTCIP and multiple customizable, non-NTCIP alarm levels selected by the user.

v) The central software shall be accessible from any client machine through a Web Browser (such as Internet Explorer, Google Chrome, Apple Safari) running on Windows XP, 7, 8 or Mac OS X. In addition, the central software shall be installed onto a client machine with one click.

j) **Updates and Development**

i) The Contractor's current software development tool kit (including tool-chain and other necessary Linux Libraries) for the ATC engine board shall be available to the City at no additional cost for the lifetime of the product. Once a new standard ATC API Software has been developed and released by the ITE, AASHTO, and NEMA Joint Committee on ATCs, the Contractor shall revise their APR and toolkit in accordance with the new industry standard, and the new API and toolkit shall be provided to the City at no additional cost.

ii) The central software client shall be automatically updatable by deploying a new version to the central software service without the need to uninstall the previous version. The next time a client logs into the central server the client software shall be updated to the latest version and the new features available for use. The update shall be automatic if the user is using a Web Browser or an installed, stand-alone version of the client software.

2) Software/Hardware

a) **Software License**

i) The Contractor shall provide software licenses as specified in Exhibits G. and H. of this Agreement.
ii) The Contractor shall provide any third party software licenses to the City for any software that may be necessary or proposed by the Contractor to use. Example: report-configuring, diagnostic, or monitoring software.

b) **Operating System Requirements**

i) The operating system for all software provided under this project shall be Microsoft Windows Server 2008 R2 (server machine) or later, or Windows 7 Professional/Mac OS X (client machine) or later. The release used shall be the latest revision available as recommended by the supplier of the system software.

ii) The network operating system (NOS) shall be Microsoft Windows Server 2008 R2 or approved equal and must be compatible with the traffic signal system software.

c) **Utility Software**

i) The Contractor shall furnish utility software for editing signal controller databases locally at the signal cabinet. This software must be compatible with local controller software and signal system central software and must allow to import and export controller databases from the central software and the local controller.

d) **Server Software**

i) System shall support communications, applications and databases for up to 250 intersections on a single server.

3) Model 2070 Advanced Traffic Controller

The Contractor is requested to provide pricing for Model 2070ATC Advanced Traffic Controllers and the 2070-1C modules to upgrade existing Model 2070 controllers to Model 2070ATC controllers. These controllers and modules are part of the Traffic Management System upgrade in quantities as shown in Exhibit “D”, Contract Pricing and the City may elect to order additional controllers and/or 2070-1C modules throughout the Contract duration if the City decides to upgrade or expand its system.

a) **Applicable Standards**

i) All electronic components, workmanship, and functionality of the traffic signal controller shall also support open architecture and be compliant with current ITE, AASHTO, and NEMA Standard Publication for Advanced Traffic Controllers Version 5.2b as well as the National Transportation Communications for ITS Protocol (NTCIP) Requirements. Controller Model 2070-1C (CPU) modules shall also support open architecture and be compliant with current ITE, AASHTO, and NEMA Standard Publication for Advanced Traffic Controllers Version 5.2b.

ii) All major components shall meet the environmental, design, and operating standards outlined in the current ITE, AASHTO, and NEMA Standard Publication for Advanced Traffic Controllers Version 5.2b.

iii) These standards specify minimum requirements for the traffic signal controller except where requirements specified in the Contract Documents exceed the aforementioned standards. Any changes or updates to the above standards will require that the controllers provided after the date of issuing such change or update comply with the updated or changed standards.

b) **Hardware**

i) Enclosure

(1) The Controller enclosure shall be designed for rack mounting. The enclosure shall be aluminum with a protective finish and enclose all electrical components of the controller. All hardware and electrical components shall be modular for ease of replacement and repair. The modules and front panel of the controller shall be permanently marked to identify I/O connections, fuse holders, indicators, etc.

ii) Additional Hardware Requirements

(1) Power supply must be capable of supplying 95-250 VAC 50/60HZ Auto Sensing.

(2) Engine Board and CPU shall be compliant with the ATC Standard 5.2b as noted above.

(3) Minimum required board memory: 64 MB Flash, 64 MB DRAM, and 1 MB SRAM.

(4) There shall be no batteries or moving parts such as fans or memory storage devices with rotating parts in the controller unit.

(5) All keypads to be mounted on the controller front panel and are to be covered with a one-piece, water-resistant, poly-vinyl membrane.

(6) The active status light shall be a blue LED and be visible in direct sunlight.

(7) Controller hardware shall integrate into the controller in Caltrans style traffic signal control cabinets.

iii) Communications Ports

(1) In addition to the ATC Standard 5.2b, the traffic signal controller shall include the following communications ports and configurations:

(a) Two, two-port 10/100 Mbit Ethernet network cards with independent user programmable subnets (IP Address, Subnet Mask, and Default Gateway).
(b) One, three-port Universal Serial Bus (USB) Hub.

c) **Operating System**

i) O/S Version

(1) The Traffic Signal Controller shall use a Linux operating system (O/S) with kernel version 3.0 or later and shall include standard POSIX libraries for application support including real-time extensions of POSIX 1003.1b. To facilitate application level access to the ATC hardware, a Board Support Package (BSP) shall be provided by the controller manufacturer for access to hardware-specific drivers.

ii) O/S Updates

(2) Operating System updates shall be completed from a personal computer over an Ethernet connection, or directly from a USB flash drive plugged into the controller's front panel. The update process shall be automated and packaged as a simple executable (.exe) file enabling the user to perform the update within a few steps.

d) **Intersection Control Software**

i) The intersection control software (MaxTime) should provide at a minimum, the functionality and operations specified in the NEMA TS-2 with NTCIP v02.06 Standard. All objects and functions available in the local control software should be named and defined according to the current NTCIP standard. Additionally, non-required or manufacturer specific objects and functions should have a straight-forward, logical label and/or definition.

e) **Basic Functionality**

i) In addition to the aforementioned NEMA TS-2 Standard, the controller must satisfy the following additional requirements:

(1) 40 programmable phases.
(2) 16 timing rings that can be configured by the user to run concurrently or independently.
(3) 32 overlaps.
(4) 20 unique phase sequences that can be programmed and operated by time of day. Each sequence should allow the user to specify specific phase order and sequence beyond basic phase pair reversal/switching
(5) 128 unique timing patterns, each with a unique:
(a) Cycle length, free, or flash command.
(b) Phase split table.
(c) Offset.
(d) Phase or pedestrian recall or omit (per pattern).

ii) User must be able to easily configure:

(1) Flashing Yellow Arrow functionality.
(2) Pedestrian Overlaps.
(3) Pedestrian advance or exclusive pedestrian intervals.
(4) Trailing green sequences for compound intersections.

(5) Preemption routines in accordance with the NEMA TS-2 specification (v02.06).
(6) 72 Detectors
    (a) Ability to call multiple phases with one detector.
    (b) Detector Diagnostics.
(7) 16 Preempt Routines
(8) 32 Customizable Alarms
(9) Proposed controller (local) software can be installed on a Model 170 controller by changing only the CPU module.

f) **User Interface**

i) In addition to the front panel screen, the traffic signal controller shall have an on-board web server which hosts a graphical user interface for monitoring and configuring the intersection control software. The web server interface shall provide access from any internet enabled device with a web browser. No additional or proprietary software shall be needed to use the graphical user interface.

g) **Input/Output Configuration**

i) The intersection control software (MaxTime) shall allow the user to dynamically configure and modify input and output pins on an individual, pin by pin basis. In addition, the user shall be able to configure the signal output channels (phase/overlap to load-switch) so that any phase, overlap, or pedestrian output can drive any available load-switch in the traffic signal cabinet. The user shall be able to perform such configurations and modifications from the controller front panel or web user interface, without the need for additional configuration software or downloading additional files to the controller.

h) **Master and Peer to Peer Communications**

i) The signal controller shall be capable of operating in a closed loop network with other controllers as a master or slave controller without the need for additional software or licensing. The master unit must be able to perform the duties of a master controller in the closed loop network while simultaneously conducting traffic signal operations at the local intersection. The signal controllers within the network shall communicate with other controllers via serial or Ethernet communications.

ii) The Intersection Control Software shall support Peer to Peer functionality. Peer to Peer allows the controllers to send messages to other controllers connected in the same network via serial or Ethernet communications.

i) **User Logic**

i) In addition to standard operations specified in the NEMA TS-2 for NTCIP v02.06 Standard, the intersection control software shall have a basic logic processor. The user shall be able to specify “if-then” conditions using the basic NTCIP objects including but not limited to phase indications, detector calls, and preempt status. For example, the processor shall provide a way for the user to program the following condition in the controller front panel: “Call Detector 2 when phase 4 is green;” no additional software or licensing shall be necessary.

j) **Database Management**

i) The intersection control software and traffic signal controller shall be capable of storing multiple traffic signal databases (timing files) on the controller at any given time. The software shall allow the user to save to, or select from the list of stored databases on the controller from the front panel or web user interfaces. Databases shall be transferred between a personal computer and the traffic controller via an Ethernet connection using the web-user interface, or using a standard FAT (or FAT-32) formatted USB flash drive using the controller’s front panel user interface. The software shall provide a user interface to select and save a database from the USB flash drive to the controller when multiple databases are located on the USB flash drive.

4) Radio Specifications

a) Radio Units shall be configurable as either a Subscriber or Base station unit.
b) Radios shall be MIMO and support 300Mbps capacity using 40MHz channels
c) Radios shall be capable of automatically configuring the data streams to transmit separate data streams to double capacity or combine them to double distance.
d) The wireless device shall support operation from 4.94GHz – 5.925GHz inclusive in a single radio and be DFS compliant in the 5.25-5.35 and 5.47-5.725GHz bands.
e) The wireless device shall support 5, 10, 20 and 40MHz channel sizes.
f) Includes 1 year warranty which includes 24x7x365 Technical Support.
g) Radio Software Features
    (1) The radio must support a scheduled access protocol where a Layer 2 scheduler with built in forward error correction and buffering plus retransmission is used to ensure error free video transmission
    (2) The radio must support a Jitter Correction Algorithm that adjusts jitter timing to avoid delay fluctuation in high quality video stream
    (3) The radio must support QOS enabled by default to ensure latency control and efficient bandwidth share between multiple client devices
    (4) The radio must support Dynamic uplink vs. downlink bandwidth allocation.
    (5) The radio must support Data burst transmission to reduce protocol overhead by transmitting all packets of a single video frame in one data burst, thus increasing radio efficiency.

(6) The radio must support true Multicast

(7) The radio must support High speed mobility using IBSUP to ensure all devices connected to the mobile radio maintain their IP connections and data stream without creating unnecessary retransmissions or link re-establishments which interrupt video streaming.

(8) The radio must support IGMP snooping. This feature allows WORP to listen in on the IGMP conversation between CCTV multicast cameras and routers. By listening to these conversations the radio maintains a map of which links need which IP multicast streams. Multicasts may be filtered from the links which do not need them and thus controls which ports receive specific multicast traffic

(9) The radio must support ATPC, Adaptive Transmit Power Control, which automatically changes transmit power level to keep Signal to Noise Ratio within its optimal range to minimizes errors over the radio link

(10) The radio must support DCS, Dynamic Channel Selection, which automatically selects the best channel and frequency to minimize errors over the radio link

(11) The radio must support DDRS, Dynamic Data Rate Selection, which automatically sets the optimal data rate with minimal errors for every radio at distances from 100' to 10+ miles

(12) The wireless device shall be fully compatible with IPv4 Ethernet without conversion along with the following networking standards:

a. ICMP
b. ARP (RFC 826)
c. VLAN (802.1Q)
d. SNMPv1/v2
e. SNMP v2c
f. SNMP v3
g. HTTP(s) Server
h. Telnet
i. Secure Telnet (SSH)
j. TFTP client
k. RADIUS

(13) The wireless device shall support 128bit AES encryption between Base and Subscriber units.

(14) The wireless device shall support dual 10/100/1000 gigabit Ethernet ports and be capable of powering the 2nd Ethernet port.

(15) The wireless device shall use Power over Ethernet (PoE) to operate. The devices PoE power supply shall be equipped with the functionality required to reset reload in the event of loss of communication. The PoE supply shall allow for adequate power to supply the secondary PoE 'Out" port located on the radio.

(16) The wireless device shall be easy to install. It shall provide indicators that are readable in daylight for both Ethernet status and RF link.
(17) The wireless device must provide an Audible Antenna Alignment and include all equipment required to utilize this feature.
(18) The wireless device(s) shall support the operator's ability to select operating channel bandwidths of 5, 10, 20 or 40MHz with 1MHz channel spacing.
(19) The wireless device(s) shall support a mechanism for decreasing the receive sensitivity.
(20) The wireless device shall be rated for installation in an outdoor environment without additional enclosure and shall meet the IP67 standard.
(21) The wireless device(s) shall provide a mount for installation to a wall or pole (1.5" to 3" diameter).
(22) The wireless device, when configured as a BSU must allow for a maximum of 250 remote subscriber units (SU). The Max SU count must also be configurable to allow the operator of limiting the amount of SU's per Base Station.
(23) When configured as a Base Station in a multipoint network, and with sufficient link margin, a single unit shall be capable of providing up to 240Mbps of Layer 2 throughput. This capacity shall be dynamically assigned to remote subscriber units based upon their load and according to the QOS policy set forth within the BSU.
(24) The Wireless device(s) shall support a highly configurable Quality of Service (QOS) scheduling mechanism. QOS shall be configurable by the user via web GUI and both administered and controlled from the BSU for all associated SU's. Controls within the QOS configuration must include: Max Information Rate and Committed information rate (MIR/CIR), Latency and Jitter control with 5ms steps, Priority with 7 steps,
(25) Packet Identification Rule (PIR) – support for up to 64 PIR's.
(26) Service Flow class (SFC) – up to 32 SFC's and allow up to 8 PIRs to be associated per SFC
(27) QoS class – Allow up to 8 QoS classes and support up to 4 SFC's to be associated per QoS class
(28) The Wireless device shall support VLAN's.
(29) Transparent Mode: BSU and SU shall pass any/all packets with or without VLAN specific information.
(30) Trunk Mode: The SU and BSU shall transfer only tagged frames received on the Ethernet or wireless interface. In Trunk Mode, BSU shall support up to 256 VLAN ID's / SU shall support up to 16 VLAN ID's
(31) Mixed VLAN: Allow for Access and Trunk mode simultaneously.
(32) Q in Q 'VLAN Stacking': Using the Q-in-Q mechanism, an Outer VLAN ID and Priority are added to VLAN tagged packets on top of the existing VLAN ID, such that interference is avoided and traffic is properly routed

(33) Management VLAN: When VLAN's are enabled on the devices they shall also support provisioning of a Management VLAN to separate and secure all IP based radio management functions.
(34) The Base Station Unit (BSU) shall provide a function separate of VLAN's to block communications between SU's.
(35) The wireless device(s) shall support extensive Monitoring abilities. The ability to monitor the following values shall exist on both SU and BSU devices.
(36) Per Station Statistics: RSL, Noise, Tx Rate, Tx Success, Tx Retries, Tx Failures
(37) Ethernet interface: CRC errors, In/Out octets, In/Out Errors
(38) Wireless interface: CRC errors, In/Out octets, In/Out Errors
(39) MAC Address Learn table with indication of interface of which MAC was detected
(40) The wireless device(s) shall support temperature logging of the unit's internal temperature. Logging interval shall be user configurable in 5 minute increments between 1 and 60 minutes. Results shall be available via Web GUI. Furthermore, SNMP traps shall be sent when/if unit reaches limits defined by the manufacturer.
(41) The wireless device(s) shall support uploading or downloading of device configurations.
(42) The wireless device must support a spectrum analyzer.
(43) The wireless device(s) shall support PPPoE end point to allow connection with a PPPoE server.
(44) The wireless device(s) shall support: IP over IP or Generic Routing Encapsulation (GRE)
(45) The wireless device(s) shall support Radius Provisioning (QOS and VLAN) to provide setup via vendor specific attribute upon authentication.
(46) The wireless device(s) shall support dual login level for admin with full access and monitor only for read only access.
(47) The wireless device(s) shall support EIRP limit control
(48) The wireless device(s) shall support both radar based and manual channel blacklisting when running DFS mode
(49) The wireless device(s) shall support local or SNTP time configuration
(50) The wireless device(s) shall support local, Syslog and SNMP trap event reporting
(51) The wireless device(s) shall include sFlow Probe agent for performance monitoring
(52) The wireless device(s) shall support Frequency edge setting to restrict operation to a specific frequency band

h) Radio Power Specifications
(1) Input shall be 110/250 VAC
(2) Output shall be current .67A at 48V
(3) Power consumption shall be maximum 32 Watts when powering the second Ethernet port

(4) Power over Ethernet shall be via RJ-45 Gigabit Ethernet interface port

(5) Secondary 802.3af Gigabit Ethernet Port shall be available on Radio

i) Radio Environmental Specifications

(1) Operating temperature shall be between -40 and 60 degrees Celsius

(2) Storage temperatures shall be between -55 and 80 degrees Celsius

(3) Humidity shall be max 100% relative humidity (non-condensing)

j) Radio Physical Specifications

(1) Dimensions - Packaged 15.94 x 15.94 x 8.46 in (405 x 405 x 215 mm), Unpackaged 10.51 x 10.51 x 327 in (267 x 267 x 83 mm)

(2) Weight - Packaged 14.77 lbs (6.7kg), Unpackaged 7.27 lbs (3.3 kg)

k) Radio System Specifications

(1) Radio and Transmission Specifications

a. Modulation method shall be OFDM with BPSK, QPSK,QAM16, QAM64

b. Frequency shall be 4.94-5.925Ghz (Subject to country regulations)

c. Data Rates shall be MCS 0-15 for High Throughput mode (6.5 – 300Mbps)

d. 2x2 MIMO (Multi-Input Multi-Output)

e. Channel sizes shall be software selectable 5, 10 or 20 or 40Mhz

(2) Interfaces

a. Wired Ethernet shall be two auto MDI-X RJ45 10/100/1000Mbps Ethernet Port #1 with PoE in and Data – Port #2 with PoE out (802.3af pin out) & data

b. Wireless Protocol shall be WORP (Wireless Outdoor Router Protocol)

(3) MTBF must be greater than 250,000 hours.

Exhibit D

DELIVERABLE ACCEPTANCE FORMS

Deliverable Acceptance Form	
Phase Number:	**Phase Name/Description:**
Deliverables Included in this Submittal:	
Purpose of Deliverable Acceptance Form: This deliverable acceptance form is used for the following purposes: • Review deliverable (Project Officer)	
Comments/Notes:	
Approval: _____ **Project Manager** **Date** _____ **City Project Officer** **Date**	

Phase Acceptance Form

Phase Number: I	**Phase Name/Description:** Central System Software This phase includes the installation and configuration of the Central System Software in anticipation of the controller upgrades and ITS component integration to be performed in subsequent phases.

Deliverables Included in this Phase:

- ACTIONS:
  - Install Central System Software on City Provided Server
  - Distribute Desktop Shortcut on City Workstations

- DOCUMENTS:
  - Successful Functional Test Results
  - User Manual

Purpose of Phase Acceptance Form:
This phase acceptance form is used for the following purposes:

- Review all Phase documentation and sign off on Phase (Project Officers and Project Team managers)

Comments/Notes:

Approval:

_____

Project Manager **Date**

_____

City Project Officer **Date**

Phase Acceptance Form

Phase Number: II	**Phase Name/Description:** Controller Upgrades, New Controllers and Radio Equipment This phase consists of the integration of the existing traffic signal controllers into the new ATMS. This includes upgrade of the City's Model 2070 controllers, supplied of new Model 2070ATC controllers and the required testing and configuration of the controllers in the Central System. This phase will also include the supply and configurations of all radio equipment required under the contract and provide on-site support to the installing contractor.

Deliverables Included in this Phase:

- ACTIONS:
  - Upgrade Model 2070 Controllers, supply new Model 2070ATC Controllers and Integrate into Central System Software
  - Configure intersections in Central System Software
  - Supply and configure radio equipment along with on-site technical support to the installing contractor.

- DOCUMENTS:
  - Successful Controller Bench Test Results
  - Successful System Operational Test Results

Purpose of Phase Acceptance Form:
This phase acceptance form is used for the following purposes:

- Review all Phase documentation and sign off on Phase (Project Officers and Project Team managers)

Comments/Notes:

Approval:

_____

Project Manager **Date**

_____

City Project Officer **Date**

Phase Acceptance Form	
Phase Number: IV	**Phase Name/Description:** ITS Component Integration This phase consists of the integration of the various ITS components utilized by the City including but not limited to video detection, CCTV cameras (ONVIF compliant), GIS layers, 3rd party devices that support a web server through http protocol, etc.

Deliverables Included in this Phase:

- ACTIONS:
  - Integrate various ITS components with Central System Software per contract documents

- DOCUMENTS:
  - None

Purpose of Phase Acceptance Form:
This phase acceptance form is used for the following purposes:

- Review all Phase documentation and sign off on Phase (Project Officers and Project Team managers)

Comments/Notes:

Approval:

_____

Project Manager **Date**

_____

City Project Officer **Date**

Phase Acceptance Form

Phase Number: V	**Phase Name/Description:** Training This phase includes the training of City staff in accordance with the contract documents.

Deliverables Included in this Phase:

- ACTIONS:
  - Provide training to City staff

- DOCUMENTS:
  - Class syllabus

Purpose of Phase Acceptance Form:
This phase acceptance form is used for the following purposes:

- Review all Phase documentation and sign off on Phase (Project Officers and Project Team managers)

Comments/Notes:

Approval:

_____

Project Manager **Date**

_____

City Project Officer **Date**

Phase Acceptance Form

Phase Number:	Phase Name:
VI	Observation Period This phase includes the observation period.

Deliverables Included in this Phase:

- DOCUMENTS:
  - Completed Problem Log
  - Completed Successful Observation Period Test

Purpose of Phase Acceptance Form:
This phase acceptance form is used for the following purposes:

- Review all Phase documentation and sign off on Phase (Project Officers and Project Team managers)

Comments/Notes:

Approval:

_____

Project Manager **Date**

_____

City Project Officer **Date**

Exhibit E

MAXVIEW END-USER SOFTWARE LICENSE AGREEMENT

The MAXVIEW software was developed by the Contractor as an advanced traffic management system. This End-User License Agreement ("License Agreement") sets forth the terms under which the City may use the Software.

Access to and use of the Software is by permission of the Contractor only.

Based on the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and the Contractor agree as follows:

1. NATURE OF LICENSE AGREEMENT. This License Agreement is a part of a legal contract made between the City and the Contractor. This License Agreement contains the terms and conditions that the City must comply with if it wishes to access and use the Software.

2. LICENSE GRANT. The Contractor hereby grants to the City a nonexclusive, nonassignable, nonsublicensable, perpetual license, for their internal use only, to access and use the Software and any user's guides, specifications, and other related documentation (the "Documentation"), subject to the terms and conditions of this License Agreement. The licenses granted herein are conditioned upon payment of all applicable software fees as specified in the Main Agreement. The license granted shall have no term limit.

3. OWNERSHIP OF SOFTWARE. The Contractor retains all rights to the Software and the Documentation not specifically granted in this License Agreement. The Contractor owns the Software and the Documentation and all copyright and other intellectual property rights therein, and this License Agreement does not transfer any title to or any proprietary or intellectual property rights in or to the Software, any updates or derivative works thereto, or the Documentation, or any copyrights, patent rights, or trademarks embodied or used in connection therewith, except for the rights expressly granted in this License Agreement. The Software and the Documentation are protected by United States laws and international treaty provisions.

4. COPYING RIGHTS. The City may make copies of the Software and Documentation, as required for backup or modification purposes in support of its use of the Software and Documentation, but the City must include existing copyright notices on any such copies, or modifications. Such notice(s) may appear in several forms, including machine-readable form, and the City agrees to reproduce such notices(s) in each form in which it appears, to the extent it is physically possible to do so.

THE CITY MAY NOT USE, COPY, OR MODIFY THE SOFTWARE, IN WHOLE OR IN PART, EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS LICENSE AGREEMENT.

5. RESTRICTIONS. Except as permitted under item 5 below, to the maximum extent permitted by law, the City will not (a) modify, reverse engineer, decompile, disassemble,

or attempt to derive the source code of the Software; (b) rent, lease, loan, sell, sublicense, distribute, transmit, or otherwise transfer the Software access to any third party; (c) make any copy of or otherwise reproduce the Software; or (d) use the Software to provide service bureau or time-sharing services.

The City agrees to take all reasonable steps to safeguard the Software so as to ensure that no unauthorized person will have access to it, and that no persons authorized to have access will make any unauthorized use. The City will promptly report to the Contractor any unauthorized use of the Software of which it becomes aware and will take such further steps as may reasonably be requested by the Contractor to prevent unauthorized use thereof.

6. The Contractor places no limitations under this License Agreement on the re-distribution and re-use of the Management Information Base (MIBs) associated with the licensed software. The City is permitted to copy, re-distribute and/or reuse the MIBs as they see fit to support their authorized use of the license software.

7. CITY OBLIGATIONS. The City will be solely responsible for: (a) providing all hardware, operating system firmware, and communications capabilities required for use of the Software, including, without limitation, ATC traffic controller hardware and firmware, with the exception of the traffic controllers provided as part of the Main Agreement; (b) generating and providing City's data including traffic control parameters and data to permit the City to use the Software.

9. TERM AND TERMINATION. The license granted in this License Agreement is effective until terminated in accordance with the provisions of the Main Agreement. The term of this License Agreement and the license grant herein shall commence on the date of the execution of the Main Agreement by the City. This license shall terminate automatically on failure to comply with any of the terms of this License Agreement. On termination of this License Agreement, the City agrees to promptly destroy all printed copies and delete all electronic copies of any documentation that it has downloaded, printed, or created relating to the Software, and to ensure that no copies of any of the Software screens, data, or other content remain archived or otherwise stored on its computers. Notwithstanding termination, the provisions of Sections 3, 4, 5, 6, 7, 8, 9, 10 and 11 of this License Agreement shall survive and continue to apply.

10. CONFIDENTIALITY. The City agrees that it will not disclose to any third party the Software or any portion thereof, any technical, product, or business information, or any information that the Contractor identifies as confidential (collectively, "Confidential Information") related to the Software without the prior written consent of the Contractor. Notwithstanding the foregoing, Confidential Information does not include information that the City can demonstrate was (a) publicly available at the time of disclosure, or later became publicly available through no act or omission by the City; (b) in its possession before disclosure by the Contractor; or (c) disclosed to the City by a third party not in violation of any obligations of confidentiality to the Contractor or to any third party.

11. The contractor shall not be liable for any incidental, special, indirect or

consequential damages arising out of or relating to this license.

12. NO ASSIGNMENT. The City may not assign this License Agreement or any of the rights granted by the Contractor hereunder, in whole or in part, without the prior written consent of the Contractor, and any attempt to do so shall be void. This License Agreement is binding on and shall inure to the benefit of the parties and their respective successors and permitted assigns.

13. 3RD PARTY LICENSE. The City agrees to all 3rd party licenses documented in the Server Readme.txt file.

Exhibit F

MAXTIME END-USER SOFTWARE LICENSE AGREEMENT

The MAXTIME software was developed by the Contractor to run and control advanced traffic controller hardware. This End-User License Agreement ("License Agreement") sets forth the terms under which the City may use the Software.

Access to and use of the Software is by permission of the Contractor only.

Based on the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and the Contractor agree as follows:

1. NATURE OF LICENSE AGREEMENT. This License Agreement is a legal contract made between THE CITY and the Contractor. This License Agreement contains the terms and conditions that the City must comply with if it wishes to access and use the Software.

2. LICENSE GRANT. The Contractor hereby grants to the City a nonexclusive, nonassignable, nonsublicensable, perpetual license, for their internal use only, to access and use the Software and any user's guides, specifications, and other related documentation (the "Documentation"), subject to the terms and conditions of this License Agreement. The licenses granted herein are conditioned upon payment of all applicable software fees as specified in the Main Agreement. The license granted shall have no term limit.

3. OWNERSHIP OF SOFTWARE. The Contractor retains all rights to the Software and the Documentation not specifically granted in this License Agreement. The Contractor owns the Software and the Documentation and all copyright and other intellectual property rights therein, and this License Agreement does not transfer any title to or any proprietary or intellectual property rights in or to the Software, any updates or derivative works thereto, or the Documentation, or any copyrights, patent rights, or trademarks embodied or used in connection therewith, except for the rights expressly granted in this License Agreement. The Software and the Documentation are protected by United States laws and international treaty provisions.

4. COPYING RIGHTS. The City may make copies of the Software and Documentation, as required for backup purposes in support of its use of the Software and Documentation.

THE CITY MAY NOT USE, COPY, OR MODIFY THE SOFTWARE, IN WHOLE OR IN PART, EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS LICENSE AGREEMENT.

5. RESTRICTIONS. Except as permitted under item 6 below, to the maximum extent permitted by law, The City will not (a) modify, reverse engineer, decompile, disassemble, or attempt to derive the source code of the Software; (b) rent, lease, loan, sell, sublicense, distribute, transmit, or otherwise transfer the Software access to any

third party; (c) make any copy of or otherwise reproduce the Software; or (d) use the Software to provide service bureau or time-sharing services.

The City agrees to take all reasonable steps to safeguard the Software so as to ensure that no unauthorized person will have access to it, and that no persons authorized to have access will make any unauthorized use. The City will promptly report to the Contractor any unauthorized use of the Software of which it becomes aware and will take such further steps as may reasonably be requested by the Contractor to prevent unauthorized use thereof.

6. The Contractor places no limitations under this License Agreement on the re-distribution and re-use of the Management Information Base (MIBs) associated with the licensed software. The CITY is permitted to copy, re-distribute and/or reuse the MIBs as they see fit to support their authorized use of the license software.

7. CITY OBLIGATIONS. The City will be solely responsible for: (a) providing all hardware, operating system firmware, and communications capabilities required for use of the Software, including, without limitation, ATC traffic controller hardware and firmware, with the exception of the traffic controllers provided as part of the Main Agreement; (b) generating and providing City's data including traffic control parameters and data to permit the City to use the Software.

8. TERM AND TERMINATION. The license granted in this License Agreement is effective until terminated in accordance with the provisions of the Main Agreement. The term of this License Agreement and the license grant herein shall commence on the date of the execution of the Main Agreement by the City. This license shall terminate automatically on failure to comply with any of the other terms of this License Agreement. On termination of this License Agreement, the City agrees to promptly destroy all printed copies and delete all electronic copies of any documentation that it has downloaded, printed, or created relating to the Software, and to ensure that no copies of any of the Software screens, data, or other content remain archived or otherwise stored on its computers. Notwithstanding termination, the provisions of Sections 3, 4, 5, 6, 7, 8, 9, 10 and 11 of this License Agreement shall survive and continue to apply.

9. CONFIDENTIALITY. The City agrees that it will not disclose to any third party the Software or any portion thereof, any technical, product, or business information, or any information that the Contractor identifies as confidential (collectively, "Confidential Information") related to the Software without the prior written consent of the Contractor. Notwithstanding the foregoing, Confidential Information does not include information that the City can demonstrate was (a) publicly available at the time of disclosure, or later became publicly available through no act or omission by the City; (b) in its possession before disclosure by the Contractor; or (c) disclosed to the City by a third party not in violation of any obligations of confidentiality to the Contractor or to any third party; or (d) is required to be disclosed by law, rule, regulation or court order.

10. The contractor shall not be liable for any incidental, special, indirect or consequential damages arising out of or relating to this license.

11. NO ASSIGNMENT. The City may not assign this License Agreement or any of the rights granted by the Contractor hereunder, in whole or in part, without the prior written consent of the Contractor, and any attempt to do so shall be void. This License Agreement is binding on and shall inure to the benefit of the parties and their respective successors and permitted assigns.

Exhibit G

STANDARD WARRANTY SOFTWARE PRODUCTS

COVERED PRODUCTS

The products listed below installed at the City site are covered by this Warranty:

- ATMS - Intelight MaxView
- Controller Software - Intelight MaxTime

WARRANTY

The Contractor warrants that this Software product will perform substantially in accordance with the accompanying written materials for a minimum period of five (5) years from the date of Final Acceptance. Services described in this Exhibit shall be provided to the Contractor at no additional cost to the City.

The Contractor warrants that the software will conform to the requirements and specifications as set forth herein, and any support services provided by the Contractor shall be as described in this Contract, and the Contractor's support engineers shall make commercially reasonable efforts to solve any problems. .

This support will be provided through a combination of on-site service, remote access, telephone support and webinars, as deemed acceptable and appropriate by the City. There shall be no additional cost to the City depending on technical support method selected.

PRODUCT SUPPORT

The Contractor shall support the product for the lifetime of the product, to include additional/new software features or functionality based on future traffic component upgrades, regardless of the status of a warranty or the maintenance contract (at additional cost). If the Contractor discontinues support at any time during the product lifetime, the Contractor shall provide advance notification at least one (1) year prior to cessation of its support. At the time of notification the Contractor shall also provide any contingency plans. This includes all necessary actions to ensure a smooth transition of service with minimal disruption to the City. Sunnyvale City will be responsible for performing software updates outside of warranty or maintenance agreement.

LIMITATION OF WARRANTY

To the extent permitted by applicable statutory law, the Contractor makes no other warranty, either expressed or implied, with respect to this Software product.

SUPPORT HELPDESK

The Contractor shall make available for the term of this Warranty, during normal business hours of 8AM to 5PM EST Monday to Friday, a telephone and email helpdesk facility for the purposes of:

(a) assisting the City with the proper use of the Software;

(b) determining the causes of errors in the Software; and/or

(c) fixing errors in the Software as reasonably possible.

RESPONSE AND RESOLUTION TIMES

The Contractor shall use all reasonable endeavors to respond to requests for Services made through the helpdesk for the duration of this Warranty; and use all reasonable endeavors to resolve issues raised by the City promptly and in accordance with the following response time matrix.

The response time matrix summarizes the required problem resolution timeframes for the Contractor. All timeframes are measured from the first instance that the City contacts the Contractor, either by e-mail or phone. In this initial contact, the City representative will describe the problem and assign a level of severity to the issue. Response time is defined as the time for the Contractor to identify the problem and implement a temporary solution that does not pose a risk to public safety or neutralizes it, if such risk exists. Resolution time is defined as the timeframe within which a permanent solution must be implemented by the Contractor that permanently addresses the problem and takes steps to prevent the problem recurring again. If the problem is not resolved within the timeframes outlined below, the City may utilize other methods and/or sources of resolving the issue as it deems appropriate.

Severity	**Examples**	**Response Time**	**Resolution Time**
Critical	System is unavailable and users cannot log in. Multiple acceptance test cases fail.	4 hours	3 Business Days Hotfix Release
Serious	Intersection polling fails repeatedly throughout a 24 hour period or product crashes during commonly used scenarios and acceptance test case fails.	6 hours	5 business days Hotfix Release
Moderate	Product crashes or does not function as expected during edge case or rarely used scenarios but some acceptance test cases fail.	24 hours	10 business days Hotfix Release
Minor	Product occasionally does not work as expected during edge case scenarios that to not block core acceptance test cases.	24 hours	3-6 months Next Major Release

All claims under this Warranty must be made in writing to the Contractor and a support ticket number (SN) must be obtained. Upon issuance of a support ticket the Contractor's support engineers shall make reasonable efforts as describe above to resolve the issue.

HOTFIX RELEASE

The Contractor shall for the lifetime of the product, as needed to address product defects,

- provide copies of all such software Hotfix Release to the City promptly following the general release of the relevant Hotfix Patches to the customers; and,

- apply such Hotfix Release to the Software promptly following the general release of the relevant Hotfix Release to the customers of the Contractor through remote access.

If the hardware or operating system in use by the City is deemed not to be sufficient for installation of the Hotfix Release, then the City shall be responsible for the cost of any new hardware or software as may be required.

MAJOR RELEASE UPGRADES

The Contractor shall for the term of this Warranty,

- give to the City reasonable prior notification of the general release of an Upgrade of the covered software products,

- provide copies of all such software Upgrades to the City promptly following the general release of the relevant Upgrade to the customers; and,

- apply such Upgrades to the Software promptly following the general release of the relevant Upgrade to the customers of the Contractor through remote access or on-site support, if required.

If the hardware or operating system in use by the City is deemed not to be sufficient for installation of the Upgrade release, then the City shall be responsible for the cost of any new hardware or software as may be required.

LIMITS OF COVERAGE

The Contractor will not be held liable to the purchaser or any other party for any incidental or consequential damage or loss resulting from the failure of the covered product.

This Agreement does not include repair services due to damage caused by rain, fire, flood, lightning, tornado, windstorm, hail, earthquake, explosion, smoke, aircraft, motor vehicle, collapse of building, strike, riot, power failure or fluctuation, or other case originating by reason of other than normal operation of the software, or the City's negligence or misuse of the software.

This Agreement does not cover support, repair or warranty of any hardware or 3rd party software installed as part of the Software.

Exhibit H

MAINTENANCE AGREEMENT SOFTWARE PRODUCTS

COVERED PRODUCTS

The products listed below installed at the City site are covered by this Maintenance Agreement:

- ATM - Intelight MaxView
- Controller Software - Intelight MaxTime

MAINTENANCE AGREEMENT

The term of this Software Maintenance Agreement (Maintenance Agreement) is for up to five (5) years of post-warranty support renewable annually.

This Maintenance Agreement shall begin upon the expiration of the Standard Software Warranty (Warranty) of the covered products that is initially valid for five (5) years. This support will be provided through a combination of on-site service, remote access, telephone support and webinars, as deemed acceptable and appropriate by the City. There shall be no additional cost to the City depending on technical support method selected.

PRODUCT SUPPORT

The Contractor shall support the product for the lifetime of the product, to include additional/new software features or functionality based on future traffic component upgrades, regardless of the status of a warranty or the maintenance contract (at additional cost). If the Contractor discontinues support at any time during the product lifetime, the Contractor shall provide advance notification at least one (1) year prior to cessation of its support. At the time of notification the Contractor shall also provide any contingency plans. This includes all necessary actions to ensure a smooth transition of service with minimal disruption to the City. Sunnyvale City will be responsible for performing software updates outside of warranty or maintenance agreement.

LIMITATION OF MAINTENANCE AGREEMENT

To the extent permitted by applicable statutory law, the Contractor makes no other warranty or guarantees of support, either expressed or implied, with respect to this Software.

SUPPORT HELPDESK

The Contractor shall make available for the term of this Maintenance Agreement, during normal business hours of 8AM to 5PM EST Monday to Friday, a telephone and email helpdesk facility for the purposes of:

(a) assisting the City with the proper use of the Software;

(b) determining the causes of errors in the Software; and/or

(c) fixing errors in the Software as reasonably possible.

RESPONSE AND RESOLUTION TIMES

The Contractor shall use all reasonable endeavors to respond to requests for Services made through the helpdesk; and use all reasonable endeavors to resolve issues raised by the City, promptly and in accordance with the following response time matrix.

The response time matrix summarizes the required problem resolution timeframes for the Contractor. All timeframes are measured from the first instance that the City contacts the Contractor, either by e-mail or phone. In this initial contact, the City representative will describe the problem and assign a level of severity to the issue. Response time is defined as the time for the Contractor to identify the problem and implement a temporary solution that does not pose a risk to public safety or neutralizes it, if such risk exists. Resolution time is defined as the timeframe within which a permanent solution must be implemented by the Contractor that permanently addresses the problem and takes steps to prevent the problem recurring again. If the problem is not resolved within the timeframes outlined below, the City may utilize other methods and/or sources of resolving the issue as it deems appropriate.

Severity	**Examples**	**Response Time**	**Resolution Time**
Critical	System is unavailable and users cannot log in. Multiple acceptance test cases fail.	4 hours	3 Business Days Hotfix Release
Serious	Intersection polling fails repeatedly throughout a 24 hour period or product crashes during commonly used scenarios and acceptance test case fails.	6 hours	5 business days Hotfix Release
Moderate	Product crashes or does not function as expected during edge case or rarely used scenarios but some acceptance test cases fail.	24 hours	10 business days Hotfix Release
Minor	Product occasionally does not work as expected during edge case scenarios that to not block core acceptance test cases.	24 hours	3-6 months Next Major Release

All claims under this Maintenance Agreement must be made in writing or by telephone to the Contractor and a support ticket number (SN) must be obtained. Upon issuance of a support ticket the Contractor support engineers shall make reasonable efforts as describe above to resolve the issue.

The Contractor shall provide and perform all critical firmware and software updates (onsite and/or remote, as necessary) throughout any subsequent Contract Terms within three (3) business days after the release of the update. Critical is defined as affecting safety and/or operation of the intersection or central software. In case of a dispute whether an update should be considered critical, the City will make the final determination.

HOTFIX RELEASE
The Contractor shall for the lifetime of the product, as needed to address product defects,

- provide copies of all such software Hotfix Release to the City promptly following the general release of the relevant Hotfix Patches to the customers; and,

- apply such Hotfix Release to the Software promptly following the general release of the relevant Hotfix Release to the customers of the Contractor through remote access

If the hardware or operating system in user by the City is deemed not to be sufficient for installation of the Hotfix Release, then the City will be responsible for the cost of any new hardware or software as may be required.

MAJOR RELEASE UPGRADES

The Contractor shall for the term of this Maintenance Agreement,

- give to the City reasonable prior notification of the general release of an Upgrade of the covered software products.

- provide copies of all such software Upgrades to the City promptly following the general release of the relevant Upgrade to the customers; and,

- apply such Upgrades to the Software promptly following the general release of the relevant Upgrade to the customers of the Contractor through remote access or on-site support if required.

If the hardware or operating system in user by the City is deemed not to be sufficient for installation of the Upgrade release, then the City will be responsible for the cost of any new hardware or software as may be required.

LIMITS OF COVERAGE
The Contractor will not be held liable to the purchaser or any other party for any incidental or consequential damage or loss resulting from the failure of the covered product.

This Maintenance Agreement does not include repair services due to damage caused by rain, fire, flood, lightning, tornado, windstorm, hail, earthquake, explosion, smoke, aircraft, motor vehicle, collapse of building, strike, riot, power failure or fluctuation, or other case originating by reason of other than normal operation of the software, or the City’s negligence or misuse of the software.

This Maintenance Agreement does not cover support, repair or warranty of any hardware or 3rd party software installed as part of the Software.

Exhibit I

Utilization of Local Workforce in Construction Projects - The Sunnyvale City Council has adopted a policy which encourages utilization of local workforces, including State-certified apprentices, as a means of supporting economic opportunities for all members of the community. Local workforce is defined as workers residing in Santa Clara County. The lowest responsive and responsible bidder must provide a projection of locally-hired workers utilized for this contract.

Contractor	Projected Number of Locally Hired Workers_____ Projected Percent of Locally Hired Workers_____%
Subcontractor(s)	Projected Number of Locally Hired Workers_____ Projected Percent of Locally Hired Workers_____%