CITY COUNCIL AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Authorizing the City Manager to Enter into the Puget Sound Emergency Radio Network End User Service Level Agreement with King County			
DEPARTMENT:	Community Services Division			
PRESENTED BY:	Jason McMillan, Emergency Management Coordinator			
ACTION:	Ordinance ResolutionX_ Motion			
	Discussion Public Hearing			

PROBLEM/ISSUE STATEMENT:

The City of Shoreline uses handheld radios for day to day operations, such as coordinating Public Works, Parks and Code Enforcement and Customer Response Team activities, as well as during emergency and disaster situations. These radios operate on the King County Emergency Radio Communications System. This system is being replaced by a new radio network which will be operated and serviced by the Puget Sound Emergency Radio Network (PSERN). In order for the City of Shoreline to utilize the PSERN system and continue to have a working radio system, the City must sign a Radio End User Service Level Agreement with King County. Tonight, staff is requesting Council authorization for the City Manager to enter into this Radio End User Service Level Agreement.

RESOURCE/FINANCIAL IMPACT:

The City of Shoreline currently pays \$12,461 annually to participate in the King County Emergency Radio Communications System. While that amount is not expected to change by signing this agreement, the Agreement does state that monthly fees will be based on a formula set by PSERN, so the annual cost could increase in the future.

RECOMMENDATION

Staff recommends that Council move to authorize the City Manager to enter into the Puget Sound Emergency Radio Network End User Service Level Agreement with King County.

BACKGROUND

In 1992, the King County Emergency Radio Communications Systems (KCERCS) was founded, and when the City of Shoreline incorporated in 1995, it was added to that radio system. Recognizing that the KCERCS system was aging and inadequate to facilitate the growing need in the region, King County voters approved the creation of the Puget Sound Emergency Radio Network (PSERN) to replace the aging KCERCS system in April of 2015. The new system is currently in the testing phase with full implementation expected to occur in late 2020. The new system will be used by all 39 King County cities as well as throughout unincorporated King County.

All radios used by the City and all other KCERCS partners must be replaced as they do not have the digital capabilities to operate with the new PSERN system. Therefore, all radios that are currently listed as part of the KCERCS system will be replaced through a "radio for radio" exchange with the PSERN group in the fall of 2020.

DISCUSSION

In order for the City to participate in PSERN, the City must enter into the Radio User Service Level Agreement with King County (Attachment A). This Agreement is intended to ensure that expectations and requirements for equipment management and participation in the radio network are clear and that agency radio users meet necessary maintenance and network participation standards that will support the successful functioning of PSERN. This City's partner agencies, such as the Shoreline Fire Department, is signing their own agreement to participate in the PSERN system as well.

The term of the Radio User Service Level Agreement is indefinite, but the City may withdraw from the Agreement with one year's written notice to PSERN. The Agreement also states that the End Users will be charged a monthly fee to participate in PSERN. The City has been told that the cost to participate will continue to be the same cost (roughly \$12,500 per year) as the City is currently paying under KCERCS, although the Agreement does state that monthly fees will be based on a formula set by PSERN, so the annual cost could increase in the future.

The only alternative to participating in the PSERN system would be for the City to create and maintain an independent radio system. The creation of an independent radio network would present a major financial burden to the City, and the ongoing support of that system would add to that burden. An independent radio system would also hinder communications between the City and its partners not only during day to day operations, but during emergency and natural disaster events as well. For these reasons, staff does not recommend forgoing the opportunity to participate in PSERN.

COUNCIL GOAL(S) ADDRESSED

Participating in the PSERN system enhances communications capabilities with City partners which directly relates to City Council Goal 5 which is to "Promote and enhance the City's safe community and neighborhood programs and initiatives."

RESOURCE/FINANCIAL IMPACT

The City of Shoreline currently pays \$12,461 annually to participate in the King County Emergency Radio Communications System. While that amount is not expected to change by signing this agreement, the Agreement does state that monthly fees will be based on a formula set by PSERN, so the annual cost could increase in the future.

RECOMMENDATION

Staff recommends that Council move to authorize the City Manager to enter into the Puget Sound Emergency Radio Network End User Service Level Agreement with King County.

ATTACHMENTS

Attachment A: Puget Sound Emergency Radio Network End User Service Level Agreement with King County

RADIO END USER SERVICE LEVEL AGREEMENT

This agreement between agency radio users and King County is intended to ensure that expectations and requirements for equipment management and participation in the radio network are clear, and that agency radio users meet necessary maintenance and network participation standards that will support the successful functioning of the Puget Sound Emergency Radio network, avoiding unnecessary costs and disruptions for the many network participants. This agreement is in accordance with the Puget Sound Emergency Radio Network Implementation Period Interlocal Agreement of 2015.

City of Shoreline ("End User Agency") and King County ("County") (individually, a "Party" and collectively, the "Parties") enter this Radio End User Service Level Agreement ("Agreement") on this _____ day of _____, 20____. In consideration of the mutual covenants contained herein, the sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. **DEFINITIONS**

- 1.1 Words and terms shall be given their ordinary and usual meanings except as provided in this section or in parentheticals following the definition of a particular term.
 - 1.1.1 Accessory means all materials, special tools and any other items necessary to secure, install, operate and maintain Subscriber Equipment including: device cradles; mounting and installation hardware; power, Ethernet and any other wiring or cables and connectors; strain-relief materials; wire ties; cable labels; pre-assembled wiring harnesses of prescribed length for each vehicle type; fuses and circuit breakers; seals; adhesives; screws, bolts, washers, nuts and grommets; special tools; power supply and power conditioning devices; antennas; microphones; speakers; chargers; and holsters that are purchased by the PSERN Project for the End User Agency. [this is opposed to an accessory (lower case) that is something not provided by PSERN and which is an optional addition purchased at the expense of the End User Agency]
 - 1.1.2 **Advanced System Key** means hardware attached to a computer to enable critical parameters to be programmed in subscriber equipment.
 - 1.1.3 **Confidential Information** means any information in written, graphic, verbal, or machinerecognizable form that is: (a) related to the PSERN System; (b) provided to the End User Agency by the Contractor, the Service Provider, or the Service Provider's contractor; and (c) marked or identified as "confidential," "proprietary," "trade secret" or similar designation.
 - 1.1.4 **Contract (or Vendor Contract)** means the County's contract with Motorola Solutions, Inc., King County Contract Number 5729347.
 - 1.1.5 **Control Station** means all Equipment and Software provided under the Contract that is required to meet the Contract requirements for control stations.
 - 1.1.6 **Contractor** means Motorola Solutions, Inc. the company hired by King County to provide services for the construction, operation, maintenance or other support of PSERN.

- 1.1.7 **Emergency** means an unforeseen circumstance that causes or may reasonably be expected to cause a decrease or loss in network clarity, capacity, coverage, reliability, security, features, or functions.
- 1.1.8 **End User Agency** in the singular means the entity that is a party to this Agreement with the County. In the plural, **End User Agencies** means all entities that are parties to agreements with the County with terms substantially similar to terms in this Agreement.
- 1.1.9 Equipment means all components of the radio system infrastructure including the land mobile radio equipment and software, DC power equipment and software, site video and alarming equipment and software, backhaul equipment and software, and console system equipment and software owned by the County or PSERN Operator and used by the End User Agency pursuant to this Agreement. The term does not include Subscriber Radios. [NOTE: When the lower case word, "equipment," is used in this Agreement, that use is not intended to be the defined use of the term "Equipment."]
- 1.1.10 **Field Servicer (Servicer)** means a PSERN Operator employee, contractor, or subcontractor whose job duties include traveling to sites to repair site electronics that cannot be repaired remotely.
- 1.1.11 **Full System Acceptance (FSA)** means the determination issued to the Contractor upon satisfactorily completing the final system acceptance phase milestone.
- 1.1.12 **Government Approvals** means all necessary federal, state and local licenses, permits, and approvals for the improvements needed for the construction, Equipment installation, and operation of PSERN.
- 1.1.13 **Implementation Period** means the period of time defined as such in the Implementation Period ILA.
- 1.1.14 **Implementation Period ILA** means the Puget Sound Emergency Radio Network Implementation Period Interlocal Cooperation Agreement.
- 1.1.15 **Joint Board** means the PSERN Project governing board formed under the Implementation Period ILA.
- 1.1.16 **KCERCS** means the County-wide Emergency land mobile radio system established under the King County Emergency Radio Communication System Interlocal Agreement.
- 1.1.17 **Master Advanced System Key** means a device used to create and configure an Advanced System Key.
- 1.1.18 **Mobile Radio** means all Equipment and Software provided under the Contract that is required to meet the Contract requirements for the mobile radios.

- 1.1.19 **Monitoring** means real-time fault checking on a continuous basis using tools for remote checking and event characterization.
- 1.1.20 **Monthly Fee** (or Fee) means the monthly charge paid by the End User Agency to the Service Provider after FSA for the Service Provider's operation and maintenance of PSERN and for the End User Agency's use of PSERN.
- 1.1.21 **Mutual Aid Radios** means an end user radio from a foreign system ID which may include a Mobile, Portable or Control Station radio which has been authorized and programmed to operate on the PSERN System in only a mutual aid capacity.
- 1.1.22 **Operations Period** means the period of time as defined as such in the Operations Period ILA.
- 1.1.23 **Operations Period ILA** means the Puget Sound Emergency Radio Network Operations Period Interlocal Cooperation Agreement as executed and amended.
- 1.1.24 Part 90 means Part 90 of Title 47 of the Code of Federal Regulations (CFR).
- 1.1.25 **Portable Radio** means all Equipment and Software provided under the Contract that is required to meet the Contract specifications for the portable radios.
- 1.1.26 **Premises** means the areas near and in the End User Agency's location: the area used for staging and construction; the area Equipment will be installed and occupy inside the End User Agency's location; the area between the right-of-way and Equipment the Service Provider will use for access to the Equipment; and the area between the right-of-way and Equipment to be used for the installation and maintenance of utilities, if any.
- 1.1.27 **PSERN Board** means initially the Joint Board formed under the Implementation Period ILA, and later the board of directors for the PSERN Operator when it is formed and assumes the ownership, operations, and governance of PSERN.
- 1.1.28 **PSERN Project** means all authorized activities relating to the planning, analysis, design, development, acquisition, site development, installation, testing, training, and operation of the PSERN until FSA, starting-up a new Service Provider, transferring the PSERN to same, and any decommissioning, contract close-out and other project completion activities.
- 1.1.29 **PSERN Operator** means the agency that will be established by the parties to the Implementation Period ILA under chapter 39.34 RCW to take over PSERN's ownership, operation, and governance after FSA.
- 1.1.30 **Radio Shop** means a facility that is authorized by Contractor to perform installation, maintenance, programming and repair work on Subscriber Radios.
- 1.1.31 **Rate Stabilization Allocation** means those funds in the PSERN Project budget totaling \$2,619,406 earmarked to offset rate increases for End User Agencies and to be distributed via a formula determined by the PSERN Board.

- 1.1.32 **Resolution Time** means the period measured between the earlier of the time when the Service Provider learns of a problem or receives the repair request and the time the Service Provider deems that it has fixed the problem and notified the End User Agency of the resolution.
- 1.1.33 **Response Time** means the period measured between the earlier of the time when the Service Provider learns of a problem or receives a repair request for a problem, and the time the Service Provider has begun actively working on the service request.
- 1.1.34 **Service Provider (or Operator)** means the County during the Implementation Period and up until the transfer of ownership, operation, and governance of PSERN to the PSERN Operator. After the transfer, Service Provider means the PSERN Operator who is responsible for the day-to-day operation and maintenance of PSERN. Service Provider also includes the Service Provider's employees, agents, consultants, contractors, subcontractors, permittees, successors and assigns.
- 1.1.35 **Subscriber Radios** means paying End User Agency radios whose home system is PSERN and includes Mobile (vehicular), Portable (handheld), Control Station or consolette radios which have been authorized and programmed to operate on the System and are owned by the End User Agencies.
- 1.1.36 **Update** means revisions as required for the continued operation and maintenance of the Equipment software including error corrections, bug fixes, work-arounds, patches, antivirus definitions, intrusion detection sensor signatures, changes in third party software or changes to software and Equipment required to accommodate such third party software changes and any other fixes and changes not constituting an Upgrade.
- 1.1.37 **Upgrade** means migrating to a new platform or adding features through changes to equipment and/or software.
- 1.1.38 User means an employee, agent, or volunteer of an organization authorized to use PSERN.
- 1.1.39 **Warranty Period** means the period beginning when the Equipment is made operational by the Contractor and extending for two (2) years after Full System Acceptance, as defined in the Contract.
- 1.1.40 **Template** means a master codeplug for a specific set of radios that is used to create an Equipment codeplug with the specific radio information required for the configuration of a Portable, Mobile or Control Station Radio. The Template includes ergonomic settings, PSERN radio system information, and Mutual Aid Radio systems information that is programmed into the radio to allow operations on PSERN, KCERCS or other radio systems.

2. INITIAL EQUIPMENT REPLACEMENT

2.1 By and through the Contractor, the County will replace the End User Agency's existing radios with Subscriber Radios in the numbers and of the types specified in Exhibit 1.

- 2.2 Subscriber Radios will be standardized with features, functions and Accessories chosen to make them suitable for use by End User Agencies. The End User Agencies may purchase additional Subscriber Radios, features, and accessories. The method and timing of payment for additional equipment will be established by the Joint Board.
- 2.3 Subscriber Radios will be issued according to the policies of the Joint Board as listed below, and as amended by the Joint Board:

Only For KCERCS Customers:

- 2.3.1 The PSERN Project will replace governmental agency and hospital agency active radios that were activated, into KCERCS zone controllers as active radios and assigned IDs 120 days prior to the first End User Agency's Subscriber Radio planned deployment and/or installation dates;
- 2.3.2 Non-hospital private agencies that are on the KCERCS will have their radios replaced on a 1 for 1 basis according to the agency inventory records as of April 25, 2019;
- 2.3.3 All End User Agency must turn an existing working radio in to the PSERN Project for each Subscriber Radio provided by the Project to the End User Agency;
- 2.3.4 End User Agency may keep old radios not needed for Subscriber Radio exchange to use on PSERN if they are approved by the Service Provider as meeting minimum PSERN software configurations and manufacturers specifications; and
- 2.3.5 End User Agency will pay Monthly Fees for each of its Subscriber Radios unless exempted otherwise by the policies of the Service Provider.

For all other agencies:

- 2.3.6 Agencies wanting to be on PSERN but not already on KCERCS may be issued Subscriber Radios pursuant to policies and terms and conditions adopted by the PSERN Board, but only if they commit to remaining as an End User Agency for a minimum of 10 years.
- 2.4 By and through the Contractor, the County initially will configure, program, install and or deploy the Subscriber Radios using the previous template and perform like for like programming. After the initial templates are created and programmed, the PSERN Operator will be responsible for archiving and centrally storing templates as well as infrastructure configuration changes within the templates. The Radio Shops will be responsible for End User Agency configuration settings only. The Master Advanced System Key shall be maintained by the PSERN Operator. The PSERN Operator shall establish policies to determine which Subscriber Radio maintenance shops will be eligible to receive a system key.
- 2.5 The PSERN Operator will maintain a list of radios approved for use on the PSERN system. The End User Agency agrees to use only approved radios on PSERN and to not program or cause radios to be programmed in a way that they would operate in the P 25 Phase 1 mode of operation while operating on PSERN.

- 2.6 The County will own the Equipment provided by the PSERN Project. After the new PSERN Operator is formed, ownership of this Equipment shall be transferred to the PSERN Operator at no cost to the End User Agency or to the PSERN Operator.
- 2.7 Ownership of County-purchased Subscriber Radios will be transferred to the End User Agency within the same fiscal year that the Subscriber Radios are put into service provided that the Subscriber Radios are put into service at least ninety (90) days prior to the end of the fiscal year. If the Subscriber Radios are put into service less than ninety (90) days prior to the end of the fiscal year, then ownership will be transferred within ninety (90) days from the date they are put into service.
- 2.8 The Train-the-Trainer model will be used to train End User Agency staff to use the Subscriber Radios. Each End User Agency shall designate staff to be trained, and supply that (those) name(s) to the Service Provider. The trainers will receive detailed training on use of the Subscriber Radios from the Contractor.

3. TRANSITION PLAN

- 3.1 The Service Provider and End User Agency will work with the Contractor to develop a mutually agreeable written transition plan. The transition plan will be approved by the PSERN Joint Board.
- 3.2 The transition plan will include:
 - 3.2.1 A list of equipment that the End User Agency shall receive as part of the PSERN Project;
 - 3.2.2 An installation plan for all vehicles receiving equipment;
 - 3.2.3 A plan describing how End User Agencies will migrate from analog to digital operations; and
 - 3.2.4 A plan describing the training plan for each End User Agency.

4. INSTALLATION AND TESTING

- 4.1 If the End User Agency has any special requirements pertaining to the disposition of its existing radios it shall notify the Service Provider as soon as practicable, but no less than within five (5) business days of receiving notification of installation and transition.
- 4.2 The Service Provider shall secure all Government Approvals required for the installation and operation of the Subscriber Radios.
- 4.3 All Subscriber Radios will be programmed and tested prior to deployment and/or installation by the Contractor to determine if they are operating in accordance with manufacturer's specifications.
- 4.4 The Service Provider will coordinate with the End User Agency regarding the installation schedule as far in advance as possible, but no less than at least fifteen (15) business days in advance.

5. OPERATIONS

- 5.1 In implementing and managing PSERN, the Service Provider shall:
 - 5.1.1 Be responsible for, or during the Warranty Period ensure the Contractor is responsible for, the repair of defective Equipment, and for programming and installing Equipment purchased and installed during the Implementation Period;
 - 5.1.2 Monitor PSERN for proper operations in accordance with the standards specified herein and monitor for any failure symptoms;
 - 5.1.3 Maintain, operate, repair, Update, Upgrade and test PSERN in accordance with the Equipment manufacturer's recommendations for routine maintenance;
 - 5.1.4 Provide the End User Agency with a phone number and email address to report system problems. The phone number shall be reachable and Monitored 24 hour X 7 day X 365 days per year;
 - 5.1.5 Respond to network and Equipment problems in accordance with Response and Resolution Tables contained in **Exhibit 2**;
 - 5.1.6 Purchase the Contractor's Radio Service Advantage (RSA) product offering which will provide 7 years of support for Subscriber Radios after the conclusion of the two-year warranty period. During the 7 years of RSA support, End User Agencies will be able to receive repairs to Subscriber radios without incurring Contractor's depot level repair costs. However, any Subscriber Radio needing repair or replacement due to the intentional or negligent act of the End User Agency, its agents, employees, or invitees, will be repaired or replaced by the Radio Shop at the Radio End User Agency's cost. Such cost is in addition to the Monthly Fee. Disputes regarding the responsibility for repair or replacement cost will be resolved pursuant to Section 23;
 - 5.1.7 Have factory-trained subject matter experts (Duty Technician(s)) on staff who specialize in the diagnosis, troubleshooting and resolution of network performance and Equipment problems;
 - 5.1.8 Have a Duty Technician to act as liaison between itself and the Contractor;
 - 5.1.9 Resolve Equipment warranty claims with the Contractor;
 - 5.1.10 Manage talkgroup site access profiles;
 - 5.1.11 Give the End User Agency at least thirty (30) days' notice before undertaking scheduled activities that will interrupt or reduce service capacity by twenty-five percent (25%) or more;
 - 5.1.12 Centrally manage the distribution and archiving of regional encryption keys;

- 5.1.13 Centrally manage the creation of new talkgroups (however, per Section 5.3, End User Agencies will own their own existing talkgroups);
- 5.1.14 Centrally archive templates for radio programming of End User Agency radios;
- 5.1.15 Centrally manage the use of integrated voice and data applications such as over-the-air rekeying, over the air programming, outdoor location (GPS information) and radio management;
- 5.1.16 Ensure public safety agencies have priority of service on the PSERN system; and
- 5.1.17 Maintain the PSERN system to the following standards as specified in the Contract and as implemented by the Contractor prior to FSA:
 - 5.1.17.1 Delivered Audio Quality 3.4;
 - 5.1.17.2 97% reliability;
 - 5.1.17.3 97% portable on-street coverage in the Primary Bounded Area;
 - 5.1.17.4 95% portable on-street coverage in the Highway Buffer Covered Areas;
 - 5.1.17.5 Grade of Service of 1.0;
 - 5.1.17.6 99.999% availability of backhaul;
 - 5.1.17.7 at least 17db added signal above the baseline PSERN design within the designated in-building coverage areas (downtown Seattle, downtown Bellevue, and north central Renton; and
 - 5.1.17.8 Provide 97% portable on-street coverage in the in-building coverage areas. The Contractor shall provide a System that achieves 97% SAR (service area reliability).
- 5.2 Following execution of the Operations Period ILA and formation of the PSERN Operator, the PSERN Operator shall:
 - 5.2.1 Develop and adopt a maintenance & operations plan that includes:
 - 5.2.1.1 Talkgroup prioritization levels and site authorizations;
 - 5.2.1.2 Authorized template configuration changes by Radio Shops;
 - 5.2.1.3 System maintenance standards;
 - 5.2.1.4 Technician/System manager administrative rights;
 - 5.2.1.5 Training requirements for technical staff;

- 5.2.1.6 Distribution, management, and archiving of regional and End User Agency encryption keys;
- 5.2.1.7 System key management and distribution;
- 5.2.1.8 OTAP/OTAR roles and responsibilities;
- 5.2.1.9 Issue resolution reporting procedures including system status, repairs made, impacted area, etc.;
- 5.2.1.10 Continuity of operations procedures;
- 5.2.1.11 Procedures for End User agencies to add radios to their inventory at their own cost;
- 5.2.1.12 Talkgroup sharing agreement requirements; and
- 5.2.1.13 Conventional channel sharing agreements.
- 5.2.2. Adopt policies governing the replacement, removal, and addition of Equipment under its control;
- 5.2.3. Adopt policies related to the access of PSERN for mutual aid and/or interoperability purposes;
- 5.2.4. Adopt policies defining the approved Equipment and Subscriber Radios authorized for use in PSERN;
- 5.2.5. Adopt policies defining mandatory configuration settings that must be set into each authorized Subscriber Radio;
- 5.2.6. Adopt and implement information assurance controls, policies, procedures and processes;
- 5.2.7. Adopt policies governing the change management program;
- 5.2.8. Work in partnership with the End User Agencies to develop and regularly report on performance and operating metrics indicating system performance as well as the PSERN Operator's ability to meet the End User Agencies service requirements; and
- 5.2.9. Upon request by End User Agencies, provide reports of system usage and equipment inventories.
- 5.3 In using the Equipment and PSERN, the End User Agency agrees to:
 - 5.3.1 Be responsible for replacement at its cost of any Subscriber Radios that are stolen, damaged, lost or which are determined by the End User Agency to be beyond their expected life if not covered by the radio repair procedures as described in Section 5.4;

- 5.3.2 Use only radio codeplugs that have been configured by the PSERN Operator;
- 5.3.3 Create and distribute End User Agency encryption keys;
- 5.3.4 Own and control their own talkgroups;
- 5.3.5 Ensure all trunked radios are capable of being configured for P25 Phase II operation;
- 5.3.6 Prevent unauthorized and untrained personnel from accessing Subscriber Radios;
- 5.3.7 Promptly report Equipment and network problems to the Service Provider and indicate the impact of the problem on the End User Agency (e.g., if a channel is garbled, features are not working correctly, or if coverage conditions in a known area have changed);
- 5.3.8 Comply with all applicable information assurance controls, policies, procedures, and processes developed and implemented by the PSERN Operator;
- 5.3.9 Maintain an accurate system for tracking all Subscriber Radio purchased by the PSERN Project or acquired by the End User Agency and immediately notify the System Provider if the End User Agency knows or suspects that a Subscriber Radio has been lost, stolen, or damaged so that the System Provider can take any necessary actions which may include disabling the Subscriber Radio;
- 5.3.10 Not permanently transfer, dispose of, or allow an entity or individual outside the User Agency to use Subscriber Radios without the PSERN Board's prior written approval for a period of 7 years after Full System Acceptance (Any radios disposed of under this subsection shall be deprogrammed by a Radio Shop prior to disposal);
- 5.3.11 Assist the Service Provider in responding to any correspondence, complaint, information request, or claim it receives that pertains to End User Agency operations;
- 5.3.12 Use a Radio Shop of its choice to perform all installation, maintenance, programming and repair work on Subscriber radios;
- 5.3.13 Perform, or have performed, preventative maintenance of its Subscriber Radios in accordance with manufacturer's recommendations and schedules;
- 5.3.14 Perform, or have performed, periodic Updates of subscriber operating system as determined by the Service Provider;
- 5.3.15 Allow Service Provider the right to inspect applicable Equipment which the End User Agency controls access to in order to verify operations of the Equipment are within the manufacturer's specifications and Federal Communications Commission rules; and
- 5.3.16 Not modify Subscriber Radio hardware or software operating characteristics, such as modifying the transmit power levels of mobile radios or replacing the antennas with higher gain antennas on mobile or portable radios without the approval of the PSERN Operator.

- 5.4 Radio Repair Procedures:
 - 5.4.1 After initial Contractor installation and up to and during the Warranty Period, the End User agency will use a Radio Shop of its choice to perform all installation, maintenance, programming, and repair work on Subscriber Radios and ensure that during the two year warranty period the Radio Shop will:
 - 5.4.1.1 Initiate a service request with Contractor by requesting a Return Merchandise Authorization (RMA); and
 - 5.4.1.2 The Radio shop shall remove failed units from the vehicles and reinstall new units and ship the units to Contractor.
 - 5.4.2 Contractor will:
 - 5.4.2.1 Provide the Radio Shop with an RMA, provide a new Subscriber Radio replacement unit with the latest firmware release, and reimburse the Radio Shop and End User Agency for their costs (including troubleshooting time, owner travel time, removal and installation of the radio, reprogramming, and inventory actions).
 - 5.4.3 Upon completion of the warranty period:
 - 5.4.3.1 The Radio Shop will initiate a service request via Motorola Online (MOL) and reference the Contract Number (#5729347) for repair;
 - 5.4.3.2 Contractor is responsible for inbound and outbound shipping and tracking of each shipment; and
 - 5.4.3.3 End User Agency may have to pay fees for the removal/installation of Mobile Radios or Control Stations per any applicable Radio Shop service agreements and rates.
- 5.5 The Change management program to be adopted pursuant to Section 5.2 shall be mutually agreed to by the Parties and shall include:
 - 5.5.1 Request for change (RFC) documentation;
 - 5.5.2 Classification of the RFC quantifying the risk/impact and the category;
 - 5.5.2.1 Risk/Impact may be: low, medium, high; and
 - 5.5.2.2 Category may be: standard or Emergency.

- 5.5.3 Assessment and Authorization of the RFC;
- 5.5.4 Communication with dispatch centers of the RFC's implications;
- 5.5.5 Implementation of the change;
- 5.5.6 Assessment of the quality of the implementation; and
- 5.5.7 Closure of the RFC record.

6. RESPONSE AND RESOLUTION TIMES TO INFRASTRUCURE IMPAIRMENTS

- 6.1 During the Warranty Period when a User reports or the Monitoring equipment detects a problem and reports it to the Service Provider, a trained technologist will acknowledge and attempt to remotely diagnose the problem. Appropriate responses could include continuously Monitoring the event for further development, attempting remote remediation, or dispatching a Field Servicer (Servicer) for onsite remediation.
- 6.2 The table in Exhibit 2 lists Response Times for three levels of severity and the correlating Resolution Time for each.
- 6.3 The Service Provider shall repair or replace a defective piece of Equipment at no cost above the Monthly Fee.
- 6.4 The Service Provider will keep or have access to sufficient spare parts and pieces of Equipment so that defective, broken, or wrongly programmed Equipment can be promptly replaced or repaired.

7. EQUIPMENT UPDATES AND UPGRADES

- 7.1 Equipment Updates
 - 7.1.1 During the Warranty Period, the Contractor shall provide and install Equipment Updates. Thereafter, the Contractor shall provide Updates that shall be installed by the Service Provider. The cost of Updates shall be included in the Monthly Fee.
 - 7.1.2 Regular Updates shall include:
 - 7.1.2.1 Contractor's most current software enhancement release Update which includes defect corrections, bug fixes, patches, and service packs.
 - 7.1.2.2 Patch releases, service packs and other non-security-related Updates released by Contractor, its subcontractors if applicable, and other providers of Equipment operating and application software including Microsoft, Red Hat Linux, Sun Solaris, and other third parties.

- 7.1.2.3 Contractor's regular security-related Updates, referred to by Contractor as "Security Update Service" (SUS) that include operating system patches and service packs, anti-virus engines and definitions, intrusion detection systems and signatures, and firewall setting and other security-related Updates.
- 7.1.3 Updates to software necessary as a result of a failure will be provided based on the severity level of the failure as follows:
 - 7.1.3.1 For failures that affect PSERN service, traffic/capacity, operations, material functions, maintenance capabilities or system administration, the Service Provider shall commence corrective action immediately and exercise its best efforts to work with the Contractor to develop, test, and install a fix in the shortest time possible.
 - 7.1.3.2 For failures that do not affect PSERN service, traffic/capacity, operations, material functions, maintenance capabilities or system administration, the Service Provider shall work with the Contractor to develop, test, and install the fix as part of an Update to be otherwise provided in this Section.
- 7.1.4 Prior to installation of an Update, the Service Provider shall confirm that the Update has been successfully tested to ensure the Update is compatible and that it will not degrade, interfere with, or otherwise compromise PSERN's functionality. Updates may be loaded remotely or locally as determined by the Service Provider.
- 7.1.5 The Service Provider will routinely install Updates, but may defer or decline to install an Update or roll back one or more Updates if the Service Provider in its sole discretion determines that the Update would be detrimental to PSERN's functionality.
- 7.1.6 The Service Provider will notify End User Agencies in accordance with the change management program as detailed in Section 5.5 in advance of routine Updates and will provide applicable release notes with each Update. In the case of Updates installed under Section 7.1.3, notice will be provided to the Users with as much lead time as practicable.
- 7.2 Equipment Upgrades
 - 7.2.1 During the Warranty Period, the Contractor shall provide and install Equipment Upgrades. Thereafter, the Contractor will provide Upgrades that will be installed by the Service Provider. The cost of Upgrades shall be included in the Monthly Fee.
 - 7.2.2 The most recent available Upgrades of the Equipment software and hardware shall be provided at the following points in time: (1) no more than ninety (90) days prior to the start of the FSA testing period; (2) no more than ninety (90) days prior to the end of the Warranty Period; (3) after the Warranty Period, every other year beginning with 2023 subject to availability from the Contractor. The Service Provider may defer or suspend an

Upgrade if it determines in its sole discretion that the Upgrade would be detrimental to PSERN's functionality.

- 7.2.3 Each Upgrade will include the latest versions of Contractor software and the latest versions of third party software certified for the system and shall include all Updates available at the time of the Upgrade if not already installed under Section 7.1.
- 7.2.4 Prior to installation of an Upgrade, the Service Provider shall confirm that the Upgrade has been successfully tested to ensure the Upgrade is compatible and that it will not degrade, interfere with, or otherwise compromise PSERN's functionality. Upgrades may be loaded remotely or locally as determined by the Service Provider.
- 7.2.5 If an Upgrade requires additional or different Equipment, the Service Provider (by and through the Contractor during the Warranty Period) shall provide and install the necessary Equipment. The cost of the software and Equipment required for the Upgrade, if any, shall be included in the Monthly Fee.
- 7.2.6 The Service Provider will notify End User Agencies in accordance with the change management program as detailed in Section 5.5

8. MONTHLY FEE AND PAYMENT

- 8.1 The End User Agency agrees to pay the PSERN Operator a Monthly Fee for the End User Agency's use of PSERN and the PSERN Operator's operation and maintenance of the Equipment and network. The Monthly Fee shall be calculated using a formula determined by the PSERN Board.
- 8.2 The Monthly Fee will be assessed beginning immediately after FSA for each End User Agency radio with an active ID in the radio system core. In the first month, the Monthly Fee shall be assessed on a prorated basis based on the number of days the radio is in service and will apply to Subscriber Radios used in the field, dispatch center back up radios and recording radios. The PSERN Operator shall provide an invoice to the End User Agency. The first payment will be due on the first day of the first full month after FSA, and shall equal the amount due for that month and any pro-rated amount for the first month of service.
- 8.3 Monthly Fee payments will be due on the first day of each month, except that at the End User Agency's sole option it may make annual advance payments in lieu of monthly installments. Payments made will be applied first to charges that are in arrears and then to the payment due for that coming month.
- 8.4 The first payments after FSA may be reduced based on the PSERN Board's disbursement of the Rate Stabilization Allocation for those End User Agencies that will see a rate increase as a result of PSERN operations.

- 8.5 The PSERN Operator shall provide the End User Agency with the address for payment of Fees not less than sixty (60) days prior to the date the first payment is due. All payments shall be accompanied by a reference to this Agreement, or an invoice number.
- 8.6 If the End User Agency does not pay its Fee or pays only a part of the Fee more than twice in any single calendar year, the PSERN Operator may charge the End User Agency a reasonable late or special handling charge.
- 8.7 The PSERN Operator's acceptance of any payment or partial payment after the date it is due shall not be deemed a waiver regarding the End User Agency's obligations to make future payments on time. And no partial payment shall act as an accord and satisfaction unless approved by the PSERN Board.
- 8.8 OTHER FEES: The Service Provider may maintain and publish fees for services in support of End User Agency's operations unrelated to the PSERN Equipment. Such fees may include activation and deactivation fees and time and materials rates for non-PSERN equipment servicing. End User Agencies may use these ad hoc services, if offered, which may consist of:
 - 8.8.1 Time and materials fees in support of UHF systems and equipment, VHF systems and equipment, non-PSERN Microwave equipment and fiber optic networking
 - 8.8.2 Consultation service fees for communication equipment or systems
 - 8.8.3 Consultation service fees for in-building coverage equipment such as bi-directional amplifiers or distributed antenna systems

9. TERM

- 9.1 This Agreement shall take effect when executed by authorized representatives of the Parties, and shall remain in effect unless one of the following events occurs:
 - 9.1.1 The Parties execute a superseding agreement;
 - 9.1.2 The End User Agency withdraws from the Agreement as provided in Section 16.1; or
 - 9.1.3 The PSERN Board terminates the Agreement as provided in Section 16.2.

10. COMPLIANCE WITH APPLICABLE LAWS, REGULATIONS, AGREEMENTS, POLICIES, PROCEDURES, AND PERMITS

The Parties acknowledge: 1) that they are required to comply with various laws, regulations, agreements, policies, procedures, and permits, including those contained in 47 CFR §90, those developed by the PSERN Board and the Service Provider, and those contained in the Implementation Period ILA and the Operations Period ILA, if the End User Agency is a party to those agreements; and 2) that the County is subject to the Vendor Contract's terms and

conditions in the performance of this Agreement. The Parties agree to comply with the applicable laws, regulations, agreements, policies, procedures, and permits.

11. REPRESENTATIONS AND WARRANTIES

- 11.1 The End User Agency represents, warrants, and agrees that:
 - 11.1.1 It will work cooperatively, fully, and promptly with the Service Provider;
 - 11.1.2 It has the full right, power, and authority to enter into this Agreement; and
 - 11.1.3 It does not know any reason why its execution and performance of this Agreement would violate any laws, covenants, or the provisions of any mortgage, lease or other binding agreement.
- 11.2 The Service Provider represents, warrants, and agrees that:
 - 11.2.1 It will work cooperatively, fully, and promptly with the End User Agency;
 - 11.2.2 It has the full right, power and authority to enter into this Agreement;
 - 11.2.3 It does not know any reason why its execution and performance of this Agreement would violate any laws, covenants or the provisions of any mortgage, lease or other binding agreement.

12. NOT USED

13. INDEPENDENT CONTRACTORS AND NO THIRD PARTY BENEFICIARIES

- 13.1 Each Party is an independent contractor with respect to this Agreement. No joint venture or partnership is formed as a result of this Agreement.
- 13.2 This Agreement is solely for the benefit of the Parties, and gives no right or remedy to any other person or entity.

14. ASSIGNMENTS

14.1 By Service Provider

The County may assign this Agreement and all of the County's rights, duties, and obligations set forth herein, to the PSERN Operator without the End User Agency's approval. However, such assignment shall require approval by the PSERN Board.

14.2 By the End User Agency:

The End User Agency may not assign any of its rights, duties, or obligations set forth in this Agreement except as approved in writing by the PSERN Board and the Service Provider.

15. RECORDS

Each Party shall keep records as required by state law. To the extent permitted by law, all records, accounts and documents relating to matters covered by this Agreement shall be subject to inspection, copying, review or audit by the Washington State Auditor or any Party. Upon reasonable notice, during normal working hours, each Party shall provide auditors from the Washington State Auditor or the other Party with access to its facilities for copying said records at their expense. If a Party receives a request for records under the Washington State Public Records Act for records that meet the definition of Confidential Information, and if the Party determines such record is or may be subject to disclosure, the Party's sole obligation to protect the confidentiality shall be to notify the entity or individual claiming confidentiality of the request and the date that such Confidential Information will be released. Such individual or entity, shall have the option of obtaining a court order to enjoin disclosure pursuant to RCW 42.56.540.

16. ENDING SERVICE

- 16.1 End User Agency may apply for withdrawal from this Agreement with at least one year's written notice of its intent to withdraw. Such applications shall be handled in accordance with the PSERN Board's rules.
- 16.2 After giving the End User Agency a reasonable period of time to cure, the PSERN Board may terminate this Agreement for the End User Agency's repeated violations of the Agreement terms. The PSERN Board may immediately terminate this Agreement where an action or inaction of the End User Agency significantly diminishes or threatens to significantly diminish the operations of PSERN or results in the loss of or threatened loss of PSERN's spectrum licenses. Termination actions shall be handled in accordance with the PSERN Board's rules.

17. INDEMNIFICATION

Each Party shall save harmless the other Party, its officers, officials, employees and agents while acting within the scope of their employment as such, from any and all suits, costs, claims, actions, losses, penalties, judgments, and/or awards of damages, of whatsoever kind arising out of, or in connection with, or incident to the services associated with this Agreement caused by or resulting from each Party's own negligent acts or omissions. Each Party agrees that it is fully responsible for the acts and omissions of its own contractors, subcontractors, their employees and agents, acting within the scope of their employment as such, as it is for the acts and omissions of its own employees.

18. INSURANCE

18.1 King County Insurance

The County maintains a self-insurance program for the protection and handling of its liabilities including injuries to persons and damage to property. The End User Agency acknowledges, agrees

and understands that the County is self-funded for all of its liability exposures for this Agreement.

18.2 The PSERN Operator

Upon the transfer of PSERN to the PSERN Operator, the PSERN Operator shall either maintain a fully funded self-insurance program in accordance with applicable law or acquire and maintain commercial general liability insurance in the amount of Five Million Dollars (\$5,000,000) per occurrence and Five Million Dollars (\$5,000,000) general aggregate, based on ISO Form CG 00 01 or equivalent.

18.3 Contractors and Subcontractors Insurance

The County and PSERN Operator shall require their contractors and subcontractors to maintain general liability insurance for all activities related to installation and servicing of the equipment at the Centers.

18.4 End User Agency's Insurance

The End User Agency agrees to maintain a self-insurance program or to procure and maintain the following minimum insurance coverage areas and limits, or comparable program(s) of self-insurance, responsive to its liability and property exposures under this Agreement:

- 18.4.1 General Liability: Insurance Services "occurrence" form CG 00 01 (current edition), or its substantive equivalent. Commercial General Liability coverage shall be no less than ONE MILLION DOLLARS (\$1,000,000) per combined single limit per occurrence, and TWO MILLION DOLLARS (\$2,000,000) in the aggregate for bodily injury and property damage.
- 18.4.2 Workers' Compensation/Stop Gap/Employers Liability: Statutory Workers Compensation coverage and Stop Gap Liability for a limit no less than ONE MILLION DOLLARS (\$1,000,000) per occurrence.

19. NOTICES

Written notice for purposes of Sections 16, 18 and 23 must be either delivered by courier or sent by certified mail, return receipt requested, to the address listed below. Notices shall be deemed effective upon the earlier of receipt when delivered, or, if mailed, upon signature on the return receipt. A Party may change the address for notices from time to time by providing the other Party(ies) the replacement name and contact information. Notice shall not be effective unless and until the other Party(ies) has (have) received this information.

To the End User Agency: Debbie Tarry, City Manager City of Shoreline 17500 Midvale Avenue N Shoreline, WA 98133 To the County or PSERN Operator: Hai Phung, Project Manager King County Department of Information Technology 401 5th Avenue Seattle, WA 98104

20. AMENDMENT

This Agreement may be amended only upon mutual written agreement of the Parties and approval of the PSERN Board.

21. FORCE MAJEURE

Acts of nature, acts of civil or military authorities, acts of war, terrorism, fire, accidents, shutdowns for purpose of Emergency repairs, strikes and other labor disruptions, and other industrial, civil or public disturbances that are not reasonably within the control of a Party causing the Party's inability to perform an obligation under this Agreement are "Force Majeure Events." If any Party is rendered unable, wholly or in part, by a Force Majeure Event, to perform or comply with any obligation or condition of this Agreement, such obligation or condition shall be suspended for the time and to the extent reasonably necessary to allow for performance and compliance and restoration of normal operations.

22. CONFLICT WITH OTHER AGREEMENTS

If any provision of this Agreement conflicts with a provision of the Implementation Period ILA, the Operations Period ILA, or the lease between the End User Agency and King County (or Service Provider as applicable), if any, such that the provisions cannot be harmonized, then the provisions of the applicable ILA or lease shall control over this Agreement.

23. DISPUTE RESOLUTION

If a dispute arises out of or relates to this Agreement, the Parties shall endeavor to resolve the dispute through direct negotiations between them. If the Parties are unable to resolve the dispute within sixty (60) days of its occurrence, either Party may refer the dispute to the PSERN Board for resolution and shall provide the other Party with notice of such referral. If the dispute is not resolved by the PSERN Board within sixty (60) days of referral to it, either Party may refer the dispute to the executive officers of the Parties. If the dispute is not resolved by the executive officers of the Party may refer the dispute to non-binding mediation. The parties to the dispute shall share the costs of mediation equally. Referral of the dispute to the PSERN Board, the executives, and mediation shall be a condition precedent to a Party's pursuit of other available legal remedies.

24. CHOICE OF LAW AND VENUE

This Agreement and any rights, remedies, and/or obligations provided for in this Agreement shall be governed, construed, and enforced in accordance with the substantive and procedural laws of the State of Washington. The Parties agree that the King County Superior Court, Washington shall have exclusive jurisdiction and venue over any legal action arising under this Agreement.

25. NO WAIVER

No term or provision of this Agreement shall be deemed waived and no breach excused unless such waiver or consent shall be in writing and signed by the Party claimed to have waived or consented. Waiver of any default of this Agreement shall not be deemed a waiver of any subsequent default. Waiver of breach of any provision of this Agreement shall not be deemed to be a waiver of any other or subsequent breach. Waiver of such default or breach shall not be construed to be a modification of the terms of this Agreement unless stated to be such through written approval of the Parties.

26. EXECUTION AND COUNTERPARTS

This Agreement may be executed in counterparts, any one of which shall be deemed to be an original, and all of which together shall constitute one and the same instrument.

27. SURVIVAL PROVISIONS

The following provisions shall survive and remain applicable to each of the Parties notwithstanding any termination or expiration of this Agreement and notwithstanding a Party's withdrawal from this Agreement.

Section 15 Records Section 17 Indemnification Section 19 Notices

Section 24 Choice of Law and Venue

28. SEVERABILITY

The invalidity of any provision of this Agreement shall not affect the validity of the remaining provisions.

IN WITNESS WHEREOF, authorized representatives of the Parties have signed their names in the space provided below.

King County

City of Shoreline

David Mendel, Director, King County Emergency Radio Communications Debbie Tarry, City Manager City of Shoreline

Exhibit 1

List of equipment for End User Agency

The quantities of equipment listed here will be based on the preliminary radio inventory. The parties agree that prior to radio replacement final inventory numbers will be mutually agreed to, subject to the replacement polices adopted by the PSERN Joint Board.

Portable	Radio Location Capable	Encryption with Over The Air Re-keying	Portable Radio quantity with microphone 2 batteries, case	Individual Charger	6 Pocket Charger
Other Gov't	No	No	34	34	0
Police	Yes	Yes	0	0	0
Fire/EMS	Yes	Yes	0	0	0

Shoreline City

Mobile	Radio Location Capable	Encryption with Over The Air Re-keying	Dash mount radio	Trunk mount radio	Dual head radio	Quad head radio	Motorcycle radio
Other Gov't	No	No	9	0	0	0	0
Police/Fire/EMS	Yes	Yes	0	0	0	0	0

Base	Radio Location Capable	Encryption with Over The Air Re-keying	Consolette radio	Desktop radio
Other Gov't	No	No	0	3
Police/Fire/EMS	Yes	Yes	0	0

Total Radios

46

All radios come with 700/800 MHz Trunked/Conventional P25 & Smartzone Trunking, Over the Air Programming, Radio Authentication, Integrated Voice and Data, Advanced System Key

Exhibit 2 Response and Resolution Tables

Severity	En-Route	Restoration and Replacement	Examples
Level	Response Time	Times	
Severity 1	Field Servicer shall be en- route within thirty (30) minutes after Contractor or Service Provider detects or is notified of the failure, whichever occurs first.	Within four (4) hours of detection or report of failure, whichever occurs first, restore full functionality to land mobile radio equipment and software, microwave system equipment and software and MPLS equipment and software and if equipment is malfunctioning, install FRU. Concerning equipment and software not listed above, Service Provider's goal is to resolve all Severity 1 failures within two hours of arrival. However, it is possible that some resolutions could require additional time and effort due to multiple item failure, antenna system failure, etc. In any event, Service Provider is committed to failure resolution as rapidly as possible, utilizing all available resources to resolve the failure as soon as possible.	 Failure of any system control equipment element. (e.g. equipment at a master site or prime site). Any failure which results in the loss of wide area operation of one or more simulcast radio sub-system. Failure of operation of 25% or more of the operator stations in a dispatch center. This level represents the most critical issues affecting significant portions of the System and its users.

Severity 2	Field Servicer shall be en- route within thirty (30) minutes after Contractor or Service Provider detects or is notified of the failure, whichever occurs first.	Within twenty-four (24) hours of detection or report of failure, whichever occurs first, restore full functionality to land mobile radio equipment and software microwave system equipment and software and MPLS equipment and software and if equipment is malfunctioning, install FRU. Concerning equipment and software not listed above Service Provider's goal is to resolve all Severity 2 failures within twelve hours of arrival. However, it is possible that some resolutions could require additional time and effort due to multiple item failure, antenna system failure, etc. In any event, Service Provider is committed to failure resolution as rapidly as possible, utilizing all available resources to resolve the failure as soon as possible.	Loss of 20% or more voice talk-path capacity at a site. Failure of operation of any individual site that comprises a part of a simulcast subsystem or multicast site. Any Backhaul failure which causes either a loss of traffic through a path or loss of node redundancy. Network Management System (NMS) failure dispatch center failure impacting operations. Loss of connectivity of any dispatch or RF site to the core network. Environmental alarms, such as DC plant and backup power. This level represents major issues that results in an impaired or unusable sub-system, or loss of critical features from the End User Agency's perspective.
------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Severity 3	Field Servicer shall be en- route as soon as possible after Contractor or Service Provider detects or is notified of the failure, whichever occurs first.	Within twenty-four (24) hours of detection or report of failure, whichever occurs first, restore full functionality to land mobile radio equipment, microwave system equipment and software and MPLS equipment and software and, if equipment is malfunctioning, install new equipment. Concerning equipment and software not listed above, Service Provider's goal is to resolve all Severity 3 failures within twenty- four hours of arrival. However, it is possible that some resolutions could require additional time and effort due to multiple item failure, antenna system failure, etc. In any event, Service Provider is committed to failure resolution as rapidly as possible, utilizing all available resources to resolve the failure as soon as possible.	Loss of less than 20% of voice talk- path capacity at any site. Any Backhaul failure or alarm which does not result in loss of traffic or redundancy. No more than 1 console out-of- service at any dispatch location. Loss of any NMS workstation. This level represents moderate issues that limit End User Agency's normal use of the system, sub- system, product, or major non- critical features from an End User Agency's perspective.
------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------