

#### PROPOSAL CHECKLIST

Proposals must be submitted in a sealed envelope with the RFP Title and the proposer's name and address clearly indicated on the envelopes. It is mandatory that price proposals and non-price proposals be submitted separately. Failure to submit separate proposals will result in rejection of the proposal. Included for the proposer's information is the City of Boston/County of Suffolk Standard Contract General Conditions (FORM CM 11); please review all terms and conditions.

#### Non-Price Proposal Envelope

- Proposal Signature Page (provided)
- Contractor Certifications (provided)
- If mailing, please submit one original and one electronic (thumb drive) of non-price proposal in a sealed envelope marked in the lower left corner with the words: "PSNET 3– Non-Price Proposal" and proposer name
- Form CM06 Certificate of Authority: SIGNED COPY REQUIRED
- Form CM09 Contractor Certification: SIGNED COPY REQUIRED
- CM Forms 15A/B CORI Compliance, Standards: SIGNED COPY REQUIRED
- Form LW2 Living Wage Agreement: SIGNED COPY REQUIRED
- Form LW8 Vendors Living Wage Affidavit: SIGNED COPY REQUIRED
- Form CM16 Wage Theft: SIGNED COPY REQUIRED

#### Price Proposal Envelope

- Price Proposal Page (provided)
- Detail of deliverables and payment schedule
- Detail of pay rates and estimated hours
- ☑ If mailing, please submit one price proposal and one electronic copy (thumb drive) in a sealed envelope marked in the lower left corner with the words: "PSNET 3– Price Proposal" and proposer name

Signature (blue ink)

......



#### PROPOSAL SIGNATURE PAGE

Complete this page and return as a cover sheet for the completed non price proposal.

#### Metro Boston Homeland Security Region PSNET3

Eric Johnson
Contact Person
781.551.8599
Phone
781.551.8667
Fax

ejohnson@lan-tel.com Email

Submits the attached proposal for this Request for Proposals to the Mayor's Office of Emergency Management (OEM), acting on behalf of the Metro Boston Homelard Security Region, on the authority of the undersigned and as dated below. I confirm and pledge to abide by and be held to the requirements of this RFP and its resulting contract, to perform any tasks and deliver any documents required, and to execute a Contract with the OEM.

Authorized Agent of the Proposer:

Signature (blue ink please)

Joseph Bodio Printed Name

President/CEO Title

April 30, 2018 Date

(If a corporation attach certificate of vote or apply corporate seal here)

Proposal must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Proposer should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.



#### **CERTIFICATIONS PAGE**

Complete this page and return with completed non-price proposal.

#### Metro Boston Homeland Security Region PSNET3

As required under Chapter 233 and 701 of the Mass. Acts and Resolves of 1983 and Chapter 30B of the Mass. General Laws certification must be made to the following by signing in the space indicated below. Failure to offer such signature will result in rejection of the proposal.

- A. "The undersigned certifies under penalties of perjury that this proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word person shall mean any natural person, business, partnership, corporation, union, committee, club or other organization, entity, or group or individuals" and also;"
- B. "Pursuant to M.G.L. c.62C, §49A, I certify under the penalties of perjury that to my best knowledge and belief the undersigned has complied with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support."

Authorized Agent of the Proposer:

Signature (blue ink please)

Joseph Bodio Printed Name

President/CEO

Titlə

LAN-TEL Communications, Inc. Name(as used for tax filing)

. . . .

043141040 SS# or Federal ID#

April 30, 2018

Date

Proposal must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Proposers should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.





#### ADDITIONAL CERTIFICATIONS PAGE

Complete this page and return with completed non-price proposal.

#### Metro Boston Homeland Security Region PSNET 3

Pursuant to 28 CFR Part 42.204 (d), I certify that my employment practices comply with Equal Opportunity Requirements and complies with 28 CFR Part 42.202.; that my organization complies with the Americans with Disabilities Act.

Authorized Agent of the Proposer:

Signature (blue ink please)

Joseph Bodio

Printed Name

President/CEO Title

April 30, 2018 Date

Proposal must be signed by a duly authorized officer(s) eligible to sign contract documents for the firm. Consortiums, joint ventures, or teams submitting proposals will not be considered responsive unless it is established that all contractual responsibility rests solely with one contractor or one legal entity. The Proposal must indicate the responsible entity.

Proposers should be aware that joint responsibility and liability will attach to any resulting contract and failure of one party in a joint venture to perform will not relieve the other party or parties of total responsibility for performance.





In Partnership with:





#### Proposal in Response to RFP For PSnet Development and Management

### April 30, 2018

#### Prepared for:

Sarah Plowman Regional Planner, Office of Emergency Management Room 204 One City Hall Square Boston, MA 02201

#### Presented by:

LAN-TEL Communications, Inc. 1400 Providence Highway Suite 3100 Norwood, MA 02062 Phone 781.551.8599 www.lan-tel.com



#### **Table of Contents**

Section 1: Preparation of the Proposal (Cover Letter)	3
Section 2: Project Objectives and Overview	4
Section 3: Scope of Work	5-19
Section 4: Project Requirements	20-28
Section 5: Contractor Experience/Qualifications	29-40
Section 6: Acquisition Method	41
Section 7: Subcontractors	41
Section 8: Warranty, Critical Spare Parts and Training	42
Section 9: Total Anticipated Duration of Contract and Renewal Options	43
Section 10: Special Procurement and Contract Conditions	43
Section 11: Non Price Preparation & References	44-46
Section 12: RFP Process Timeline	46
Attachments: Financial Statements, Certifications	



#### Section 1: Preparation of the Proposal

LAN-TEL Communications, Inc. and its partners are fully equipped to assist with the planning, implementation, technical support, preventative maintenance, daily routine/corrective maintenance, restoration and/or repair, management and monitoring of PSnet, a network infrastructure of high-speed, redundant, secure fiber and microwave technology based-backbone which interconnects and serves public safety and public service jurisdictions throughout the MBHSR region.

Contractor Name: LAN-TEL Communications, Inc.

Contractor Address: 1400 Providence Highway, Suite 3100 Norwood, MA 02062

Contractor Phone Number: 781.551.8599

Contact: Mr. Joseph Bodio, President/CEO, jbodio@lan-tel.com

Incorporated: in Massachusetts on February 14, 1992

LAN-TEL is a privately held company, owned by Joseph Bodio. Dun & Bradstreet

Identification Number: 80-823-6327

Fully bonded and insured



#### Section 2: Project Objectives and Overview

Ms. Sarah Plowman, Regional Planner Office of Emergency Management Boston City Hall, Room 204 One City Hall Square Boston MA 02201

Dear Ms. Plowman,

LAN-TEL Communications, Inc., in partnership with its associates, Interisle Consulting and Skywave Communications, is pleased to submit its technical and cost proposal through this transmittal letter to the City of Boston and the Metro Boston Homeland Security Region (MBHSR) in response to the Request for Proposal (RFP) to engineer, upgrade, maintain, repair, manage, and monitor The Public Safety Network (PSnet) infrastructure system.

LAN-TEL is proud of its long-standing relationship with the Office of Emergency Management (OEM), the MBHSR and the participating UASI communities. Our extensive experience with the City of Boston has allowed us to fully understand and appreciate the requirements under this RFP from both the end-user and contractor perspectives. LAN-TEL has successfully demonstrated that it is a trusted and reliable vendor and partner. We are tremendously proud of the impact we have made in helping our government customers serve, protect, and improve the lives of its citizens and communities.

In response to the referenced solicitation, LAN-TEL Communications, Inc., and it **partners** meet and exceed all the requirements established by the MBHSR Communications Interoperability Subcommittee (CIS). Your evaluation criteria emphasized the desire to select companies that have demonstrated the best combination of proven expertise in the installation, implementation, and management of similar networks in terms of scale and complexity.

I am confident that you will find our response to be complete in terms of scope and detail, and compliant and consistent with the requirements detailed in the RFP published by City of Boston Purchasing Department. Thank you for the opportunity to present LAN-TEL Communication's Proposal.

Sincerely,

Joseph Bodio President/CEO

#### Section 3: Scope of Work

## 1. Interconnection of local public safety networks for data sharing among public safety agencies in the region and elsewhere;

This is one of the core requirements for PSnet, and it already provides extensive interconnection of networks and facilities used by public safety agencies, as well as support for information sharing through a variety of applications. However, as systems evolve, and new capabilities are introduced for public safety agencies, our team will continue to evolve PSnet to address new interconnection requirements and information sharing needs. Furthermore, we will extend PSnet's network management and security umbrella to cover new interconnections and information sharing applications.

## 2. Support efficient, diversely routed, and redundant access to key central public safety systems such as the Integrated Criminal Justice Information System (ICJIS);

While PSnet today provides efficient, redundant routing via diverse paths and technologies throughout the Region, improvements can be made in many areas. For example, the microwave backbone has changed little over the past decade, and no longer reflects an optimal system for interconnecting major backbone nodes, nor does the microwave topology reflect new fiber optic paths that have been incorporated into PSnet. Similarly, additional fiber optic links are needed to improve system diversity and augment the microwave links. Our team is intimately familiar with these issues, and has already developed recommendations to improve path and technology diversity for PSnet.

We also fully understand the application and service interconnections that need to be supported, and how the current PSnet network topologies relate to services such as ICJIS, as well as other vital services including public safety radio systems, camera systems, CAD information sharing, and BRIC applications. Our team has advocated for improvements in the PSnet plant to better serve these important applications, and we have made specific recommendations to further optimize the PSnet footprint to reflect the actual application and service interconnections.

## 3. Optimize and secure backbone support of the regional/state MUZIC APCO P25 radio and data system;

Our team has directly addressed many of the communications challenges associated with supporting P25 system deployments, including radio consoles and C-Sub systems. We have worked closely with Motorola and their radio shops to meet all P25 requirements. QoS controls have been implemented throughout PSnet in order to support radio system requirements, and we have customized routing to improve performance of MCC7500 systems when PSnet routes around path failures. We have also deployed an integrated VPN solution

for Motorola MCC7100 deployable consoles that is used throughout the Region for special events, command posts, or *ad hoc* console support.

In addition to P25 systems support, PSnet has also been extended by our team to support legacy LMR radio trunking. This has included deployment of TDM-over-Ethernet solutions for analog circuits, T1 interfaces, and V.24 digital connections. Special provisions have been made to insure adequate security and QoS controls are incorporated to address limitations of legacy systems and interface equipment. Furthermore, we have customized PSnet management systems to provide powerful diagnostics and monitoring tools for these legacy systems.

Based on the experience our team has acquired in dealing with real-world radio system support over a robust packet network, we are well aware of where further improvements can be made, as well as what needs to be done to integrate additional radio systems into PSnet. We recognize that traditional copper line telco services are going away, and that radio technology is improving in ways that will require further expansion and optimization of PSnet services. We are well equipped to deal with these challenges.

#### 4. Effectively use and optimize "Loop A" Fiber usage by the partners;

In 2009, members of our team proposed to the Commonwealth and the Cities of Boston and Cambridge, along with METFON, that the conduit facilities deployed by the Joint Trench Partners (JTP) could be leveraged to provide robust cross-border communications that would also reach important carrier hotels, specifically the Markley facility at 1 Summer in Boston, and the Level3 facility at 300 Bent in Cambridge. We then facilitated an agreement involving EOPSS and the Cities of Boston and Cambridge that resulted in a 432-strand fiber bundle being run throughout the core "Loop A" conduit bank, with interconnections to multiple important Commonwealth and municipal sites, plus the carrier hotels.

Although PSnet was identified back in 2009 as one of the networks that could utilize the Loop A fiber, labor budget constraints have kept PSnet from taking advantage of this valuable resource. However, with other improvements that our team has introduced into the PSnet backbone, it is now quite feasible to integrate Loop A fiber into PSnet at modest cost resulting in substantial improvements in backbone resilience and capacity. We also understand how Loop A, and other conduit banks deployed by JTP can be further leveraged to extend PSnet fiber connections within Boston and Cambridge, as well as to Somerville and Everett.

Based on prior projects, our team has extensive knowledge of options for extending fiber throughout MBHSR. For example, it should be feasible to leverage Commonwealth fiber to reach Chelsea and MITC, and MBTA fiber could be used to reach other communities, particularly Revere and Winthrop. However, planning for fiber extensions is not just a matter of knowing where the conduit banks and existing fiber bundles are located. It is even more important to incorporate actual network needs into the planning process, including locations that are served by microwave links. Fiber and microwave will continue to be complementary technologies that should be incorporated into an integrated network design.

Municipal fiber is another important resource that our team has leveraged extensively over the past five years to extend PSnet's footprint to many more sites. At this time, PSnet leverages municipal-owned fiber in every MBHSR community, with extensive deployments in Cambridge, Quincy, Revere, and Winthrop. Furthermore, we also worked directly with Harvard University and MIT to leverage their fiber resources, and we added new microwave sites based on fiber connectivity to campus high-rise buildings.

We intend to work with the PSnet EC and Regional stakeholders to plan further deployments of fiber between PSnet sites, and to continue to add new sites leveraging new or existing fiber. These investments should provide value to MBHSR for decades to come.

## 6. Support and secure backbone use for video usage and access including wireless access;

PSnet and the CIMS camera network have evolved in a coordinated manner for much of the past decade. Our team includes the key contributors to both projects, and we collectively have a track record of working collaboratively to the benefit of the CIMS camera and application deployments, while also adding value to PSnet. For example, there are multiple instances of where camera sites are now also public safety radio sites and vice versa.

We can also reference multiple examples where PSnet extensions have improved communications to mixed-use sites where cameras systems have benefited from the Regional approach our team has fostered. Just one example is the Winthrop Water Tower that now reaches cameras on the Boston Lighthouse. This is a Winthrop-owned site that provides camera backhaul from multiple sites, important backbone microwave links to Chelsea and Quincy, direct fiber into the Metro North RECC, and it is an important public safety radio site.

CIMS is today, and will remain, the largest application operating over PSnet. CIMS also reaches to more sites by far than any other application running over PSnet. Most of the camera connections are via short-haul microwave links. Collaboration between our team members over the past few years has resulted in significant and crucial improvements in camera microwave links, including robust security and in-depth management and monitoring of camera links. During this same time frame, the number of cameras deployed has nearly doubled, while video quality and resolution has improved drastically.

Looking ahead, we do recognize that many challenges will confront current and future camera deployments and microwave backhaul links. The 5 GHz bands are

becoming ever more congested, which reduces reliability and capacity, while increasing error rates. Some of these problems can be addressed by using newer microwave technologies, and even shifting to less crowded bands. Other strategies will involve reducing link distances and leveraging fiber more effectively. Our team has considerable depth of expertise, and extensive practical experience with deploying and operating camera microwave links. We are confident in our joint capabilities and expect to be able to continue to overcome the many challenges in this area.

#### 7. Plan and develop shared access by mobile users to carrier facilities;

(See also responses to Section 3 items 7, 16, and 25)

Starting with the first PSnet pilots, VPN technologies have been used to establish secure communications throughout the Region, as well as remote access to PSnet services from the Internet. Our team has deployed and operated all of the VPN point-to-point and remote access services. This includes the remote access gateway for MCC7100 console access to P25 radio systems. We are also, ourselves, major users of VPN remote access services since we use these facilities to access PSnet and CIMS for engineering and maintenance work.

In addition to the basic VPN secure communications mechanisms, we have also deployed a central RADIUS service for authentication of remote access services. This has allowed us to assign a RADIUS account to each authorized user that can be used for VPN access, as well as for accessing network equipment and services within PSnet. This improves security, since passwords and accounts are managed centrally without keeping passwords in clear text, and when a user is no longer authorized to access PSnet facilities, we can immediately disable all access by disabling their RADIUS account.

However, PSnet needs to up its game substantially for secure remote access as well as access to applications, services, and network equipment. Use of the PPTP remote access protocol needs to be phased out, though this will also entail working with municipal Internet firewalls to enable use of modern VPN remote access protocols (e.g., L2TP/IPsec or OpenVPN). Another approach to dealing with local firewalls that block VPN protocols would be to deploy VPN proxy services that would reside on a local public safety network, and that could leverage the PSnet IPsec firewalls that are deployed for CJIS communications.

At the same time, secure remote access needs to be extended to smart phones and tablets, and be configured to work over cellular networks and wireless LANs. Use of so-called "mobile VPN" services that allow user devices to roam between different types of wireless and wired networks without losing VPN connectivity may be appropriate for certain classes of users or applications, though these sorts of services can be quite expensive, and are not needed by the majority of remote access users. It is also essential that authentication and access control services be expanded to provide directory services, public key certificates, distributed syslog services, and secure DNS (DNSSEC, DANE, DNScrypt) in addition to RADIUS. Deploying, expanding, and upgrading these services has be repeatedly proposed as an essential initiative over the past eight years.

These services are vital to deploying and operating Regional applications that also require authentication and access control. In particular, it is highly desirable to provide one set of procedures for issuing and managing user (or device) accounts so that a user can be authorized to access specific applications, as well as establish remote VPN connections with a single account. Then, should this user leave or change roles, their account authorizations can be revoked or modified for all applications and services quickly and efficiently. Ideally, MBHSR should implement a *federated* system where user accounts established by individual agencies in each community could be authorized to access PSnet services and Regional applications using direct interactions between PSnet directory services and the local agency's own directory services (e.g., Active Directory). Aside, PSnet has provided the ability for specific systems residing on PSnet to reach authentication services provided by an individual agency.

Finally, the issue of VPN remote access from the Internet raises important concerns regarding reliability and survivability of these services. Currently, PSnet has only two connections into the Internet. We have had instances where Comcast maintenance has degraded both connections at the same time, making it difficult for support staff to access PSnet for maintenance and diagnostics work. This issue is addressed in further detail under the next topic.

## 8. Develop a plan to implement shared internet in times of major local or other internet disruptions;

The Region as a whole is increasingly reliant on quality access to the public Internet for a variety of services, including the full array of cloud-based services that are becoming ever more common. Even traditional phone services frequently rely on Internet connections, or specialized services based on public Internet infrastructure. At this point in time, Internet access must now be considered an essential service for public safety agencies, and indeed for nearly all municipal services.

Similarly, PSnet is also dependent on Internet access for VPN remote access, provision of InterMapper services, software update services, DNS, Network Time, and remote support services provided by vendors (*e.g.*, HPE, Mutualink). In addition, PSnet delivers services to agencies that depend on Internet connectivity such as ShotSpotter, Sprint Mobile (for Chelsea), remote camera access, and FATPOT connections to ambulance services and university dispatch operations. PSnet also provides Internet access to a couple of the EOCs.

For several years now, plans have been proposed to upgrade PSnet's Internet connections. Actually, PSnet did have direct access to Tier 1 ISPs at the Markley facility (1 Summer) at one time, but the vendor that set up this service for PSnet and EOPSS went out of business, with the result that PSnet was downgraded to using Concast connections provided by first Cambridge Public Safety, and later a second connection provided by Boston Police.

At the outset of this new contract, we intend to immediately propose concrete plans to upgrade PSnet's Internet services with direct connections from the Markley and Level3 carrier hotels leveraging "Loop A" fiber plus the fiber that Harvard has donated that interconnects these two facilities along with existing fiber provided by Boston and Cambridge used to reach these facilities from other PSnet locations. The plan will involve direct peering with multiple ISPs in order to reduce reliance on any one provider, and also to optimize local connections for Regional connections, including VPN remote access services.

We will also work with MBHSR communities to explore options and develop plans to utilize the resilient PSnet infrastructure to provide high availability Internet services to agencies with critical needs for Internet access. This has the potential to remove one important source of risk to agency Internet access—*i.e.*, the local telco or ISP connections used to connect an agency or municipality to the carrier hotels or other peering locations. This could be especially helpful in reducing the threat of Regional communications outages during major disruptive events.

Finally, there may be economies of scale that could be exploited if PSnet served as a Regional access network for reaching the major carrier hotels. There are several factors at play here, but a key benefit is that Regional Internet bandwidth could be acquired in bulk directly at a carrier hotel, where Internet bandwidth tends to be much less expensive than when delivered by a local ISP via telco or cable infrastructure.

Our team has extensive experience with all of these issues, coupled with a deep understanding of the internal workings of the public Internet. We have also worked with other municipalities outside of MBHSR on providing Internet access, often under difficult circumstances. We know how to accomplish these objectives, and to do so cost effectively.

#### 9. Maintain all PSnet connections throughout the MBHSR;

For the past decade, our team has maintained and supported all PSnet and CIMS connections throughout MBHSR. We have intimate knowledge of every site, every link (both microwave and fiber), every switch/router/firewall, every server, and every camera. We also know the history of all equipment and sites so that we understand where there are weaknesses or other issues that affect reliability and maintainability. Equally important, we know who the key players are, and who to work with when problems do occur. Even when the people have

changed, we've always been able to reach out to the current players and engage the correct parties in whatever needs to be done to resolve a problem, report progress, or confirm resolution.

Maintenance is always a high priority activity that frequently pre-empts other activities. However, our team has been on a mission to reduce unexpected or emergency maintenance work through better planning, intelligent use of redundancy, improvements to diagnostic tools, and proactive care applied to systems. Today, many outages of links or equipment, and even entire backbone sites, tend to *not* disrupt services, or cause only minor disruptions. We expect to continue to refine the network through better design and planning in order to continually drive down the cost of maintenance and minimize any potential for service disruption.

We fully expect that our team will continue to provide necessary maintenance and support for all PSnet systems, including the CIMS camera systems. We have worked well with each other and with other vendors for a long time, and will continue to do so.

#### 10. Maintain network management systems and services;

One of the key success factors for PSnet is that our team has made effective use of network management tools from the earliest days. These tools are used throughout PSnet, and they are made available to stakeholders and other vendors working with PSnet applications or services, as well as some non-PSnet systems. Important tools in the PSnet management suite include:

- InterMapper
- RANCID (configuration management)
- Syslog
- SmokePing
- RADIUS
- DNS
- Exim4 email forwarding
- Custom scripts to analyze and audit system performance
- Technology-specific tools, such as vendor tools for microwave radios or virtual machines (VMs)

All of these tools are used continuously to monitor all PSnet systems, report issues, diagnose problems, plan repairs or upgrades, and maintain a comprehensive baseline of system behaviors. We have further customized and extended each of these tools to adapt to all equipment used in PSnet, even highly specialized equipment.

Network management is often associated with fault detection and response. However, this is a limited view of how comprehensive network management should be conducted. In particular, management tools are vital to insuring security of the systems and applications. Automated reporting of alerts can be used to notify responsible parties when there are component failures, as well as when there are indications of potential attacks or unauthorized access to systems or applications. Our team brings decades of real-world experience with network and security management to PSnet, and we intend to continue to improve and refine management tools.

One other point worth emphasizing is that an effective network management system is also the best way to maintain vital documentation on how the system is configured, and how well it is performing both in real time, and over longerterm trends. Our first priority for documentation is to make sure that the current state of the system is reflected in the network management tools. InterMapper is the most important tool in this regard, but it is complemented by RANCID, syslog, and the custom scripts that we have developed to extract detailed information from the system on a periodic basis.

## 11.Maintain network backbone for the Critical Infrastructure Monitoring system (CIMs);

The first real application running over PSnet was the CIMS video service, and this remains one of the most important, and certainly the largest application today. In a very real sense, PSnet and CIMS have been, and remain, "joined at the hip." Our team comprises the key contributors to both PSnet and CIMS, so we have deep understanding of the important relationships between PSnet as a backbone network service, and CIMS as a means for reaching cameras and connecting them to video recording and monitoring servers.

We will strive to not only improve the quality and delivery of CIMS services, but to also continue to derive synergies and economies of scale by leveraging the natural overlap of these systems. Whenever maintenance takes place for camera systems at a site, an opportunity exists to address PSnet proactive maintenance at the site. Similarly, as PSnet improves backbone capacity and reach, CIMS can benefit directly. There will also be synergistic opportunities that will benefit other applications, such as public safety radio systems. In fact, we already have numerous examples of where joint planning has resulted in expansion of PSnet that has benefited CIMS and other applications, such as radios.

## 12.Provide 24 X 7 network monitoring of all PSnet servers and all PSnet services for any problems;

We have built in comprehensive monitoring of all PSnet (and CIMS) systems that provides automated notices of problems and the tools to quickly assess the nature of an issue 24x7. These monitoring systems have been deployed redundantly and operate  $365 \times 7$ . Not only do we, as support vendors, receive alerts and notifications, we also deliver relevant subsets to key stakeholders.

The more important objective should be that problems get detected quickly and that appropriate responses occur in a timely manner. Our track record is that we have provided timely responses to problems, and we anticipate continuing to do so. To the extent that PSnet is sufficiently robust and resilient, then most component or link failures will not disrupt services, and many such problems can be resolved remotely as a matter of course.

### 13. Provide automated problem alerts and notifications to MBHSR member agencies as well as maintenance vendors;

Our team has deployed a robust system for automatically detecting and reporting problems to appropriate parties, including our own team members, key stakeholders in the agencies, and to other vendors as appropriate. Note that we also respond to automated alerts from other vendors' systems (*e.g.*, Motorola UEM notices, HPE notices and alerts, Mutualink appliance problems).

There is certainly room for improvement, and we will develop and propose plans for more effective event reporting as well as tools to make it easier for individuals and groups to manage their subscriptions to alerts. We already allow some stakeholders who have expressed an interest in receiving notices to control which notices they receive. Another goal would be to further reduce false positives and repetitive alerts for the same or related problems.

## 14. Provide telephone and email support functions to PSnet representatives and key local IT personnel;

Our team has been responsive to telephone and email support requests throughout the past decade, and we will continue to be responsive. We have responded to requests that have come in at all times of the day and night, on weekends, and even when on personal time off. Not only do we respond to support requests from MBHSR stakeholders, we also respond to requests from other vendors on an equal basis. After all, if another vendor is working a problem that impacts stakeholders, then we feel an imperative to treat such requests with urgency.

## 15.Manage relevant and timely software updates (security and maintenance patches);

Not only have we provided life cycle management of firmware and software for all equipment and infrastructure services, we also track status of all firmware and software used throughout PSnet. For Windows systems, we have established a WSUS service within PSnet to handle software updates from Microsoft. This allows us to better manage and track Microsoft updates, and Windows systems residing on PSnet do not (and are not allowed to) pull software updates directly from Microsoft. We also stay on top of all security notices and advisories from a wide variety of sources, including the manufacturers of PSnet equipment. Whenever a security advisory relates to systems or equipment used in PSnet, we promptly investigate whether our systems are vulnerable to the issue reported. This allows us to take a measured approach, and only perform updates when appropriate. We also implement workarounds or other measures to mitigate exposures when warranted.

Another service we have provided is to advise the PSnet EC and OEM of actions required to maintain software licensing in order to assure that we are able to remain current with important software systems.

#### 16. Support data backup services and recovery;

Comprehensive data backup and recovery requires multiple approaches depending on the nature of the data, where it is stored, how recovery is achieved, and how the applications that use the data are architected. There are also concerns with data security and policies that stipulate how data confidentiality must be maintained, or restrictions on where data can reside. Today, multiple approaches are taken to data backup and recovery within PSnet, where the approaches are tailored to the data and associated applications.

There are certainly improvements that can be made to backup systems and procedures once budget is available to work on such tasks. We have also proposed that PSnet could provide a general backup service to the MBHSR communities for off-site backup, with the distinct advantage that both PSnet hosting centers are located in law enforcement facilities, and CJIS-compliant encryption is already in place for data transferred to or from backup utilities at the hosting centers. It would even be quite feasible to provide a service for disaster recovery of agency servers by allowing agencies to set up their own VMs at PSnet hosting centers, which would provide data backup plus the ability to recover an entire system

## 17. Develop and manage security policies, systems and techniques including authentication; maintain PKI (certificates) and other PSnet security measures;

(See also responses to Section 3 items 6, and 25)

Our team has considerable depth of experience with all aspects of modern cybersecurity and related technologies. For PSnet, we have long advocated a comprehensive approach to deploying and integrating the essential machinery used to provide authentication, access controls, confidentiality, and data integrity. Although we have utilized a RADIUS system for authentication and access control for much of the past decade, we have also been forthcoming that the current RADIUS services are in need for a complete overhaul. In addition to RADIUS, we have also managed IPsec tunnels within PSnet using public key certificates and we maintain a minimal PKI system for certificate issuing and management. For secure access to servers, we have been using commercial certificate issuing services, or locally generated certificates.

What we strongly recommend is that a new system be built on a foundation comprising an LDAP directory system, with integrated PKI, RADIUS, Kerberos, and DNS services. Microsoft Windows Server systems provide such an integrated solution, with the potential to support federated systems that could interoperate with the MBHSR agencies. We can then provide centralized management of account credentials for users and devices that will support strong access controls and secure communications for nearly every PSnet service, including access to equipment for system administration. Another advantage to this approach is that account privileges can be centrally managed and adjusted when roles change or users leave. We would also be able to issue certificates to end users for secure VPN remote access, mutual authentication using HTTPS protocols, and support for public-key SSH logins to administer equipment or services.

Another imperative is that all security systems and operational practices be continuously audited, with regular review of audit controls and actual audit data. This will insure that PSnet is ready at any time for external audits. Note that one of the first sets of controls than a competent external audit will review are the practices for regular self-audit. If effective audit practices are established, there can be a significant payback, since self-audits tend to find operational problems (*e.g.*, configuration mistakes) quickly, and in a way that makes it easy to find and correct the problem. In other words, good audit practices not only help address security concerns, they can make a big difference in maintaining a healthy system where problems are detected early—often before services are impacted.

## 18. Assess and document current PSnet equipment life cycle and replacement costs;

Our team has consistently identified and reported on concerns with the health and supportability of equipment deployed in PSnet. We will work with the PSnet EC to establish priorities for replacing equipment that has truly reached the end of its useful life. Our input to the PSnet EC will not only explain why equipment is no longer suitable, but also what the impact on the overall network and applications will likely be should this equipment fail completely.

Many of the backbone microwave radios currently deployed in PSnet have reached this state and plans for replacement will be put forward. However, this planning needs to factor in the current state of the network, and some equipment should probably not be replaced directly, but instead augmented with newer (or redeployed) equipment that better meets the current design goals for the overall network. For example, some of the older backbone microwave links should not be directly replaced, but instead augmented with new links that optimize the backbone topology given the existence of other microwave and fiber links that have been deployed. There is also equipment that requires regular service, or parts replacement. UPS batteries are an example of parts that need to be replaced regularly. Backbone microwave radios should get periodic inspections and preventive maintenance, including checking alignment and confirming that the alignment mechanisms still work.

Since we work closely with the applications, network, and all equipment deployed throughout PSnet and CIMS, our team has direct knowledge of where there are deficiencies or issues needing attention. We will work with the PSnet EC to establish priorities for periodic maintenance and scheduling of equipment overhauls or replacements.

## 19. Provide senior technical assistance and end user-friendly training for municipal stakeholders;

Our team has consistently provided technical assistance and advice to all stakeholders. We have always been available to discuss issues of concern, or just topics of interest relating to PSnet and the applications it supports. We also continue to offer to advise OEM on technical issues and strategies.

Where there has been sufficient interest, we have provided training for stakeholders, and will be happy to do so in the future. The training we have provided has been tailored to the needs and interests of the stakeholders. We have also provided training to other vendors. We take a problem-solving approach to training presented in a neutral manner that avoids gratuitous promotion of any specific products or commercial interests.

Since this topic is open-ended, we propose to work with the PSnet EC to identify areas where training is sought, and develop plans for training initiatives that will also engage the appropriate players in the training program.

## 20. Assist in the development of PSnet policies, standard operating procedures, Memorandum of Understanding and governance guidance;

This is a broad topic that reflects responsibilities that properly reside with MBHSR, OEM, CIS, CIMS, and the PSnet EC. While we have contributed directly to efforts to define policies, SoPs, and MoUs in the past, our role was as advisors, and we believe that is the appropriate role going forward.

However, our team does have significant experience in these matters, and we have directly supported senior management at other clients in defining policies, SoPs and MoUs for their organizations or industry consortia. We also work directly with the various bodies that wrestle with Internet governance on the international stage, and we can share this experience with MBHSR and its various stakeholders.

## 21. Recommend and procure network devices and software as approved by the PSNEC;

Our team has consistently developed recommendations for equipment and software to be deployed within PSnet, and we have always provided these recommendations along with justifications and detailed explanations to the PSnet EC and OEM. Since 2009, nearly all equipment procured for PSnet has been recommended by our team, including for CIMS cameras and video servers.

We have also directly procured much of the network routing/switching, security, and power management equipment currently deployed within PSnet. We can easily make the case that we have saved the Region millions of dollars in capital expenses. In addition, we have reused much of the PSnet equipment that had previously been taken out of service during network upgrades. CIMS cameras and servers have also been reconditioned and redeployed into active service. As an aside, these practices are quite typical of other network operators, including telcos and ISPs.

When recommending equipment, we will consider all factors, including cost effectiveness, performance, suitability, maintenance costs, spares inventory, manageability, reliability, security, and manufacturer stability. Similar considerations will also be factored into recommendations for software purchases.

## 22. Make reports on recommendations for further PSnet development and build-out to include equipment and policy;

Again, this is something that our team has done consistently throughout the entire history of PSnet and CIMS. We are strategically focused on where and how PSnet needs to evolve, and we maintain plans for addressing weak areas in the network or with services.

At the beginning of the new contract period, we intend to develop an agenda for improving and expanding PSnet, and we will review this agenda with the PSnet EC and OEM. We will then agree on priorities with the EC, and follow up with detailed plans for each priority initiative. When equipment or software is required, we will research suitable options and make specific recommendations as part of the plan. We will also conduct trials of equipment or software to confirm that it meets the needs of the Region.

In some cases, new priority initiatives may conflict with existing policies, or require putting forward new policies to establish management approaches to leveraging new capabilities or services provided by PSnet. We will work with the PSnet EC on assessing policy implications, and offer advice on how to craft new policies where appropriate.

#### 23. Ensure the mission-critical readiness of the network;

Given the management systems in place for PSnet today, we already have a realtime status on overall system health and readiness. We also know when systems are degraded, such as when a link is down, or a redundant piece of equipment has failed. Since a degraded condition increases the risk that mission-critical services could be disrupted, we can respond accordingly.

Recognizing that security problems can also adversely affect readiness of the system, we recommend a regimen of regular self-audits, but focused on more than just security concerns. Our team has developed tools for extracting information for audit purposes, and our audit practices review many vital aspects affecting system health and security. Although budget constraints have curtailed regular self-audit over the past year or so, we strongly recommend that we return to this practice under the new contract.

#### 24. Assist in long-term sustainability for PSnet;

Long-term sustainability is a strategic imperative for PSnet. Our team has engineered networks that have survived and thrived over decades; much longer than PSnet has been in existence. These successes have not been accidental, they were achieved because of conscious design decisions and rational management policies. This issue is foremost in our minds as we develop plans to enhance and extend PSnet.

One important tenet of PSnet is to "build once, and reuse often." This simultaneously reduces aggregate costs to support the system, while facilitating new uses that can be deployed rapidly at much lower cost than deploying parallel networks. When costs are kept low, and value grows, a beneficial cycle is established that promotes long-term sustainability.

Achieving sustainability is a complex topic that involves many factors and considerations, including political concerns. As professionals who have direct experience with these issues in a variety of contexts, we are well equipped to assist MBHSR in achieving sustainability. We also consider this to be one of the most important areas where we can contribute.

#### 25. Prepare PSnet to interconnect to NG911 network;

PSnet today is fully prepared for integration with NG9-1-1 networks and services when these become available. It is not a stretch to say that PSnet already provides all the hallmarks of what an NG9-1-1 network is supposed to be capable of, including support for voice, text, images, video, data, voice radio systems, and radio consoles. Furthermore, PSnet has been engineered for strong security, high availability, and even survivability. The Regional nature of PSnet also makes this an ideal service for supporting mutual aid across borders and

disciplines, and it could allow all of MBHSR to rapidly adopt NG9-1-1 services whenever these become available.

Our team is familiar with the NG9-1-1 objectives, and we have been monitoring the development of associated standards and recommended practices. We can move quickly whenever MBHSR communities are ready to integrate with NG9-1-1 systems. We are also pursuing initiatives (ref. discussion under topic #7) that will further enhance PSnet readiness for NG9-1-1.

## 26. Provide VPN site-to-site services and remote access to municipal stakeholders as directed by the PSNEC;

(See also responses to Section 3 items 6, 7, and 16)

As noted under topic 6 above, our team developed both the site-to-site VPN solution and the VPN remote access services that have been successfully used in PSnet for many years.

The site-to-site IPsec tunnel deployments employ novel practices that have provided considerable flexibility without requiring extensive reconfigurations to support new site-to-site connections. The security measures are fully compliant with the FBI CJIS guidelines, but support many more applications than just law enforcement. We have achieved high standards of service and reliability, with many IPsec tunnels staying up continuously for years at a time. We also use the site-to-site facilities to extend PSnet to locations reached via the Internet while maintaining very high security standards. PSnet management services are also able to ride these IPsec tunnels when we need to provide management of sensitive systems, or systems that are outside of PSnet, such as a municipal public safety network.

PSnet VPN remote access services are used by a broad base of users for a wide variety of applications. In addition to PSnet stakeholders, vendors and other agencies also make regular use of these remote access services, and a separate system has been deployed for the Motorola MCC7100 deployable consoles. However, as noted under topic 6, we recommend significant upgrades to these services to strengthen security, enhance usability, and better integrate modern mobile devices (including cameras, smart phones, tablets, and laptops used in cruisers, fire trucks, and ambulances).

#### 27. Perform any other duties as deemed necessary by the PSNEC;

We have always been receptive to issues raised by the stakeholders as a team and have consistently taken the lead in presenting such issues to the PSnet EC. We have also been flexible in adjusting plans to accommodate new initiatives, or to reflect budget realities.

#### Section 4: Project Requirements

## 1. Technical consulting including requirements analysis, definition and documentation of interoperability standards, defining and testing specifications for network infrastructure, equipment and appliances;

Our team has been providing professional technical consulting services for decades to a broad variety of clients from commercial organizations, government agencies, and industry consortia. We have extensive experience in requirements gathering and assessment. As past contributors to industry interoperability standards, we understand the many challenges to achieving practical interoperability. We are actively engaged in large-scale testing of the US Internet infrastructure, and we understand the workings of modern network equipment from both hardware and firmware perspectives.

We have also invested considerable time and effort over the past decade to understand the challenges confronting public safety players, and their vital needs for dependable network services. From our hands-on work with PSnet, we have a deep understanding of the CIMS camera applications, the role of RMS and CAD applications, and the many facets of public safety radio systems and consoles. This puts us in the unique position of being able to provide technical consulting that leverages our understanding of public safety needs and technologies combined with our many decades of experience with leading-edge networking systems.

Our perspective is that effective technical consultants must stay out ahead of the challenges of today so that they can anticipate where their clients need to go, and what will be required to adapt to changes in technology, operational roles, and governance. We are confident we can contribute to meeting the needs of MBHSR for technical expertise and planning.

#### 2. Network engineering in support of the PSnet system;

As the team that conducted the original PSnet feasibility study, and that has provided the network engineering that has brought PSnet to where it is today, we are quite familiar with all aspects of the network design and every corner of the physical network. We are "full stack" engineers who deal with everything from physical installations and power management all the way up to the overall architectural structures of PSnet, including management, security, and application infrastructure. We sometimes refer to this as "dirt to blue sky."

We have a pragmatic view of what PSnet is today, and where it needs to be taken in both the near- and long-term. However, this is not just our way of looking at PSnet—we constantly strive to understand the various points of view of the stakeholders. Our philosophy is that effective engineering should not only meet the fundamental technical requirements, but also lead to a more sustainable system capable of continuous evolution to meet new challenges and requirements as they emerge. We have this covered!

## 3. Network monitoring, fault identification and real-time alarm reporting 24X7, 365 days per year using network monitoring tools as supplied by PSnet (currently Intermapper).

We have devoted considerable effort to baking solid management and monitoring capabilities into PSnet. This is more than just the machinery of management, it also entails optimizing management practices to meet the needs of all the players who interact with PSnet—not just the support staff or engineers. Automated tools for continuous detection of problems and reporting these problems are important elements of the overall network management infrastructure, but these capabilities need to be extended to provide rapid notifications and alerts to all parties who might be concerned with the associated network event. This requires considerable effort to *tune* the system to avoid false positives and repetitive notifications. Otherwise the notification system will become more of a nuisance than an aid.

It is also worth noting that PSnet uses more than just InterMapper for monitoring and management. Another vitally important tool is RANCID that captures current configurations from most of the network equipment (switches, routers, firewalls) on an hourly basis, and stores the configurations in a source control repository. It also sends out emails to the network engineers that include every change made to any of the configurations during the past hour. This tool gives us the ability to look back in time and find out what the configuration was for a specific device on a given date. We can then look at how that prior configuration compares to the current configuration, or the configuration on some other date. This also allows us to discover unauthorized changes to equipment configurations.

A set of scripts have been developed that allow us to pull current status information from all network devices, along with syslog records and other operational information. These scripts aggregate this information, thereby allowing us to look at the "big picture," and then easily drill down when we find some behavioral anomaly or other change that warrants investigation. This often brings to light issues that are not visible with the other tools, including misconfigured devices or indications of potential security compromises. Trends are also maintained that allow us to project whether operational limits are being approached, such as the capacity of a link or the CPU performance of a firewall.

Collectively, all of these tools allow us to practice proactive management of the network. This allows us to head off problems before services are affected. Of course, proactive measures are only effective when they are acted upon before the problems occur. It is also worth noting that the highly redundant, multi-path architecture of PSnet also facilitates a proactive approach to support and

maintenance, and the network management tools complement the resilient architecture.

Another relevant observation is that these network management tools provide comprehensive documentation of the entire system with dynamic, constantly updated views of the current state of the network and applications running over the network. This documentation is "live," and can be poked and prodded to dig into details about each device in the network, and its current relationship to other devices, links, and applications.

Over the past couple of years, too little attention has been paid to maintaining the network management system, and so we propose that priority be given to bringing this system back up to date and tuning it to meet current needs. Of particular concern is that automated alerts and notifications need to be more broadly disseminated, and they need to cover all aspects of the system, including applications and security warnings. We also need to create specialized views (maps) of the network to reflect the concerns that different users might have. For example, a map that shows all of the radio systems in a municipality and the current state of the network and radios is valuable for the people who need to understand the state of their radio systems without having to dig through other irrelevant information.

## 4. Network operations support to include fault resolution assistance and network administration function performance. Network problem resolution is at times required outside of normal business hours.

When problems are detected in the network, or applications running over PSnet, the first step typically involves diagnosis of the nature of a problem and pinpointing the likely cause(s). Situational awareness may also factor into problem analysis and cause determination. For example, if a site goes offline, is it because the microwave link(s) to the site stopped working, or a switch/router failed, or power went out? If the current situation is that it is raining heavily, then a likely cause of microwave outages is "rain fade." However, if a situational assessment indicates that there is a local power outage that occurred half an hour ago, then it is likely the site is down due to the UPS batteries being exhausted. With proper tools at our disposal, our team has regularly diagnosed problems with high certainty of cause within minutes of responding to notifications.

Once we have diagnosed a problem, we can then take concrete steps to resolve the problem or execute a workaround. Based on the nature of what needs to be fixed, we can then determine who is in the best position to resolve the problem, and whether someone needs to be dispatched to perform an in-field repair or correction. When warranted, parallel responses will be initiated, such as when a workaround is implemented while a field repair is scheduled. In many cases, we can work with local public safety staff to take corrective actions or implement workarounds. Given the resilient design practices employed in PSnet, many operational failures do not immediately affect services, and therefore result in a degraded, but still functional state. Such degraded situations still need to be corrected so that the network returns to its fully resilient state. Unfortunately, there are multiple degraded conditions in PSnet today where equipment or links should have been restored to operational status, but were allowed to languish due to budget constraints. Therefore, we recognize that there is a backlog of repairs that need to be pursued at the outset of the new contract. We have identified these situations and propose to address these expeditiously.

We believe our team has a solid track record of responding to problems in a timely manner with appropriate urgency. When services are disrupted, due to network problems, we have frequently worked outside of normal business hours to restore services.

5. Project management, including technical or installation services performed by other contractors under separately bid contracts, coordination and support for meetings and communications with stakeholders, state and municipal government agencies and organizations, network asset owners, network operators and other parties that are identified during this engagement, rights and permitting as needed.

Our team fully appreciates that effective coordination amongst all players is vital to efficient progress, and rapid problem solving. Of course, effective coordination requires effective communications between the organizations and individuals that need to cooperate. Furthermore, collaborative problem solving requires putting egos aside, and focusing on the problem, and not who to blame. While this is just good, common sense management, we fully appreciate that it takes real effort to manage collaborative efforts.

Throughout the entire history of PSnet, members of our team have worked with all stakeholders, as well as the other vendors and organizations involved with supporting or using PSnet. We believe we have fostered solid working relationships with everyone, and we often play facilitation roles, even when we are not ourselves directly involved.

## 6. Procurement support including specifying and ordering equipment on government contracts, and publishing and review of procurement request documents from the MBHSR jurisdictions and partner stakeholders;

Collectively, our team has always played a major role in specifying, ordering, installing and integrating equipment for use in PSnet and CIMS. We have also provided extensive review and well-researched advice on what to procure in the way of equipment or software, including procurement proposals from stakeholders.

We believe we have a responsibility first to the stakeholders to help acquire the right equipment or software for the actual need, and then to the taxpayers to provide the best possible value.

## 7. Furnishing certain necessary equipment, hardware, labor and procedures to support PSnet as approved by the PSNEC;

Yes, we have always done that, and we will do so in the future. We have always worked with the PSnet EC to determine what needs to be done, and we have provided information and advice useful to the EC in making decisions and setting priorities.

Our approach is to facilitate reaching a decision with the EC on what should be done, and then making it happen with minimal fuss. If problems crop up, we bring these to the attention of the EC along with recommendations on how to correct the plan and move forward.

## 8. Managing the security design and implementation according to industry standards, insuring various technical standards, configuring device setup and providing other configuration services and training;

Security, like network management, has been baked into PSnet. In accordance with best practices, we employ a "defense in depth" approach where there are intentionally overlapping, complementary security measures deployed in such a manner that a compromise of one measure does not expose the entire system. We also practice multi-party controls to minimize the possibility that one user can compromise the entire system.

Security technologies can be quite complex, and suffer from being brittle by their very nature. In many networks, service disruptions are more often due to security measures than actual network failures. Consequently, configuration of security technologies requires great care, and attention to many details. The PSnet team has established a track record of strong security with minimal disruption of services. The security measures we have deployed adhere to industry standards, have been meticulously configured to meet the objectives, are well documented, and have performed reliably over many years.

## 9. Managing the collection and dissemination of a variety of types of information and documentation. All documentation is to be stored on the PSnet SharePoint site, unless otherwise directed by the PSNEC.

As noted above, the most essential documentation for PSnet is provided through the network management tools we have deployed and maintain. This is documentation that reflects the current state of the network, and we have customized the tools to allow users to drill down to get further details. InterMapper is the most accessible and useful tool, and we have made it available to stakeholders and other vendors who work with PSnet or support applications that operate over PSnet. With this one tool, a user can access significant details without having to log into various devices or peruse esoteric log data. Much of the information presented by InterMapper is graphical in nature. We also utilize RANCID for configuration management, syslog for capturing event logs, SmokePing for graphical presentation of real-time network response time and jitter, and custom scripts for extracting operational information and inventories that consolidate vast amounts of information into useful summaries.

For the most part, a SharePoint system is suited for sharing static information, perhaps augmented by comments or revisions. For this to be an effective means of distributing information to various parties, considerable effort will be required to move content to the SharePoint system, and organize the content in ways that work for the users. Realistically, the Region has had multiple SharePoint initiatives, yet none have seen any significant adoption or use that we are aware of. Until a plan is in place to seriously engage the stakeholders with OEM in using this system, it would be a distraction to post and organize documentation onto a system that might not see any active use.

We will work with the PSnet EC to prioritize the information that will be deployed to the SharePoint repository (or alternative repositories), and to establish organizational schemes for the information. We recommend that staff with responsibilities to support MBHSR should take on responsibilities for managing use of the SharePoint system, including provisioning of access and driving adoption.

A priority should be to post to the SharePoint system, or some other system (perhaps a Cloud service), guidance to users who want to access InterMapper and other management tools. We could even provide training materials and walk-through tutorials to help people get started. Similarly, we can provide documentation on how to use the VPN remote access services, MCC7100 consoles, and other commonly used tools or services.

We will also direct regularly generated reports to a repository (*e.g.*, SharePoint), where they can be accessed by interested parties, and archived for future reference. Technical notes generated as a regular part of PSnet engineering or problem solving will also be archived on the repository. We will evaluate setting up a special email address, or even multiple email addresses, that could serve as both distribution lists for various types of technical notices, but also cause these memos to be captured in an appropriate searchable archive (*e.g.*, SharePoint).

Vendor documentation in our libraries will be moved to a shared repository (*e.g.*, SharePoint), provided that this does not violate copyright or proprietary restrictions. We recommend that all vendors have access to a shared repository, and that they assume responsibility for using this system to share relevant documentation and training materials with the stakeholders and others as appropriate.

When plans or other reports are prepared for the PSnet EC, we believe it should be the responsibility of OEM to move these plans/reports to an appropriate document archive (*e.g.*, SharePoint) along with any minutes or other contributions to the meetings. This will assure that these documents reflect PSnet EC decisions or management status. Use of a shared archive as a means for securely distributing sensitive documentation or other information is a possibility, but only if appropriate controls are put in place. Since these are matters of policy, the EC and OEM will need to take responsibility for how to manage distribution of sensitive materials.

Ideally, some directory system (which could be maintained in SharePoint) should be established for stakeholders, vendors, and other players to present their own contact information, and indicate what areas they are interested in tracking. This might become an effective vehicle for providing notices of upcoming events, assuming that any such system is widely used. In the short term, we will need to continue to use email notices to affected/interested parties, as we have always done.

We urge caution with use of forms to collect or disseminate information. The concern is that forms often become the "one size that never fits all." We would expect to be included in defining any forms that would be used by our team as part of our deliverables. This is another area that needs careful thought as to what the priorities are, as well as a design that meets the actual requirements. We can certainly contribute to such design efforts.

# 10. Attendance at monthly or as-needed PSNEC meetings, and at key meetings with agencies and entities. This also includes participation in weekly written status reports and bi-weekly or as-needed conference calls. (Confirmed)

Our team has always participated in both formal and informal meetings involving stakeholders and other vendors. We worked with the original PSnet stakeholders to establish the principles for standing up the PSnet Executive Committee, and we have been consistent, active participants in EC meetings.

Of equal importance, we have provided timely technical and management input to the PSnet EC members and other stakeholders, often in the form of memos and real-time status reporting on activities. Whenever we have worked to resolve problems, or to perform upgrades, we have informed interested parties on our progress and the end results. We believe it is vital that this sort of information be disseminated in a timely manner to everyone involved or affected, including other vendors and agencies outside of MBHSR. Weekly reports can then summarize or reference the relevant details as appropriate.

## 11. Infrastructure Startup and network support for applications hosted on or supported through PSnet including FATPOT, BRIC applications including Omega mapping, etc.

The *raison d'être* for PSnet is to support and distribute applications throughout MBHSR and beyond. This has always been a priority for PSnet, and we have worked closely with the stakeholders and vendors involved in developing and deploying applications to the Region. We have also worked diligently to establish a robust application platform for applications, including a virtualized computing and storage platform distributed between two physically diverse hosting centers. The application platform also includes security measures and management services, so that applications share common security and management facilities that lower the barriers to application deployment.

For applications like FATPOT and the BRIC's CrimeView, we have not only provided a network platform for these applications that securely extends the applications to each participating agency, we have also regularly provided technical assistance and troubleshooting support to the application developers, to the stakeholders who operate these applications, and to the end users of these applications.

The two most technically challenging applications that run over PSnet today are CIMS and radio systems. Since our team includes the parties with the greatest involvement in deploying and operating CIMS and P25 radio systems within MBHSR, we are confident we have all necessary skills and capabilities "on deck" to continue to evolve these vital applications and improve integration with PSnet to serve the entire Region.

## 12. Planning and technical support for secure mobile devices and applications running over the network.

Just as PSnet serves as a platform for applications, it can also serve as a vehicle for extending applications to a variety of current and future mobile devices. This will certainly be an area where technological advances will continue at a rapid pace.

For over five years, PSnet has provided a secure link to Sprint's cellular network (both 3G and 4G) in order to allow mobile devices to reach services via PSnet. Chelsea Police have been the only users of this service so far, but it could be trivially extended to other agencies via PSnet. This model could also be used to facilitate access from other cellular providers, where the economies of scale could make it feasible to establish redundant, highly secure access to the provider systems. A similar approach could also be a first step to provide access to "FirstNet" services.

VPN remote access is another means by which mobile devices access applications and services via PSnet. This capability is used extensively today, and we expect to upgrade VPN remote access gateways to enhance and extend these services. We have also supported various demonstrations of mobile access to PSnet, including a recent demonstration that used a smart phone as a remote handheld camera that delivered video directly to a video server at Boston Police Headquarters.

There are also opportunities to leverage enhanced data services provided with new generations of public safety portable/mobile radios. Since PSnet already integrates with these radio systems, this is imminently feasible, assuming that there are applications that would use such a service.

We will work with the PSnet EC to develop plans and set priorities for extending services to mobile platforms and for leveraging mobile networks, including FirstNet and emerging 5G networks. An important first step in this planning process will be requirements gathering, and it may be worth establishing a technical committee to continue to track this space and prepare recommendations for where to make future investments.

#### Section 5: Contractor Experience/Qualifications

#### a. Demonstrate extensive experience with FIPS 140 Compliance;

Our team has more than two decades of in-depth knowledge of, not only the FIPS 140-2 standard, but also with the consequences of real-world products being validated against this standard, which generally reduces security. We have also operated PSnet firewalls in the FIPS 140-2 compliant mode, which is rarely done in practice. We understand these tradeoffs, and we have the expertise to make reasoned recommendations for dealing with what is now a seriously out-of-date validation regime.

## b. Show proven success involving medium to large Public Safety Network projects:

LAN-TEL Communications and its partners have significant experience in public safety network technologies development, engineering design, maintenance and repair. LAN-TEL is the Commonwealth's "go-to" relied upon public safety network integrator having provided hundreds of wireless video security system installations throughout New England. Our project portfolio contains small schools and towns in New England to large public safety networks for cities and communities in Greater Boston. LAN-TEL employs a large crew of union-based field installation technicians. The team at LAN-TEL manages the CIMS network and the team at Interisle manages the PSnet backbone. Skywave has played a major role in deploying and supporting public safety voice radio systems in the greater Boston area, and around the country.

## c. Demonstrate experience in fiber optic network, microwave, and wireless network technologies development:

The LAN-TEL and Interisle combined teams have in-depth experience in fiber optic networks, microwave, and wireless network technologies development as the current managers and providers for the CIMS and PSnet network. In addition, Interisle and Skywave have worked on integrating both legacy LMR and modern P25 radio systems and consoles into PSnet. Our combined decades of experience in these technologies and direct experience and handling of the PSnet backbone gives us the expertise and qualifications for this contract.

#### d. Demonstrate familiarity with technologies and network components used in the PSnet backbone and various Commonwealth and local government Public Safety Network Infrastructure;

See C; we are the current providers of the contract and have in-depth knowledge of the PSnet backbone. LAN-TEL is the public safety network integrator for local governments in the Greater Boston area and in the CIMS network. Our team has direct, hands-on experience with every piece of equipment in PSnet and CIMS, as well as each of the sites.

## e. Demonstrate success in internetworking requirement gathering and analysis;

We have extensive experience in internetworking requirement gathering and analysis through our partner Interisle. Interisle's expertise in managing and enabling networks using diverse telecommunication technologies is evidenced through its in-depth knowledge and experience coordinating and quarterbacking the PSnet backbone.

## f. Demonstrate experience in network architectural principles and design;

Members of our team have directly contributed to modern network architectural principles, and associated design practices going back to the '70s and '80s. Chuck Wade was the Director of Advanced Technology at Motorola's Codex division during '80s where significant contributions were made to industry networking standards, and he directly contributed to the design of the NYSE trading floor network in the '90s, including its security architecture. Fred Goldstein is an acknowledge expert in telephony systems and wireless technologies, while Colin Strutt was a lead architect of network management systems in the '80s and '90s that are still in use today, for which he was assigned six patents. All the Interisle principals were involved in working on various industry standards initiatives that have helped shape modern networks, and we continue to be engaged in new initiatives that impact the evolution of the modern Internet.

## g. Demonstrate experience in network security requirements and security device operation;

The Interisle principals have deep expertise in all aspects of network and applications security. Lyman Chapin is on the ICANN Security and Stability Advisory Council (SSAC), and regularly provides advice on securing the core infrastructure services of the Internet. Chuck Wade has extensive experience adopting modern security technologies to multiple application areas in the financial industry, including trading systems, payment systems, online banking, and mitigation against a variety of threats to financial services. For PSnet, our team regularly monitors all sources of information on security threats as they emerge, and we have directly responded when these threats posed concerns for PSnet operations. Colin Strutt conducts weekly audits of Internet firewall logs and trap events, and we have shared these results with other players to help them resolve potential problems with their applications (e.g., BRIC CrimeView, FATPOT). LAN-TEL and Interisle have collaborated on significant hardening of camera system security, while Interisle and Skywave have deployed security measures to protect voice radio systems and consoles.

#### h. Have or quickly achieve an understanding of the complexity of the evolution of the public safety backbone systems and projects with regard to multiagency/entity interdependencies (i.e. MEFON, MBI, Loop A, BoNET, DCJIS, SIMS);

LAN-TEL has in-depth understanding of the complexity of the public safety backbone system and projects with regard to multiagencies and entities. Since 2012 LAN-TEL has had the privilege to monitor and maintain the Metro Boston Homeland Security (MBHSR) Critical Infrastructure Monitoring System. (CIMS) This consists of 9 cities and towns in the Boston Urban Area Security Initiative (UASI) who are part of the PSnet area. The network today, consisting of over 800 cameras, 1600 antennas and 26 servers spread between these same 9 cities and towns. The cameras are critical to those communities' public infrastructure, from dayto-day activities to major events. LAN-TEL is entering its fourth year of servicing and maintaining the CIMS network. Since providing expertise, service, and 24-hour, seven days per week, 365-day coverage, within CIMS, LAN-TEL was selected in 2014, 2015, 2016, to operate the security camera system, and video monitoring for the St. Patrick's Day Parade and Boston Marathon. In 2016, LAN-TEL assisted in the deployment of providing camera installations for the New York City Marathon. LAN-TEL is entering its fourth year of servicing and maintaining the CIMS network for the City of Boston. LAN-TEL is a trusted resource for UASI and other Greater Boston police and fire departments that contract with LAN-TEL.

#### i. Demonstrate an understanding of the critical role of the PSnet backbone in the context of Public Safety interoperability;

See h. Above

## j. Demonstrate adequate technical and financial resources for performance as required;

LAN-TEL Communications has been in business for over 26 years, is bonded and insured, an authorized vendor on the current Statewide Contract FAC64. LAN-TEL Communication's is listed on MA FAC64, GSA Schedule 84, MA ITC54. Interisle is currently working under the sixth contract for engineering and support of PSnet and has been in business for sixteen years. Skywave Communications began business in 1982 and has played a major role in public safety radio deployments throughout the metro Boston region over the past two decades.

#### k. Demonstrate a satisfactory record of performance in past contracts.

Our team has been working on PSnet and CIMS through multiple contracts

from the outset of these initiatives. We believe our performance record speaks for itself. We have also taken on a variety of projects for Massachusetts, and other states, as well as many municipalities. All of these projects have been successful, and we take pride in the value we have provided to our clients.

### Information and contact information available for the following customers is available upon request.

#### Federal:

United States Department of Homeland Security Federal Protective Service 25 Sudbury Street Boston, Ma 02203

#### State:

Massachusetts State Police 59 Horse Pond Road Sudbury, MA 01776

#### City:

City of Boston Police Department 1 Schroeder Plaza Boston, MA 02120

City of Boston Fire Department 59 The Fenway Boston, MA 02215

#### Town:

Town of Brookline Police Department 350 Washington St Brookline, MA 02445

Town of Brookline School Department 333 Washington St Brookline, MA 02445

Town of Brookline Housing Authority 90 Longwood Ave #1 Brookline, MA 02445
# Maritime:

United States Coast Guard, District 1 427 Commercial St Boston, MA 02446

Massachusetts Harbormasters Association 39 School Street Rockport, Ma 01966

# **PSnet Engineering & Support Services Personnel Qualifications**

We have assembled a team of highly qualified professionals who can collectively address all aspects of the Scope of Work described in Section 3, the Project Requirements from Section 4, and the Personnel Qualifications stipulated in this Section 5. We will allocate staff to the overall project based on the priorities and plans that are approved by the PSnet EC.

Our team collectively provides the following skills and areas of expertise:

- Project management of both engineering and maintenance/support activities
- Engineering management
- Requirements gathering and assessment
- Policy definition and interpretation
- Strategic planning and tactical execution
- Technical documentation
- Effective written/oral communications with diverse audiences
- Task coordination in a complex, multi-entity, multi-discipline, multi-vendor context
- Comprehensive understanding of public safety agency needs for communications and information sharing
- Networking protocols at all layers
- Internetworking, where multiple networks are integrated into a cohesive whole
- Network management, including continuous monitoring, fault management, configuration management, and performance management
- Security for communications and applications, including authentication, access controls, confidentiality, integrity, accounting, and audit controls
- Risk assessment and threat analysis
- Understanding of how threat landscape is evolving
- Network switching and routing
- Gateway and firewall systems
- Mobile networking

- Network quality of service controls
- Voice and video interactive and streaming services
- Video recording and replay/search systems
- Situational awareness
- High availability networking extending to survivable networks
- Problem analysis and resolution
- Application platforms and Operating Systems
- Virtualized computing environments
- Storage systems, especially in shared, multi-application contexts
- Database systems
- System administration
- Custom scripting to support system administration, data collection/aggregation, and data analysis
- Fiber optics and transceivers
- Wave division multiplexing
- Interior and exterior fiber optic cabling and splicing
- Microwave radio technologies and modulation schemes
- Microwave radio installation, alignment, and maintenance
- Path and technology diversity in network backbones
- Wi-Fi and related wireless data systems
- Cellular LTE networks, services, and technologies
- Traditional Land Mobile Radio (LMR) systems and trunking
- P25 radio technologies and systems
- Radio console and dispatch systems
- E911 systems
- FCC licensing practices for all radio bands, including microwave
- Site design methodologies
- R56 practices, including related EMI and ESD mitigation methods
- On-site maintenance and repair services
- Equipment installation and cabling
- Power management and backup

The members of our team have worked together for years, and value being able to share expertise and knowledge with each other. We fully appreciate the complexity of the systems we deal with and recognize that no one person can fully comprehend all aspects of modern networks and applications. Through teamwork, though, we can and do achieve much more while confronting challenges that might exceed our individual capabilities. We have also demonstrated our ability to solve problems collaboratively, while avoiding the pitfalls associated with finger pointing.

Presented below are professional biographies of the key members of our team. Nearly everyone has worked on projects for MBHSR and most have direct experience with PSnet. Team members also have experience with camera systems and public safety radio systems.

# **Technical Project Manager**

# LEE ERIC JOHNSON – Current Project Manager for CIMS

Eric is a strategic and forward-thinking Security Management Expert with a history of success designing and supporting federal, state municipal, and private infrastructure environments while directing the full lifecycle of high-profile, technically complex implementations. He acts as a mitigation agent, capable of critically evaluating and responding to rapidly evolving criminal and terrorist threats. Conceives and executes strategies that optimize security operations, elevates mitigation, and reduces vulnerabilities. Security successes are complemented by a strong law enforcement and technical background coupled with a vast network of law enforcement and industry professionals. Provides physical security management and leadership for the collaborative efforts of Implementation Specialists, Field Service, Grant Proposals, Software Development, Training, and Customer project teams to ensure the installation and use of CCTV security surveillance solutions for law enforcement agencies, and municipal police departments. Currently serves as the principal project manager and sales representative for an Urban Area Security Initiative-/Department of Homeland Security (DHS) funded surveillance network. This wireless IP 800 camera network is shared by the Police Departments of the City of Boston, 11 Greater Former leader at the Department of Homeland Security. Function as a regional point of contact for the Chemical Facility Anti-Terrorism Standards regulation to chemical industry private sector officials, emergency response teams and law enforcement officials such as Region 2 New Jersey, New York, U.S Virgin Islands, and the New York metropolitan area (New York, New Jersey, Philadelphia) NYPD Counter-Terrorism Division, FBI Joint Terrorism Task Forces, United States Coast Guard Field Intelligence Support Teams, State Fusion Centers, BATFE, and/or other Federal, State, Local and Tribal agencies.

# Senior Network Engineer

# Chuck Wade, Interisle – Current Project Manager, PSnet

With over four decades of direct experience in information networks, Chuck Wade is well recognized and respected as an expert in the architecture, technologies, and operation of resilient, secure networks. He has directly contributed to networks at the core of the U.S. Securities industry, and other critical networks serving the financial industry, including the Secure Financial Transaction Infrastructure (SFTI)<sup>1</sup> network deployed by the New York Stock Exchange (NYSE) to the entire securities industry, as well as the trading floor networks for the NYSE and American Stock Exchange (AMEX). Over the past

<sup>&</sup>lt;sup>1</sup> https://www.nyse.com/connectivity/sfti

ten years, he has applied his experience with mission-critical networks to new networks serving the needs of local governments, especially in support of public safety. He has served as the project leader for the Metro Boston PSnet effort throughout most of the past decade, and has contributed directly to knitting together the disparate network assets of nine municipalities into a regional network serving public safety agencies. He also served as the project leader and primary report author for Interisle's engagement with Barnstable County to survey IT and communications assets County-wide.

Mr. Wade has also played lead roles in applying modern information security techniques to real-world problems in electronic commerce and payments, and to addressing access control issues for information systems in the financial industry and to municipal and public safety networks. He has extensive experience with Public Key Infrastructure (PKI) systems used to cryptographically secure electronic payment and ecommerce transactions, as well as in everyday applications, such as secure email, VPN tunnels, and access control measures. He has been a key technical contributor to new electronic payment systems, including the FSTC's electronic check (eCheck) initiative.

On the PSnet project, he has led efforts to develop cost effective measures for improving the survivability and overall resilience of regional networks, including hardening against cyber threats. He completed a major overhaul of the PSnet backbone switching and routing infrastructure so that PSnet is now a full Layer 2/3 network with true redundancy of all backbone network infrastructure.

Before co-founding Interisle, Mr. Wade served as a Senior Researcher at CommerceNet (2000–2001) and in the 1990s as a Principal Consultant in the Information Security Group of BBN Technologies. During the 1980s he served as the Advanced Technology Director for networking systems at the Codex division of Motorola.

Mr. Wade holds Sc.B. and Sc.M. degrees in Electrical Engineering from Brown University.

# Networ<u>k Manager</u>

# Colin Strutt, Interisle

Colin Strutt holds six patents on enterprise management technology and brings more than thirty-five years of direct experience with information technology, as a developer, architect, and consultant, with recent work including design and operation of a regional public safety network, providing technical expertise relating to patents, and analysis of world-wide Internet use.

Dr. Strutt's expertise and experience have created substantial and sustainable value for a broad range of enterprises. He is particularly adept at designing and running interactive meetings to develop strategies that transform key business

systems, applications, products, and services, and at analyzing large volumes of data.

Before co-founding Interisle, Dr. Strutt was responsible for defining the program that delivered the eBusiness Vision Workshop to Compaq Computer Corporation's Professional Services clients. This service offering helped clients make sense of the confusing world of eBusiness and define strategies for realizing their enterprise's eBusiness vision. From 1980 to 1999, as a project leader, technical leader, and technical director at Digital Equipment Corporation (DEC) and Compaq, he led projects in DECnet, Ethernet, terminal servers, enterprise management, directory services, collaboration software, Internet appliances, and security. Before joining DEC, Dr. Strutt worked from 1975 to 1980 at British Airways, ensuring that the operating systems and network software supported the airline's planning and operational research departments.

Dr. Strutt has published and spoken extensively on networking technology, name collisions, enterprise management, eBusiness, and scenario planning, and has represented the interests of Digital Equipment, Compaq, and the Financial Services Technology Consortium in national and international industry standards bodies.

Dr. Strutt holds a B.A. (with First Class Honours) and Ph.D. in Computer Science from Essex University (UK).

# Network Security Specialist

Chuck Wade, Interisle (see above for bio)

# Lyman Chapin, Interisle

Lyman Chapin is co-founder and partner at Interisle Consulting Group, where he advises companies, non-profit organizations, and government agencies on Internet technology, policy, and governance; telecommunications network security and resilience; and critical infrastructure protection. Before joining Interisle as one of the founding partners in 2002, he was Chief Scientist at BBN Technologies.

Mr. Chapin is a Fellow of the IEEE, and was a founding trustee of the Internet Society. He has served as a Director of the Internet Corporation for Assigned Names and Numbers (ICANN), where he currently serves as a member of the Security and Stability Advisory Committee and chairs the Registry Services Technical Evaluation Panel and the DNS Stability Panel, and as chairman of the Internet Architecture Board (IAB), the ACM Special Interest Group on Data Communication (SIGCOMM), and the ANSI and ISO standards groups responsible for Network and Transport layer networking standards. Mr. Chapin was a principal architect of the Open Systems Interconnection (OSI) reference model and protocols, and is the co-author of Open Systems Networking—TCP/IP and OSI.<sup>2</sup> He currently serves as the USA/ACM representative to the International Federation for Information Processing Technical Committee on Communication Systems (IFIP TC6) and recently completed a five-year term as the USA representative to the NATO Science Committee<sup>3</sup> networking panel.

His professional interests include Internet technology, particularly routing, traffic engineering, and the Domain Name System (DNS); Internet governance; and information security and personal privacy.

Mr. Chapin holds a B.A. in Mathematics from Cornell University.

# Microwave Engineer

# Fred Goldstein, Interisle

Fred Goldstein advises companies on technical, regulatory and business issues related to the telecommunications, cable and Internet industries, especially in areas where they overlap. He has guided many competitive telecommunications and Internet service providers on strategy, network architecture, design, and deployment issues, often focusing on the complex issues caused by regulatory changes and uncertainty. He has designed multifunction backbone networks for public and private sector clients. He has worked with equipment vendors to help refine their products for the American carrier market, has helped major enterprises and government agencies develop backbone networks, and helped wireless carriers with guidance in spectrum auctions. He has served as an expert witness in regulatory proceedings including intercarrier compensation, access to network elements, and the regulatory classification of services on multi-function networks.

Prior to joining Interisle, he was principal of Ionary Consulting; earlier, he was employed by Arthur D. Little Inc. in its Communications, Information and Electronics practice, and by TIAX LLC. He was previously with the Network Consulting Practice at BBN Technologies. He was earlier employed by Digital Equipment Corporation as an in-house telecommunications consultant, and as a strategic planner and product manager in its Networks and Communications business. Before that, he was corporate telecommunications manager for Bolt Beranek and Newman, after working for the telecom regulatory consulting firm Economics and Technology Inc.

He holds a Bachelor of Arts degree from Skidmore College. He is a Senior Member of the IEEE. He holds three patents in the area of Asynchronous Transfer Mode technology, including two for methods of congestion control and avoidance, and one

<sup>&</sup>lt;sup>2</sup> http://www.interisle.net/sub/frontiers.html

<sup>&</sup>lt;sup>3</sup> http://www.nato.int/science/index.html

for a LAN-oriented ATM switching system. .He is currently a columnist for *TMCnet*, a major technology web site, focusing on Telecom Policy issues. Books he has written include *ISDN In Perspective* (1992) and *The Great Telecom Meltdown* (2005).

# Microwave Technician

Lee Eric Johnson (see above)

# <u>IT Technician</u>

# Eric Nisbet

Eric Nisbet has worked in every facet of the Security, Fire Alarm, and Low Voltage Systems Integration Industry. He is a highly-skilled technician in the Installation, service, and maintenance of security systems. Adept at managing and coordinating field operations, purchasing, billing, sales, management, and consulting, Eric has been an integral part of the CIMs team in Boston as well as all municipal projects at LAN-TEL Communications for over a decade. A key contributor and member of LAN-TEL's public safety team, Eric brings a wealth of knowledge to his position as a leader in security products and service. His expertise in analyzing issues and quickly and expertly fixing issues for clients is a value for all projects.

# IT/Telecommunications Technician

# Mark Savage

Mark Savage is a highly-skilled IT/Telecommunications technician and Foreman for LAN-TEL Communications, Inc. Having been in the field for over two decades, Mark is an experienced team leader who has worked in the Boston area for the largest corporations, Greater Boston Police Departments and other crucial accounts. Mark brings a wealth of expertise and knowledge in security products and technologies to the team and clients he serves.

# Radio Technician – Ellison Patterson, Jr.

Ellison has the ability to figure out a way to succeed approach. Since his involvement beginning in 1982, he has demonstrated the ability to manage complex technical opportunities and develop a solution to overcome a technical limitation that would have impacted the sale and successful implementation of an engineered product. Ellison demonstrates the ability to connect with the customer and place himself in their shoes to help foster a superior customer experience and ultimate contract sign-off process on time.

He founded Skywave Communications Inc. to address a growing need for customization of the Centracom Gold and Elite dispatch product line. This included items such as paging, special pop-up menus utilizing special keystrokes, and customization of user software for consoles. In the City of Philadelphia, Ellison worked on an extensive trunking system with 48 dispatch consoles that the customer required to be integrated as a PBX switch. The City of Philadelphia required a custom dispatch console to integrate 80 SPI phone interface modules. Later, Ellison worked on a new dispatch center for the City of Boston, including police, fire and EMS. The customer wanted to duplicate existing SP products from their Centracom Series I console to their new Series II Gold button and lead consoles. Skywave reviewed existing special (SP) requirements and proposed solutions to the local Motorola Solutions Boston field team about how to accomplish these goals and respond to the RFP. Motorola Solutions ultimately accepted these engineered solutions and Skywave successfully implemented this system for the City of Boston. Ellison has a unique ability to combine commercial off the-shelf (COTS) based products and leverage their architecture to enhance existing Motorola Solutions Public Safety product capabilities. In addition, he is able to complete pre-sale design cost estimating.

# Carl Bourke – Electronics Technician III

Possesses both operational and technical experience in the mission critical public safety arena and leverages both experiences to provide the customer with the highest level of technical assistance. Designs system fleet mapping, radio template design and programming, console configuration and layout techniques. As a Communications System Technician/System Technologist, Carl specializes in Motorola CPS Software programming, upgrading firmware and tuning radios. He Installs, maintains, repairs, tests and programs Public Safety Two Way Radio Systems. He works with Customer to ensure proper operation of their Two-Way Radio System

# Joe Hathcock – Electronics Technician III

Joe has over 25 years of experience in the land mobile radio industry including time at the Motorola FSO group located in Plantation, Florida. He has extensive experience and knowledge with large system integrations whose workmanship far exceeded industry standards such as R56. Currently involved in the upgrade and expansion of live Public Safety Systems for Osceola County, FL; Sumter County, FL; Cayuga County, NY; Monroe County, NY; Niagara County, NY; Cambridge, MA and City of Boston. Installs and supports the latest technology available, i.e. P25 7X Networks, 48 Volt DC Systems.

# Section 6: Acquisition Method to be Used for this Contract

We understand the method is fee-for-service and there are no hourly rates. Our fee will be included in the cost proposal submitted.

# **Section 7: Subcontractors**

# LAN-TEL will be using two subcontractors for this as part of our integrated team.

# **Interisle Consulting Group**

Resilient systems and networks position your organization to thrive under any circumstances—to respond dynamically to new technologies, new business opportunities, and new threats in an ever-changing world. Interisle's world-renowned Internet and public safety networking experts know that what matters most about technology is how it helps you achieve your objectives. We look beyond the impersonal canned solutions promoted by traditional large consulting firms, working closely with our clients to find the enduring architectural foundation that unites technology and business strategy to create sustainable value. Everything we do is focused cleanly and efficiently on your specific situation—all of our consultants are seasoned professionals with international reputations, and we don't waste your time (or money) on anything that doesn't directly benefit your business.

# **Skywave**

Skywave Communications began business in 1982 in Rochester, New York providing system integration and repair services to local public safety organizations in the Monroe County, New York region. In 2002, Skywave, a women owned business, was designated as a Specialty Subcontractor to Motorola Solutions. Skywave quickly recognized a gap in service from the current providers in the Land Mobile Radio (LMR) arena. The niche market they identified was to provide highly technical engineering and installer skills with the strategy of quality delivery to the customer. LMR was fundamentally changing during this period from a legacy conventional analog paradigm to more advanced digital trunking and an advanced conventional market that leveraged computer network based architecture, which required advanced technical skills. This developed into a competitive advantage for Skywave over other service providers, which opened up new opportunities for us in other geographic territories. When other service providers were unable to provide assistance on high profile projects where project risks were abound, Motorola Solutions sought Skywave's services. Skywave Communications, Inc., subsequently obtained Motorola Solutions Service Elite Specialist certification, Manufacturer Representative status as well as Certified Service Center accreditation.

# Section 8: Warranty, Critical Spare Parts and Training

LAN-TEL Communications is a 24-hour service and support company. It is our mission to resolve your service issues in a timely manner. Our live dispatcher is available from 8am to 5pm Monday to Friday. After-hour service will be handled by our answering service. A service technician will be dispatched promptly via phone and/or email to your site, with knowledge of the nature of the problem and potential spare parts needed.

Quality service begins with training and LAN-TEL technicians are certified by each manufacturer to service their product. Newly hired LAN-TEL technicians are required to attend and graduate from a five-year apprentice training program taught by the IBEW Local 103/JATC. Experienced technicians receive a minimum of 40 hours training, conducted in our Norwood office, on the various products we install.

With our trained service force of technicians, LAN-TEL responds quickly with quality technicians and "fix it the first time" solutions. We stock our service vans with standard replacement parts for the systems we sell and support and will stock additional inventory to support the proposed system in our Norwood and Boston offices. If a part is not immediately available in a technician's vehicle, we will expedite it to your site for installation. To avoid any potential long outages, faulty equipment will be replaced with a loaner in working condition until the component has been fixed or replaced.

Our Service Team provides:

Twenty-Four/Seven Service Response

Our Service number, 844-575-2001, is answered around the clock for service dispatch.

A technician(s) will be dispatched promptly via phone and/or email to your site, with the nature of the problem and potential spare parts needed.

A record is kept of each service call, the problem, and parts used.

This enables us to establish if there are repeat calls and to identify those areas in need of replacement or upgrading.

Service is available to all our customers under warranty or contract on a 24/7 basis.

We offer comprehensive service contracts, preventive maintenance and on-going evaluations to keep your system working.

# Section 9: Total Anticipated Duration of Contract and Renewal Options

Contract terms and options are understood.

# Section 10: Special Procurement and Contract Conditions

All subsections are understood.

# **Project Manager**

# LEE ERIC JOHNSON - Current Project Manager for CIMS

Eric is a strategic and forward-thinking Security Management Expert with a history of success designing and supporting federal, state municipal, and private infrastructure environments while directing the full lifecycle of high-profile, technically complex implementations. Act as a mitigation agent, capable of critically evaluating and responding to rapidly evolving criminal and terrorist threats. Conceive and execute strategies that optimize security operations, elevate mitigation, and reduce vulnerabilities. Security success complemented by strong law enforcement and technical background coupled with a vast network of law enforcement and industry Provides physical security management and leadership for the professionals. collaborative efforts of Implementation Specialists, Field Service, Grant Proposals, Software Development, Training, and Customer project teams to ensure the installation and use of CCTV security surveillance solutions for law enforcement agencies, and municipal police departments. Currently serve as the principal project manager and sales representative for an Urban Area Security Initiative-/Department of Homeland Security (DHS) funded surveillance network. This wireless IP 800 camera network is shared by the Police Departments of the City of Boston, 11 Greater Former leader at the Department of Homeland Security. Function as a regional point of contact for the Chemical Facility Anti-Terrorism Standards regulation to chemical industry private sector officials, emergency response teams and law enforcement officials such as Region 2 New Jersey, New York, U.S Virgin Islands, and the New York metropolitan area (New York, New Jersey, Philadelphia) NYPD Counter-Terrorism Division, FBI Joint Terrorism Task Forces, United States Coast Guard Field Intelligence Support Teams, State Fusion Centers, BATFE, and/or other Federal, State, Local and Tribal agencies.

# Section 11: Non-Price Technical Proposal Preparation, Evaluation and Selection

# a. **Proposer should provide a brief history of their firm organization or** relevant professional experience;

LAN-TEL Communications and its partners have significant experience in public safety network technologies development, engineering design, maintenance and repair. LAN-TEL is the Commonwealth's "go-to" relied upon public safety network integrator having provided hundreds of wireless video security system installations throughout New England. Our project portfolio contains small schools and towns in New England to large public safety networks for cities and communities in Greater Boston. LAN-TEL employs a large crew of union-based field installation technicians. The team at LAN-TEL manages the CIMS network and the team at Interisle manages the PSnet backbone. Skywave has played a major role in deploying and supporting public safety voice radio systems in the greater Boston area, and around the country.

**Interisle** - Resilient systems and networks position your organization to thrive under any circumstances—to respond dynamically to new technologies, new business opportunities, and new threats in an ever-changing world. Interisle's world-renowned Internet and public safety networking experts know that what matters most about technology is how it helps you achieve your objectives. We look beyond the impersonal canned solutions promoted by traditional large consulting firms, working closely with our clients to find the enduring architectural foundation that unites technology and business strategy to create sustainable value. Everything we do is focused cleanly and efficiently on your specific situation—all of our consultants are seasoned professionals with international reputations, and we don't waste your time (or money) on anything that doesn't directly benefit your business.

Skywave Communications began business in 1982 in Rochester, New York providing system integration and repair services to local public safety organizations in the Monroe County, New York region. In 2002, Skywave, a women owned business, was designated as a Specialty Subcontractor to Motorola Solutions. Skywave quickly recognized a gap in service from the current providers in the Land Mobile Radio (LMR) arena. The niche market they identified was to provide highly technical engineering and installer skills with the strategy of quality delivery to the customer. LMR was fundamentally changing during this period from a legacy conventional analog paradigm to more advanced digital trunking and an advanced conventional market that leveraged computer network based architecture, which required advanced technical skills. This developed into a competitive advantage for Skywave over other service providers, which opened up new opportunities for us in other geographic territories. When other service providers were unable to provide assistance on high profile projects where project risks were abound, Motorola Solutions sought Skywave's services. Skywave Communications, Inc., subsequently obtained Motorola Solutions Service Elite Specialist certification, Manufacturer Representative status as well as Certified Service Center accreditation.

# b. **Proposer shall list the number of current personnel that it employs** whether full time or part-time.

# LAN-TEL Communications employs 140 full time employees.

# c. Proposer shall detail the firm's or their own experience with similar projects completed during the past three years or more;

# **CIMS Boston, MA**

Since 2012 Lan-Tel has had the privilege to monitor and maintain the Metro Boston Homeland Security (MBHSR) Critical Infrastructure Monitoring System. (CIMS) This consists of 9 towns in the Boston Urban Area Security Initiative (UASI).

The network today, consisting of over 800 cameras, 1600 antennas and 24 servers is spread between these same 9 cities and towns. The cameras are critical to those communities' public infrastructure, from day-to-day activities to major events. LAN-TEL is entering its fourth year of servicing and maintaining the CIMS network for the City of Boston Office of Emergency Management. Since providing expertise and 24/7 365-day coverage of maintaining this key position within CIMS. Lan-Tel was chosen in 2014, 2015, 2016, for assisting in the security camera installations and video monitoring during the St. Patrick's Day Parade and Boston Marathon. In 2016 Lan-Tel assisted in the deployment of providing camera installations for the New York City Marathon. LAN-TEL is entering its fourth year of servicing and maintaining the CIMS network for the City of Boston. Lan-Tel is a trusted resource for UASI and other Greater Boston police and fire departments that contract with Lan-Tel.

# d. If proposer is not an individual, the proposer must submit an audited financial statement for the most recent financial year, or another form of documentation that affirms the financial stability of the proposer's organization.

2016 attached. 2017 Audited Financials will be available on May 15<sup>th</sup> and can be provided upon request

# e. Proposer shall provide a list of specific qualifications that proposer has in supplying the services listed in this proposal, including professional designations, affiliations, certifications and licenses;

Team members have professional affiliations with Institute of Electrical and Electronics Engineers (IEEE), New England Electrical Contractors Association, Security Industry Association, American Society for Industrial Security Association, Association for Computing Machinery (ACM), Associated Subcontractors of Massachusetts, Building Industry Consulting Service International (BICSI), Wireless ISP Association (WISPA). Team members are also OSHA 30 Certified, have R56 certifications and are BICSI certified. (other certifications attached)

f. Proposer shall submit the names and resumes and level of participation of staff that will be assigned to the engagement, listed under the titles in the personnel qualifications in Section 5b, and their respective experience in these types of engagements;

Bios and respective experience listed in section 5b and according experience to complete necessary work for engagements is included in those bios.

g. Proposer shall submit a minimum of three (3) references from current and/or former clients for projects similar of size and scope. List shall include current contact information including contact name, agency, address and phone number:

Mike Dimeo Marshfield Police Department Marshfield Harbormaster 1639 Ocean Street Marshfield, MA 02050 (781) 834-6655 ext. 175

Ken Corsen Hingham Police Department 212 Central St Hingham Massachusetts 02043 781-741-1450

Rob Mallet Town of Milton 525 Canton Avenue, Milton MA 02186 617-898-4800

# Section 12: RFP Process Timeline

Understood and completed when applicable.

(FORM CM-06)

# **CERTIFICATE OF AUTHORITY**

(For Corporations Only)

4/26/2018
(Current Date)
At a meeting of the Directors of the LAN-TEL Communications, Inc.
(Name of Corporation)
duly called and held at 1400 Providence Highway, Norwood, MA 02062
(Location of Meeting)
on the <u>26</u> day of <u>April</u> 2018 at which a quorum was present and acting,
it was VOTED, that <u>Joseph H. Bodio</u> (Name)
the <u>President/CEO</u> of this corporation is hereby
(Position)
authorized and empowered to make, enter into, sign, seal and deliver in behalf of this corporation
a contract for <u>PSNET-3, PSNET Development and Management</u>
(Describe Service)

with the City of Boston, and a performance bond in connection with said contract.

I do hereby certify that the above is a true and correct copy of the record that said vote

has not been amended or repealed and is in full force and effect as of this date, and that

Joseph H. Bodio		·····	•
	(Name)		
is the duly elected	President/CEO		of this
	(Position)		
corporation.			

Attest:

(Affix Corporate Seal Here)

(Clerk) (Secretary) of the Corporation

APPROVED AS TO FORM BY CORPORATION COUNSEL FEBRUARY, 1998 THIS FORM IS VOID AND WITHOUT LEGAL EFFECT IF ALTERED IN ANY WAY

(PUB July 2012)

خت

# **CITY OF BOSTON CONTRACTOR CERTIFICATION**

To the Official, acting in the name and on behalf of the City of Boston

A. The undersigned agrees to furnish all labor and materials and to perform all work required for:

PSNET Development and Management

in accordance with the terms of the accompanying contract documents.

B. The Contractor is a/an:

Massachusetts Corporation	
(Individual-Partnership-	·Corporation-Joint Venture-Trust

If the Contractor is a Partnership, state name and address of all partners: 1.

2. If the Contractor is a Corporation, state the following:

Corporation is moorporated in the State of <u>Inassachuseus</u>	Corporation is incorporated in the State of	Massachusetts
-----------------------------------------------------------------	---------------------------------------------	---------------

President is Joseph H. Bodio

Treasurer is Joseph H. Bodio

Place of business is 1400 Providence Highway, Suite 3100, Norwood, MA\_02062

(Street)

(City, State and Zip Code)

3. If the Contractor is a Joint Venture, state the name and business address of each person, firm or company that is party to the joint venture:

A copy of the joint venture agreement is on file at and will be delivered to the Official on request.

4. If the Contractor is a Trust, state the name and address of all Trustees:

The trust document(s) are on file at \_\_\_\_\_\_, and will be delivered to the Official on request.

5. If the business is conducted under any title other than the real name of the owner, state the time when, and place where, the certificate required by General Laws, c.110, §5, was filed:

The Taxpayer Identification Number\* of the contractor (the number used on the 6. Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941) is: 04-3141040

\*If individual, use Social Security Number

7. City of Boston Ordinance, Chapter IV, § 4-8 requires City Contractors to safeguard unprotected pedestrians, cyclists, and motorcyclists by installing side underride guards, convex blind spot mirrors, cross-over mirrors, and appropriate warning signage on all large vehicles used within the City of Boston in connection with a City

Contract. Large vehicles are those with a gross weight exceeding 10,000 lbs., a trailer with an unladen mass exceeding 10,000 lbs., or a semi-trailer with a gross weight exceeding 26,000 lbs. Contractors are required to have such large vehicles inspected by the City prior to starting work on a City of Boston Contract. Additional details may be found at <u>www.cityofboston.gov/procurement</u>.

8. The undersigned certifies under penalties of perjury that this bid or proposal has been made an submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals.

Contractor:	LAN-TEL Communications, Inc.
By:	Ris
	(Sign Here)
Title:	President/CEO
Business Address:	1400 Providence Highway, Suite 3100
	(Street)
	Norwood, MA 02062
	(City, State and Zip Code)

# NOTE: This statement must bear the signature of the contractor.

If the Contractor is an individual doing business under a name other than his own name this statement must so state, giving the address of the individual.

If the Contractor is a partnership this statement must be signed by a general partner designated as such. If the Contractor is a corporation, trust or joint venture this statement must be signed by a duly authorized officer or agent of such corporation, trust or joint venture.

APPROVED AS TO FORM BY CORPORATION COUNSEL AUGUST 2015 THIS FORM IS VOID AND WITHOUT LEGAL EFFECT IF ALTERED IN ANY WAY

(PUB AUG 2015)

# CM FORM 15A

# CORI COMPLIANCE

The City of Boston is subject to City of Boston Code, Chapter 4, section 7, which is intended to ensure that persons and businesses supplying goods and/or services to the City of Boston deploy fair policies relating to the screening and identification of person with criminal backgrounds through the CORI system. Vendors entering into contracts with the City must affirm that their policies regarding CORI information are consistent with the standards set by the City of Boston.

# CERTIFICATION

The undersigned certifies under penalties of perjury that the vendor is in compliance with the provisions of City of Boston Code, Chapter 4, section 7, as currently in effect. All Vendors must check one of the three lines below.

- 1. CORI checks are not performed on any Applicants.
- $\overline{\mathbf{V}}$ 2. CORI checks are performed on some or all Applicants. The Vendor, by affixing a signature below, affirms under penalties of perjury that its CORI policy is consistent with the standards set forth on the attached CM Form 15B.
- 3. CORI checks are performed on some or all Applicants. The Vendor's CORI policy is not consistent with the standards set forth on the attached CM Form 15B (a copy of the Vendor's written CORI policy must accompany this form).

Joseph H. Bodio Signature quotation, bid or proposal)

(Typed or printed name of person signing

LAN-TEL Communications, Inc. (Name of Business)

# NOTE:

The Awarding Authority may grant a waiver of CBC 4-7.3 under exigent circumstance on a contract by contract basis.

# Instructions for Completing CM Form 15B:

A Vendor should not check Line 1 unless it performs NO CORI checks on ANY applicant.

A Vendor who checks Lines 2 certifies that the Vendor's CORI policy conforms to the standards set forth in CM Form 15B. A Vendor with a CORI policy that does NOT conform to the standards set forth on CM Form 15B must check Line 3. Vendors who check Line 3 will not be permitted to enter into contracts with the City, absent a waiver, as provided for in CBC 4-7.4. For any waiver to be granted, a completed CM Form 15C must be completed by the awarding authority and attached hereto.

APPROVED AS TO FORM BY CORPORATION COUNSEL MAY 9, 2006 (PUB 2012)

(Form LW-2) (2/18)



# CITY OF BOSTON JOBS AND LIVING WAGE ORDINANCE

THE LIVING WAGE DIVISION • (617) 918-5236

# COVERED VENDORS LIVING WAGE AGREEMENT

At the same time the City of Boston awards a service contract through a bid, a request for proposal or an unadvertised contract, the Covered Vendor must complete this form and submit it to the City, agreeing to the following conditions. In addition, any subcontractor of the Covered Vendor shall complete this form and submit it to the City at the time the subcontract is executed, also agreeing to the following conditions:

# Part 1: Covered Vendor (or Subcontractor) Information:

Name of vendor:	LAN-TEL Communications, In	nc.		
Local contact per	son:			
Address 1400 Pro	ovidence Highway, Suite 3100, N	Norwood, MA 02062		
Str	reet	City	Zip	
Telephone #: 78	1.5551.8599	E-Mail: <u></u>	el.com	

# Part 2: Workforce Profile of Covered Employees Paid by the Service Contract or Subcontract:

A. List all Covered Employees' job titles with wage ranges (Use additional sheets of paper if necessary): Identify number of employees in each wage range.
 Remember, Covered Employees are only those employees that expend work hours on the contract.

JOB TITLE	< \$14.82 p/h	\$14.82 p/h- \$17.00 p/h	\$17.01 p/h- \$20.00 p/h	> \$20.01 p/h
telecommunications technician				5
telecommunications apprentice				1
Electronics technician				2
see attached extra page for more employees				

# <u>COVERED VENDORS LIVING WAGE AGREEMENT</u> <u>Continued:</u>

# Part 2: Workforce Profile of Covered Employees Paid by the Service Contract or Subcontract:

A. List all Covered Employees' job titles with wage ranges (Use additional sheets of paper if necessary): Identify number of employees in each wage range.
 Remember, Covered Employees are only those employees that expend work hours on the contract.

JOB TITLE	< \$14.82 p/h	\$14.82 p/h- \$17.00 p/h	\$17.01 p/h- \$20.00 p/h	> \$20.01 p/h
Solutions architect				1
Sr network engineer				1
Network manager				1
Microwave Engineer				1
Project Manager				1

OFFICE OF WORKFORCE DEVELOPMENT • 43 HAWKINS STREET • BOSTON, MA

- B. Total number of Covered Employees: 13
- C. Number of Covered Employees who are Boston residents: 1\_\_\_\_\_
- D. Number of Covered Employees who are minorities: \_\_\_\_\_
- E. Number of Covered Employees who are women: 0\_\_\_\_\_

**Part 3:** Covered Vendor's Past Efforts and Future Goals (Use additional sheets of paper if necessary in answering any of these questions):

Describe your past efforts and future goals to hire low and moderate income Boston residents:

LAN-TEL is an IBEW Local 103 contractor and as such must draw its labor from the union pool in

accordance with the collective bargaining contract. LAN-TEL will hire low and moderate income

residents to the extent they are available in the IBEW Local 103 Labor pool.

Describe your past efforts and future goals to train Covered Employees:

All of LAN-TEL's employees complete a 4-5 year apprenticeship training program and receive

continuous on-the-job training.

Describe the potential for advancement and raises for Covered Employees:

Advancement and raises are dictated by the collective bargaining agreement and the ability and

interest of the individual employee.

What is the net increase and decrease in number of jobs or number of jobs maintained by classification that will result from the awarding of the service contract:

LAN-TEL will use employees from its existing workforce for this contract.

THIS FORM APPROVED AS TO FORM BY CORPORATION COUNSEL 2 JUNE 2000

### Part 4: Subcontracts:

List all service subcontracts either awarded or that will be awarded to vendors with funds from the service contract:

### ADDRESS SUBCONTRACTOR

# AMOUNT OF SUBCONTRACT

Interisle Consulting Group 4 Tiffany Trail, Hopkinton, MA

Skywave Communications, Inc., 51 Goodway Drive, Rochester, NY

Any Covered Vendor awarded a service contract must notify the NOTE: contracting department within three (3) working days of signing a service subcontract with a vendor.

Please print in ink or type all required information. Assistance in IMPORTANT: completing this form may be obtained by calling the Living Wage Administrator, the Living Wage Division of the Office of Workforce Development, telephone: (617) 918-5236, or your contracting department.

Part 5: The following statement must be completed and signed by an authorized owner, officer or manager of the Covered Vendor. The signature of an attorney representing the Covered Vendor is **not** sufficient:

Joseph H. Bodio (authorized representative of the Covered Vendor) on behalf of <u>LAN-TEL</u> Communications, Inc. (name of Covered Vendor) hereby state that the above-named, Covered Vendor is committed to pay all Covered Employees not less than the Living Wage, subject to adjustment each July 1, and to comply with the provisions of the Boston Jobs and Living Wage Ordinance.

I swear/affirm that the information which I am providing on behalf of Covered Vendor on this Covered Vendor Agreement is true and within my own personal knowledge. I understand that I am signing under the pains and penalties of perjury.

04/26/2018 Date

Signature

sident/CEO Position with Covered Vendor



# CITY OF BOSTON JOBS AND LIVING WAGE ORDINANCE

THE LIVING WAGE DIVISION • (617) 918-5236

# VENDORS LIVING WAGE AFFIDAVIT

Any for-profit or any not-for-profit vendor who employs at least 25 full-time equivalents (FTEs) who has been awarded a service contract of \$25,000 or more from the City of Boston must comply with the provisions of the Boston Jobs and Living Wage Ordinance which requires any such vendors to pay at least the **living wage which is \$14.82 per hour** to any employee who directly expends his or her time on the services set out in the contract. All subcontractors whose subcontracts are at least \$25,000 are also required to pay the living wage.

If you are bidding on or negotiating a service contract that meets the above criteria, you should submit this affidavit prior to the awarding of the contract. If you believe that you are exempt from the Living Wage Ordinance, complete Section 4: Exemption from Boston Jobs and Living Wage Ordinance, or if you are requesting a general waiver, please complete Section 5: General Waiver Reason(s).

# <u>WARNING</u>: No service contract will be executed until this affidavit is completed, signed and submitted to the contracting department

**IMPORTANT:** Please print in ink or type all required information. Assistance in completing this form may be obtained by calling or visiting the Living Wage Administrator, the Living Wage Division of the Office of Workforce Development, telephone: (617) 918-5236, or your contracting department.

# Part 1: VENDOR INFORMATION:

Name of vendor: LAN-TEL Communications, Inc.			
Contact person: Kate Waldron			
Address 1400 Providence Highway, Suite 3100,	Nor	wood, MA 02062	
Street	I	City	Zip code
Telephone #:	E-Mail:	kwaldron@lan-tel.com	
Part 2: CONTRACT INFORMATION:			
Name of the program or project under which the <u>PsNET Development and Management</u>	e contract	or subcontract is being	awarded:
Contracting City department: Office of Emergency	y Managen	nent	
Start date of contract: 07/01/2018	End date	e of contract: 06/30/2019	9
Length of contract: 🖌 1 year 🗌 2 years 🦳	3 years	Other: (ye	ears)

OFFICE OF WORKFORCE DEVELOPMENT • 43 HAWKINS STREET • BOSTON, MA 02114

### PART 3: ADDITIONAL INFORMATION

Please answer the following questions regarding your company or organization:

1. Your company or organization is: check one:

	For profit	Not	t for profit
2.	Total number of "FTE" employ	ees which you em	ploy: <u>140</u>

- 3. Total number of employees who will be assigned to work on the above-stated contract: 6
- Do you anticipate hiring any additional employees to perform the work of the service contract? 4.

No

Yes

¥	

If yes, how many additional FTEs do you plan to hire?

### PART 4: EXEMPTION FROM BOSTON JOBS AND LIVING WAGE ORDINANCE

Any vendor who qualifies may request an exemption from the provisions of the Boston Jobs and Living Wage Ordinance by completing the following:

I hereby request an exemption from the Boston Jobs and Living Wage Ordinance for the following reason(s): Attach any pertinent documents to this application to prove that you are exempt from the Boston Jobs and Living Wage Ordinance. Please check the appropriate box(es) below:

The construction contract awarded by the City of Boston is subject to the state prevailing wage law; or

Assistance or contracts awarded to youth programs, provided that the contract is for stipends to youth in the program. "Youth Program" means any city, state, or federally funded program which employs youth, as defined by city, state, or federal guidelines, during the summer, or as part of a school to work program, or in other related seasonal or part-time program; or

Assistance or contracts awarded to work-study or cooperative educational programs, provided that the Assistance or contract is for stipends to students in the programs; or

Assistance and contracts awarded to vendors who provide services to the City and are awarded to vendors who provide trainees a stipend or wage as part of a job training program and provides the trainees with additional services, which may include but are not limited to room and board, case management, and job readiness services, and provided further that the trainees do not replace current City-funded positions.

Please give a full statement describing in detail the reasons you are exempt from the Boston Jobs and Living Wage Ordinance (attach additional sheets if necessary):

THIS FORM APPROVED AS TO FORM BY CORPORATION COUNSEL 2 JUNE 2000

# PART 5. GENERAL WAIVER REASON(S)

I hereby request a general waiver from the Boston Jobs and Living Wage Ordinance. The application of the Boston Jobs and Living Wage Ordinance to my contract violates the following state or federal statutory, regulatory or constitututional provisions(s):

State the specific state or federal statutory, regulatory or constitutional provision(s), which makes compliance with the Boston Jobs and Living Wage Ordinance unlawful:

# GENERAL WAIVER ATTACHMENTS:

Please attach a copy of the conflicting statutory, regulatory or constitutional provision(s) that makes compliance with this ordinance unlawful.

Please give a full statement describing in detail the reasons the specific state or federal statutory, regulatory or constitutional provision(s) makes compliance with the Boston Jobs and Living Wage Ordinance unlawful (attach additional sheets if necessary):

# PART 6: VENDOR AFFIDAVIT:

<u>Joseph H. Bodio</u> a principal officer of the covered vendor certify and swear/affirm that the information provided on this **Vendors Living Wage Affidavit** is true and within my own personal knowledge and belief.

Signed under the pains and penalities of perjury.	
SIGNATURE:	DATE: <u>04/26/2018</u>
PRINTED NAME: Joseph H. Bodio	
TITLE: President/CEO	

# CM FORM 16

# WAGE THEFT PREVENTION

The City of Boston has established requirements for City contracts in an effort to prevent wage theft. Prospective vendors must provide the following certifications or disclosures with their bids/proposals. Failure to provide the following shall result in rejection of the bid/proposal.

# **CERTIFICATION**

The undersigned certifies under penalties of perjury that the vendor is in compliance with the provisions of the Executive Order titled "Establishing Requirements for City Contracts in an Effort to Prevent Wage Theft," as currently in effect. <u>All</u> <u>Vendors must certify the following:</u>

- Neither this firm nor any subcontractor has been subject to a federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c149, c151, or the Fair Labor Standards Act within three (3) years prior to the date of this bid/proposal submission.
- This firm, or a subcontractor of this firm, has been subject to a federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c149, c151, or the Fair Labor Standards Act within three (3) years prior to the date of this bid/proposal submission and such documentation is included in the bid/proposal submission.
- 3. Any federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c149, c151, or the Fair Labor Standards Act imposed while any bid/proposal is pending and, if awarded a contract, during the term of the contract, will be reported to the Official within five (5) days of receiving notice.
- 4. Vendors awarded a contract that have disclosed a federal or state criminal or civil judgment, administrative citation, final administrative determination, or order resulting from a violation of G.L. c149, c151, or the Fair Labor Standards Act within three (3) years prior to the date of this bid/proposal, or during the term of the contract and through the contract term shall furnish their monthly certified payrolls to the Official for all employees working on such contract and may be required to obtain a wage bond or other suitable insurance in an amount equal to the aggregate of one year's gross wages for all employees. Vendors subject to a state or

federal debarment for violation of the above laws or prohibited from contracting with the Commonwealth are prohibited from contracting with the City, and upon a finding or order of debarment or prohibition, the City may terminate the contract.

5. Notice provided by the City, informing employees of the protections of the Order and applicable local, state, and federal law will be posted in conspicuous places.

Signature

Joseph H. Bodio (Typed or printed name of person signing quotation, bid or proposal)

LAN-TEL Communications, Inc. \_\_\_\_\_\_(Name of Business)

# Instructions for Completing CM Form 16:

A vendor must check box 1 or box 2 as applicable and must sign this Form, certifying compliance with the requirements set out in this Form. This Form must be included with the bid or proposal, and for multi-year contracts must be completed annually on the contract anniversary.

Pursuant to the above mentioned Executive Order, vendors who have been awarded a contract with the City of Boston must post the Massachusetts Wage and Hour Laws notice informing employees of the protections of G.L. c. 149, c. 151, and the Fair Labor Standards Act in conspicuous places. This notice can be found at:

http://www.mass.gov/ago/docs/workplace/wage/wagehourposter.pdf



# STANDARD CONTRACT DOCUMENT CITY OF BOSTON

# CONTRACT ID: City Department Name: LAN-TEL Communications, Inc. Department Head: (and d/b/a): Department Head: Contractor Address: Mailing Address: 1400 Providence Highway, Suite 3100, Norwood, MA Billing Address (if different): VC6000177274 Billing Address (if different):

ACCOUNT	FUND	DEPT ID	PROGRAM	CLASS	PROJECT	BUD REF FUNCTION		AMOUNT	
								\$	
								\$	
								\$	
								\$	
								\$	

# Contract Details

Description/Scope of Services: (Attach supporting documentation) PsNet Development and Management

Begin Date:
Rate: \$
(Attach details of all rates, units, and charges)

End Date: Not to Exceed Amount: \$

Contract Signatures

AUDITOR	CONTRACTOR	AWARDING AUTHORITY/OFFICIAL			
APPROVED AS TO AVAILABILITY OF APPROPRIATION OR PURSUANT TO ARTICLE 12.2 OF THE GENERAL CONDITIONS	AGREES TO PROVIDE THE GOODS OR SERVICES AS INDICATED IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS.	ATTACH APPROVED LETTER OF AWARD AND OTHER REQUIRED DOCUMENTS.			
IN THE AMOUNT OF	Bus				
	SIGNATURE President/CEO	SIGNATURE 04/30/2018			
SIGNATURE	TITLE	DATE			
04/30/2018	04/30/2018	,			
DATE	DATE				

Approved as to form by Corporation Counsel September 2017 No payment will be made until the executed contract is filed with the Auditing Department

# **CITY OF BOSTON**

# STANDARD CONTRACT GENERAL CONDITIONS

ARTICLE 1 -- DEFINITION OF TERMS:

1.1 The following terms in these Contract Documents shall be construed as follows:

1.1.1 "City" shall mean the City of Boston, Massachusetts.

1.1.2 "Contract" and "Contract Documents" shall include, in the following hierarchy of document precedence, as applicable: the City's Standard Contract Document; these Standard Contract General Conditions; the Invitations for Bids, Requests for Proposals, or other solicitations; the Contractor's responses including Contractor Certifications and Applications, excluding any language stricken by City as unacceptable and including any negotiated statements of work contemplated by the solicitation; and Performance Bonds, which documents are incorporated herein by reference.

1.1.3 "Contractor" shall mean the individual, partnership, corporation or other entity to which this Contract is awarded.

1.1.4 "Official" shall mean the awarding authority/officer acting on behalf of the City in the execution of the Contract.

# ARTICLE 2 -- PERFORMANCE:

2.1 The Contractor shall conform to all determinations and directions, in accordance with provisions of this Contract, of the Official concerning all questions which may arise relating to the performance of services under this Contract.

2.2 The Contractor shall, upon written request of the Official, remove from City premises and replace all individuals in the Contractor's employ whom the Official determines to be disorderly, careless or incompetent or to be employed in violation of the terms of this Contract.

2.3 City is entitled to ownership and possession of all deliverables purchased or developed with Contract funds. All work papers, reports, questionnaires and other written materials prepared or collected by the Contractor in the course of completing the work to be performed under this Contract shall at all times be the exclusive property of the City. The Contractor shall not use such materials for any purposes other than the purpose of this Contract without the prior written consent of the Official. All Contractor proprietary rights shall be detailed in the Contract Documents.
2.4 Prior to beginning performance under this Contract, Contractor must receive a Purchase Order from City.

# ARTICLE 3 -- ACCEPTANCE OF GOODS OR SERVICES:

3.1 Performance under this Contract shall include services rendered, obligations due, costs incurred, goods and deliverables provided and accepted by City. The City shall have a reasonable opportunity to inspect all goods and deliverables, services performed by, and work product of the Contractor, and accept or reject such goods, deliverables, services, or work product.

# ARTICLE 4 -- TIME:

4.1 It is understood and agreed that Contractor's performance shall be timely and meet or exceed industry standards for the performance required.

# ARTICLE 5 --- COMPENSATION:

5.1 The Contractor may, in the absence of a payment schedule, periodically submit to the Official invoices, itemizing goods, services, labor and expenses for which compensation is due and requesting payment for goods received or services rendered by the Contractor during the period covered by the invoice.
5.2 Thereupon the Official shall estimate the value of goods or services accepted by the City in accordance with the specific terms and conditions of a Contract, and City shall pay to the Contractor such amount less sums retained under the provisions of Article 8 of these General Conditions.

5.3 The City shall pay in full and complete compensation for goods received and accepted and services performed and accepted under this Contract in an amount not to exceed the amount shown on the face of this Contract paid in accordance with the rate indicated or in accordance with a prescribed schedule. Acceptance by the Contractor of any payment or partial payment, without any written objection by the Contractor, shall in each instance operate as a release and discharge of the City from all claims, liabilities or other obligations relating to the performance of a Contract.

5.4 In the event that this Contract provides for reimbursement by the City to the Contractor for travel or other expenses, the Contractor shall submit such proposed expenses to the Official for approval prior to the incurrence of such expenses, unless the Contract specifically provides otherwise, and all travel reimbursement shall be consistent with the City's Travel Policies and Procedures.

5.5 The Contractor shall furnish such information, estimate or vouchers relating to the goods or services or to documentation of labor or expenses as may be requested by the Official.

# ARTICLE 6 -- RELATIONSHIP WITH THE CITY

6.1 The Contractor is retained solely for the purposes of and to the extent set forth in this Contract. Contractor's relationship to the City during the term of this Contract shall be that of an independent Contractor. The Contractor shall have no capacity to involve the City in any contract nor to incur any liability on the part of the City. The Contractor, its agents or employees shall not be considered as having the status or pension rights of an employee; provided that the Contractor shall be considered an employee for the purpose of General Laws c. 268A (the Conflict of Interest Law). The City shall not be liable for any personal injury to or death of the Contractor, its agents or employees.

6.2 Unless all the terms and conditions for the delivery or provision of goods or services by the Contractor to the City specified by this Contract are expressly set forth in a writing incorporated herein by reference, such delivery of goods or services shall require written approval of or direction by the Official prior to the incurrence of any liability by the City. The City has no legal obligation to compensate a Contractor for performance that is not requested and is intentionally delivered by a Contractor outside the scope of a Contract.

6.3 All alterations or additions, material or otherwise, to the terms and conditions of this Contract must be in writing and signed by the Official and Contractor and filed with the City Auditor. The City's Standard Contract Document and Standard Contract General Conditions shall supersede any conflicting verbal or written agreements relating to the performance of a Contract, including contract forms, purchase orders, or invoices of the Contractor.
6.4 Forbearance or indulgence in any form or manner by a party shall not be construed as a waiver, nor in any way limit the legal or equitable remedies available to that party. No waiver by either party of any default or breach shall constitute a waiver of any subsequent default or breach.

# ARTICLE 7 -- ASSUMPTION OF LOSS AND LIABILITY:

7.1 The Contractor shall pay and be exclusively responsible for all debts for labor and material contracted for by Contractor for the rental of any appliance or equipment hired by Contractor and/or for any expense incurred on account of services to be performed under this Contract.

7.2 The Contractor shall bear the risk of loss for any Contractor materials used for a Contract and for all goods and deliverables, until possession, ownership and full legal title to the goods and deliverables are transferred to and accepted by the City.

7.3 To the fullest extent permitted by law, the Contractor shall indemnify, hold harmless, and assume the defense of the City, its officers, agents or employees, with coursel acceptable to City, which acceptance shall not be unreasonably withheld, from all liabilities, suits, claims, losses, and costs or any other damages against them or any of them arising from any act or omission of the Contractor, its agents, officers, employees, or subcontractors in any way connected with performance under this Contract.

# ARTICLE 8 -- REMEDIES OF THE CITY:

8.1 If the Contractor provides goods and/or services that do not comply with Contract specifications and requirements as reasonably determined by the Official, the Official may request that the Contractor refurnish services or provide substitute goods at no additional cost to the City until approved by the Official. If the Contractor shall fail to provide satisfactory goods or services, the Official, in the alternative, may make any reasonable purchase or Contract to purchase goods or services in substitution for those due from the Contractor. The City may deduct the cost of any substitute Contract or nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. The City otherwise retains all rights and remedies at law or in equity.

8.2 If the damages sustained by the City as determined by the Official exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand.

8.3 The Contractor shall not be liable for any damages sustained by the City due to the Contractor's failure to furnish goods or services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including but not necessarily limited to a state of war, act of enemies, embargoes, expropriation or labor strike or any unanticipated federal, state, or municipal governmental regulation or order, provided that the Contractor has notified the Official in writing of such cause as soon as practicable.
8.4 The City may terminate this Contract for cause if the Contractor has breached any material term or condition and has not corrected the breach within a reasonable period of time after written notice from the City identifying the breach. This Contract may be terminated at any time for the convenience of the City at the option of the Official by delivering or mailing to the Contractor at the Contractor's business address a written notice of termination for convenience, the Contractor shall be compensated for services rendered to the effective date of said termination in accordance with the rates of compensation specified in this Contract. The parties agree that if City erroneously, improperly or unjustifiably terminates for cause, such termination shall be effective thirty (30) days after such notice of termination for cause is provided.

# ARTICLE 9 -- REMEDIES OF CONTRACTOR:

9.1 If damages, other than loss on nonconforming services or on services not performed, are actually sustained by the Contractor due to any act or material omission for which the City is legally responsible, the City may allow a sum equal to the amount of such damages sustained by the Contractor as determined by the Official in writing, provided the Contractor shall have delivered to the Official a detailed written statement of such damages and cause thereof within thirty (30) days after the act or material omission by the City.

# ARTICLE 10 -- PROHIBITION AGAINST ASSIGNMENT:

10.1 The Contractor shall not assign, delegate, subcontract or in any way transfer any interest in this Contract without prior written consent of the Official.

# ARTICLE 11 -- COMPLIANCE WITH LAWS AND PUBLIC POLICY:

11.1 This Contract is made subject to all laws of the Commonwealth of Massachusetts. If the Contractor is a business, the Contractor certifies that it is listed under the Secretary of State's website as licensed to do business in Massachusetts, as required by law.

11.2 The Contractor shall provide, at its sole expense, all necessary licenses, permits or other authorizations required by the City, the Commonwealth of Massachusetts or any other governmental agency with proper jurisdiction.

11.3 The Contractor shall where applicable take out and maintain during the term of this Contract such Worker's Compensation insurance as may be reasonably necessary to protect the Contractor from claims under General Laws c. 152 (the Worker's Compensation Law). The Contractor shall at all times maintain professional, liability, and other appropriate insurance as required by the solicitation or as otherwise required by City, but in no event less than the amount and type of insurance coverage sufficient to cover the performance.

11.4 The Contractor agrees and shall require any subcontractor to agree not to discriminate in connection with the performance of work under the Contract against any employee or applicant for employment because of sex, race, color, sexual orientation, gender identity or expression, marital status, parental status, ex-offender status, prior psychiatric treatment, military status, religious creed, disability, national origin, ancestry, source of income, or age, unless based upon a legally permissible and bona fide occupational qualification. The Contractor agrees and shall require any subcontractor to agree to post in conspicuous places notices to be provided by the Massachusetts Commission Against Discrimination, setting forth provisions of the Fair Employment Practice Law of the Commonwealth.

11.5 The Contractor's attention is called to General Laws c. 268A (the Conflict of Interest Law). The Contractor shall not act in collusion with any City officer, agent, or employee, nor shall the Contractor make gifts regarding this Contract or any other matter in which the City has a direct and substantial interest.

11.6 The Contractor shall keep himself fully informed of all City Ordinances and Regulations, and State and Federal laws, which in any manner affect the work herein specified. The Contractor shall at all times observe and comply with said ordinances, regulations or laws, and shall defend, hold harmless, and indemnify the City, its officers, agents and employees against any claim or liability arising from or based on the violations of such ordinances, regulations or laws, caused by the negligent actions or omissions of the Contractor, its agents, or employees.

11.7 In furtherance of the Mayor's Executive Order "Minority and Women Business Enterprise Development" dated December 31, 1987 and the Ordinance entitled "Promoting Minority and Women Owned Business Enterprises in the City of Boston" (City of Boston, Chapter IV, Section 4-4), it is understood and agreed by the Contractor, and the Contractor by the execution of this Contract so certifies, as follows: (1) That the Contractor shall actively solicit bids for the subcontracting of goods and services from certified minority and women businesses; (2) That in reviewing substantially equal proposals the Contractor shall give additional consideration to the award of subcontracts to certified minority and women bidders.

11.8 The Contractor certifies that neither it nor any of its subcontractors are currently debarred or suspended by the U.S. government, the Commonwealth of Massachusetts, or any of its subdivisions.

11.9 The Contractor certifies that neither it nor any of its subcontractors have been subject to a federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c149, c151, or the Fair Labor Standards Act within three (3) years prior to the date of the Contract, or certifies that it has provided copies of any and all of the above to the Official prior to the date of the Contract and

any required wage bond or insurance; and certifies that while the Contract is in effect, it will report any instance of the above to the Official within five (5) days of Contractor's receipt. The Contractor agrees and shall require any subcontractor to post in conspicuous places notices to be provided by the City, informing employees of the protections of applicable local, state, and federal law.

11.10 Contractor agrees that they shall comply fully with all state and federal laws and regulations regarding human trafficking and forced labor. Failure to do so will be considered a breach of this Contract.

11.11 If applicable, as determined by the Massachusetts Department of Labor Standards, the Contractor shall comply with the Massachusetts Prevailing Wage Law (M.G.L. c. 149, s.26, -27H) for public works projects, which establishes minimum wage rates for workers on such projects. The Contractor shall comply and shall cause its subcontractors to comply with M.G.L. c. 149, s. 27B, which requires that a true and accurate record be kept of all persons employed on a project for which the prevailing wage rates are required. The Contractor shall, and shall cause its subcontractors to, submit weekly copies of their weekly payroll records to the City, to the extent the Prevailing Wage Law is applicable.

# ARTICLE 12 -- AVAILABLE APPROPRIATION:

12.1 This Contract and payments hereunder are subject to the availability of an appropriation therefor. Any oral or written representations, commitments, or assurances made by the Official or any other City representatives are not binding. Contractors should verify funding prior to beginning performance.
12.2 If the Contract is funded under a grant with the Federal Government, it is being executed without further appropriation pursuant to General Laws c. 44, s.53A.

12.3 When the amount of the City Auditor's certification of available funds is less than the face amount of the Contract, the City shall not be liable for any claims or requests for payment by the Contractor which would cause total claims or payments under this Contract to exceed the amount so certified. 12.4 Unless otherwise expressly provided in a writing incorporated herein by reference, the amount certified by the City Auditor as available funds under this Contract may be increased or decreased by the Official with the written approval of such change by the City Auditor. In the event of any decrease in the amount certified, the Contractor shall be compensated for services rendered to the effective date of such reduction, in accordance with the rates of compensation specified in this Contract.

# ARTICLE 13 -- RELEASE OF CITY ON FINAL PAYMENT:

13.1 Acceptance by the Contractor of payment from the City for final services under this Contract shall be deemed to release forever the City from all claims and liabilities, except those which the Contractor notifies the Official in writing within six (6) months after such payment.

# ARTICLE 14 -- PUBLIC RECORDS AND ACCESS

14.1 The Contractor shall provide full access to records related to performance and compliance to the City for seven (7) years beginning on the first day after the final payment under this Contract or such longer period necessary for the resolution of any litigation, claim, negotiation, audit or other inquiry involving this Contract. Access to view Contractor records related to any breach or allegation of fraud, waste and/or abuse may not be denied and Contractor cannot claim confidentiality or trade secret protections solely for viewing but not retaining documents. Routine Contract performance compliance reports or documents related to any alleged breach or allegation of non-compliance, fraud, waste, abuse or collusion may be provided electronically and shall be provided at Contractor's own expense. Reasonable costs for copies of non-routine Contract related records shall not exceed the rates for public records under 950 C.M.R. 32.00.

# ARTICLE 15 - STATE TAXATION CERTIFICATION:

15.1 Pursuant to M.G.L. c. 62C, s. 49A, the Contractor certifies under penalties of perjury, that to the best of Contractor's knowledge and belief, Contractor has complied with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting of child support. (NOTE: The Taxpayer Identification Number will be furnished to the Massachusetts Department of Revenue to determine compliance with the above-referenced law).

### ARTICLE 16 -- MONIES OWED TO THE CITY:

16.1 Pursuant to M.G.L. c. 60, s. 93, the Contractor agrees that the Collector/Treasurer of the City of Boston may withhold from amounts owing and payable to the Contractor under this Contract any sums owed to any department or agency of the City of Boston which remain wholly or partially unpaid. This shall include but not be limited to unpaid taxes and assessments, police details, and any other fees and charges until such sums owed have been paid in full, and the Collector/Treasurer may apply any amount owing and payable to the Contractor to satisfy any monies owed to the City.

### ARTICLE 17 - BID COLLUSION:

17.1 The Contractor certifies under penalties of perjury that his/her bid or proposal has been made and submitted in good faith and without collusion, fraud, or unfair trade practice with any other person. As used in this article, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals. Any actions to avoid or frustrate fair and open competition are prohibited by law, and shall be grounds for rejection or disqualification of a Response or termination of this Contract.

# ARTICLE 18 -- FORUM AND CHOICE OF LAW:

18.1 Any actions arising out of this Contract shall be governed by the laws of Massachusetts, and shall be brought and maintained in a State or federal court in Boston, Massachusetts which shall have exclusive jurisdiction thereof.

Approved as to form by Corporation Counsel September 2017 LAN-TEL COMMUNICATIONS, INC.

# FINANCIAL STATEMENTS

# AND SUPPLEMENTARY INFORMATION

# YEARS ENDED DECEMBER 31, 2016 AND 2015

LUCA, DEBLASIO & CO., INC.

# CONTENTS

.

<u>Page</u>
-------------

FINANCIAL STATEMENTS:	
Independent Auditor's Report	1
Balance Sheets	2
Statements of Income and Retained Earnings	3
Statements of Cash Flows	4-5
Notes to Financial Statements	6-11
SUPPLEMENTARY INFORMATION:	
Independent Auditor's Report on Supplementary Information	12
Schedules of General and Administrative Expenses	13
Summary of Construction Revenue and Costs	14

# LUCA, DEBLASIO & CO., INC.

# LUCA, DEBLASIO & CO., INC.

CERTIFIED PUBLIC ACCOUNTANTS

I Presidential Way, Suite 103 Woburn, MA 01801 TEL: (MA) 781-933-4114 (RI) 401-751-9700 FAX: (MA) 781-933-8180 (RI) 401-751-2770 www.lucacpa.com

April 30, 2017

# INDEPENDENT AUDITOR'S REPORT

The Board of Directors Lan-Tel Communications, Inc. Norwood, Massachusetts

# **Report on the Financial Statements**

We have audited the accompanying financial statements of Lan-Tel Communications, Inc., which comprise the balance sheets as of December 31, 2016 and 2015 and the related statements of income and retained earnings, and cash flows for the years then ended, and the related notes to the financial statements.

# Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

# Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

# Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Lan-Tel Communications, Inc., as of December 31, 2016 and 2015, and the results of their operations and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

LUCA DOSUSIO & Co., INC.

# LAN-TEL COMMUNICATIONS, INC.

# BALANCE SHEETS

# ASSETS

	December 31,			
	2016		2015	
CURRENT ASSETS:		<u> </u>		
Cash	\$	39,025	\$	26,622
Accounts receivable, less allowance for doubtful		6 703 345		9 362 049
Retainage receivable		725.208		1.377.476
Costs and estimated earnings in excess of billings		· • • • - •		
on uncompleted contracts		2,042,286		2,815,305
Prepaid expenses		63,141		55,086
TOTAL CURRENT ASSETS		9,573,005	1	3,636,538
PROPERTY AND EQUIPMENT (NET)		572,796		396,094
OTHER ASSETS:				
Deposits		5,000		6,257
Goodwill, net		6,489	·	7,522
		11,489		13,779
	\$	10,157,290	\$1	4,046,411
LIABILITIES AND STOCKHOLDERS' EQ	UIT	Y		
Lines of credit	\$	2,459,623	\$	3,497,088
Current maturities of long term debt	¥	293,890	Ŧ	-
Accounts payable		1,639,317		3,857,804
Accrued expenses		285,565		339,357
Accrued payroll and related taxes		323,861		444,916
Accrued income taxes  Billings in excess of costs and estimated		37,532		49,492
earnings in excess of costs and estimated		513,196		987.064
TOTAL CURRENT LIABILITIES		5,552,984		9,175,721
LONG-TERM DEBT		1,042,893		-
COMMITMENTS				
Common stock, no par value, 15,000 shares authorized,				
1,665 shares issued and outstanding		1,665		1,665
Additional paid-in capital		15,295		15,295
Treasury stock, 665 shares at cost		(2,350,000)		-
Retained earnings		5,894,453		4,853,730
		3,001,413		4,070,090
	\$	10,157,290	\$1	4,046,411

See accompanying independent auditor's report and notes to financial statements.

# LUCA, DEBLASIO & CO., INC.
#### STATEMENTS OF INCOME AND RETAINED EARNINGS

	_Years Ended December 31,	
	2016	2015
REVENUE	\$ 33,434,719	\$ 34,946,926
CONTRACT COSTS	27,589,229	29,633,424
GROSS PROFIT	5,845,490	5,313,502
GENERAL AND ADMINISTRATIVE (schedule)	4,601,357	3,896,874
INCOME FROM OPERATIONS	1,244,133	1,416,628
OTHER INCOME (EXPENSE): Other income Loss on disposition of assets Interest expense, net	45,010 (67,596) (141,565) (164,151)	15,268 (94,703) (79,435)
NET INCOME BEFORE PROVISION FOR INCOME TAXES	1,079,982	1,337,193
PROVISION FOR STATE INCOME TAXES	39,259	53,285
NET INCOME	1,040,723	1,283,908
RETAINED EARNINGS, beginning of year	4,853,730	4,103,155
Shareholder distributions	-	(533,333)
RETAINED EARNINGS, end of year	\$ 5,894,453	\$ 4,853,730

See accompanying independent auditor's report and notes to financial statements.

#### STATEMENTS OF CASH FLOWS

	Years Ended December 31,	
	2016	2015
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	\$ 1,040,723	\$ 1,283,908
Adjustments to reconcile net income to		
net cash from operations:		
Depreciation and amortization	138,747	91,869
Disposition of fixed assets, net of proceeds	67,596	-
Decrease (increase) in accounts receivable	2,658,704	(3,340,761)
Decrease (increase) in retainage receivable	652,268	(362,605)
Decrease in costs and estimated earnings		
in excess of billings on uncompleted contracts	773,019	19,991
(Increase) decrease in prepaid expenses	(8,055)	6,106
Decrease in deposits	1,257	-
(Decrease) increase in accounts payable	(2,218,487)	1,403,994
(Decrease) increase in accrued expenses	(53,792)	70,078
(Decrease) increase in accrued payroll and related taxes	(121,055)	172,216
(Decrease) increase in accrued income taxes	(11,960)	17,329
(Decrease) increase in billings in excess of costs		
and estimated earnings on uncompleted contracts	(473,868)	615,271
NET CASH PROVIDED BY (USED IN) OPERATIONS	2,445,096	(22,604)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchase of fixed assets	(382.011)	(202.221)
NET CASH USED IN INVESTING ACTIVITIES	(382,011)	(202,221)
CASH ELOW/S EROM FINANCING ACTIVITIES		
Redemntion of minority shareholder common stock	(2,350,000)	-
Net horrowings (renavments) on long term deht	1 336 783	(94,158)
Net (renevments) borrowings under line of credit agreement	(1.037.465)	841 245
Shareholder distributions		(533,333)
NET CASH (USED IN) PROVIDED BY FINANCING ACTIVITIES	(2,050,682)	213,754
NET INCREASE (DECREASE) IN CASH	12,403	(11,071)
CASH, beginning of year	26,622	37,693
CASH, end of year	\$ 39,025	\$ 26,622

See accompanying independent auditor's report and notes to financial statements.

#### STATEMENTS OF CASH FLOWS

#### (CONTINUED)

	Years Ended December 31,	
	2016	2015
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Interest	<u>\$ 141,565</u>	\$ 94,703
Income taxes	\$ 52,227	\$ 35,956

#### DISCLOSURE OF ACCOUNTING POLICY:

For purposes of the statement of cash flows, the Company considers all highly liquid debt instruments purchased with a maturity of three months or less to be cash equivalents.

See accompanying independent auditor's report and notes to financial statements.

LUCA, DEBLASIO & CO., INC.

-5-

#### NOTES TO FINANCIAL STATEMENTS

#### A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

#### Nature of Business

The Company was founded in 1991 as a structured cabling company, and has grown over the years into a cabling and technology company offering diversified services and solutions as a provider of voice, data, video and security design, installation and maintenance. The Company is a Massachusetts corporation and is located in Norwood, MA.

#### Revenue and Cost Recognition

Revenues from construction contracts are recognized on the percentage-of-completion method, measured by the percentage of total costs incurred to date to estimated total costs for each contract. Contract costs include all direct material and labor costs and those indirect costs related to contract performance, such as supplies, tools, repairs, insurance and payroll taxes. General and administrative costs are charged to expense as incurred. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are determined. Changes in job performance, job conditions, and estimated profitability, including those arising from contract penalty provisions and final contract settlements may result in revisions to costs and income and are recognized in the period in which the revisions are determined. The asset "Costs and estimated earnings in excess of billings on uncompleted contracts" represents costs incurred plus estimated earnings in excess of billings in excess of costs and estimated earnings on uncompleted contracts" represents billings in excess of revenue recognized.

#### Property and Equipment

The components of property and equipment are recorded at cost and are being depreciated and amortized for financial statement purposes using both straight-line and accelerated methods over the following estimated useful lives:

Machinery and equipment	5	years
Office equipment	5	years
Furniture and fixtures	7	years
Motor vehicles	5	years
Leasehold improvements	39.5	years

For federal income tax purposes property and equipment is being depreciated using accelerated methods of cost recovery over statutory recovery periods. Maintenance and repairs are charged to income as incurred and renewals and betterments are capitalized.

The cost of properties retired or otherwise disposed of and the related accumulated depreciation thereon are eliminated from the asset and related depreciation accounts at the time of retirement or sale, and the resulting gain or loss is included in income.

#### Advertising

Advertising and marketing expenditures are expensed as incurred. For the years ended December 31, 2016 and 2015, advertising expense was \$61,706 and \$36,584, respectively.

See accompanying independent auditor's report.

-6-

#### NOTES TO FINANCIAL STATEMENTS

#### A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED):

#### Income Taxes

The Company elected S corporation status effective January 1, 2013 (Note F). Earnings and losses after that date are included in the personal tax returns of the stockholders. The shareholders may make substantial capital withdrawals in April of each year to pay their personal income tax liabilities. For the years ended December 31, 2016 and 2015, a provision for Massachusetts income taxes imposed on S-Corporations with income and sales over \$6 million is included in the financial statements

#### Uncertainty in Income Taxes

The Financial Accounting Standards Board (FASB) has issued Interpretation No. 48, Accounting for Uncertainty in Income Taxes (FIN 48). FIN 48 clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements in accordance with FASB Statement No. 109, Accounting for Income Taxes. FIN 48 is effective for fiscal years beginning after December 15, 2008, and is applicable to pass-through entities such as Subchapter S corporations, partnerships and LLC entities. As of December 31, 2016, the Company determined that it had no tax positions that did not meet the "more likely than not" threshold of being sustained by the applicable tax authority.

#### Allowance for Doubtful Accounts

The Company uses the allowance method of accounting for bad debts, based on historical experience and management's evaluation of outstanding accounts receivable at the end of each period.

#### Concentrations of Credit Risk

The Company maintains its cash in bank deposit accounts which, at times, may exceed federally insured limits. The Company has not experienced any losses in such accounts and believes it is not exposed to any significant credit risk on cash and cash equivalents

#### Fair Value Measurement

The Company has adopted SFAS 157, Fair Value Measurements for financial assets and financial liabilities, as required, effective as of January 1, 2008. The adoption of SFAS 157 dld not have a material impact on the Company's financial statements. In February 2008, the Financial Accounting Standards Board (FASB) issued Staff Position No. 157-2, which amends SFAS 157 to apply to nonfinancial assets and nonfinancial liabilities beginning with the fiscal year subsequent to November 15, 2008.

In accordance with codification topic 820 (ASC 820) the Company reports its qualifying assets and liabilities in accordance with the Fair Value Measurements and Disclosure Standards under U.S. GAAP. Those standards define fair value, establish a framework for measuring fair value and expand disclosures about fair value measurements. This policy establishes a fair value framework that prioritizes the inputs and assumptions used to measure fair value. The three levels of the fair value framework are as follows:

Level 1 – Inputs that reflect unadjusted quoted prices in active markets for identical assets or liabilities at the measurement date Level 2 – Inputs other than quoted prices in active markets that are observable for the asset either directly or indirectly, including inputs in markets that are not considered to be active Level 3 – Inputs are unobservable

See accompanying independent auditor's report.

-7-LUCA, DEBLASIO & CO., INC.

#### NOTES TO FINANCIAL STATEMENTS

#### A. <u>SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED):</u>

A qualifying asset or liability's level within the framework is based upon the lowest level of any input that is significant to the fair value measurement. The Company's qualifying assets or liabilities are recorded at fair value using level 1 inputs.

#### B. PROPERTY AND EQUIPMENT:

Property and equipment consists of the following as of December 31,

2016	2015
\$ 125,792	\$ 121,875
630,435	507,880
154,556	79,231
625,091	521,619
69,450	68,731
1,605,324	1,299,336
1,032,528	903,242
\$ 572,796	\$ 396,094
	2016 \$ 125,792 630,435 154,556 625,091 <u>69,450</u> 1,605,324 1,032,528 \$ 572,796

Depreciation and amortization expense for the years ending December 31, 2016 and 2015 was \$138,747 and \$91,869 respectively.

#### C. LINE OF CREDIT:

The Company has a working capital line of credit with a bank up to the maximum amount of \$6,000,000, or the Borrowing Base, whichever is lesser. "Borrowing Base" shall mean 80% of eligible receivables plus the lesser of 40% of bonded accounts less than 90 days past invoice date plus 40% of non-bonded accounts which are subject to retainage or \$1,500,000. Eligible receivables mean receivables satisfactory to the bank which are outstanding for not more than 90 days after the invoice date excluding bonded and retainage receivables. The line of credit matures December 30, 2017 and is subject to certain covenants as specified in the loan document, including a minimum debt service coverage ratio of 1.2 times. Interest is charged at prime plus .25%, (4.00% at December 31, 2016 and 3.75% at December 31, 2015).

In April, 2015 the Company entered into an additional equipment line of credit agreement with a bank for the purpose of financing equipment purchases. The Company may borrow up to \$300,000 at an interest rate of prime plus .25%, with a minimum rate of 3.75% (4.00% at December 31, 2016 and 3.75% at December 31, 2015). During 2015 the Company refinanced its existing vehicle loans by drawing down on the line, see Note D. The line of credit matures December 30, 2017 and is subject to certain covenants as specified in the loan document, including a minimum debt service coverage ratio of 1.2 times.

Both lines of credit are collateralized by all business assets and are personally guaranteed by the shareholder.

See accompanying independent auditor's report.

#### NOTES TO FINANCIAL STATEMENTS

#### C. LINE OF CREDIT (continued):

The amounts outstanding on the lines of credit as of December 31,

	2016	2015
Working capital line of credit	\$ 2,232,145	\$ 3,329,607
Equipment line of credit	227,478	167,481
	\$ 2,459,623	\$ 3,497,088

#### D. LONG TERM DEBT:

On January 1, 2016 the Company redeemed a minority shareholder's common stock in the amount of \$2,350,000. In March, 2016 \$1,550,000 of the redemption was financed by a bank over a five year term with monthly payments of approximately, \$28,600 including interest at 4.14%. The loan is subject to certain covenants as specified in the loan document. In addition, the loan is collateralized by all business assets and is personally guaranteed by the shareholder. As of December 31, 2016 the balance was \$1,366,783.

Future minimum payments on the loan are as follows:

2017	\$ 293,890	
2018	306,290	
2019	319,213	
2020	332,683	
2021	84,707	
	\$ 1,336,783	

#### E. COMMITMENTS:

The company leases its office and warehouse space in Norwood, MA under a non-cancelable realty lease. In December, 2015 the Company signed a proposal to lease a larger space from the landlord in the same office park. The landlord built out the space according to a mutually agreed plan and the Company relocated to the new space in April, 2016. The new rental payment commenced 2 months after occupancy, in June 2016. The Company leases approximately 14,000 square feet at an initial cost of \$10.50 per square foot which will escalate \$.50 each year. Base rent was \$12,250 and \$9,564 at December 31, 2016 and 2015, respectively. In addition to the base rent, the Company is responsible for its pro-rata share of real estate taxes and building and project operating expenses. The lease is for an initial five years with one option for a five year renewal. In addition, the Company entered into a sublease for office space in Boston, MA which commenced in November, 2016, expires in January, 2019 and can be terminated upon 90 days' notice. The monthly rent is \$800. Rental expense under this lease was \$149,119 and \$110,547 for the years ended December 31, 2016 and 2015, respectively.

The future minimum rental payments are as follows:

2017	\$ 160,100
2018	167,100
2019	165,300
2020	171,500
2021	 87,500
	\$ 751,500

See accompanying independent auditor's report.

-9-

Please visit our web site at http://www.mass.gov/dpl/boards/FA

JOSEPH H BODIO LAN-TEL COMMUNICATIONS INC 1400 PROVICENCE HWY BLDG. 3, SUITE 3100 NORWOOD, MA 02062-5015

.

(FA)

.

Fold, Then Detach Along All Perforations
COMMONWEALTH OF MASSACHUSETTS
DIVISION OF PROFESSIONAL LICENSURE
BOARD OF
ELECTRICIANS
REGISTERED SYSTEM CONTRACTOR
BLDG 3 SLUTE 3100
1631 07/31/2019 115848

.

Fold, Then Detach Along All Perforations COMMONWEALTH OF MASSACHUSETTS BOARD OF ISSUES THE FOLLOWING LICENSE 38¥ REGISTERED SYSTEM TECHNICIAN 1400 BOSTON PROVIDENCE TPKE BLDG 3, STE 3000 NORWOOD, MA 02092-5028 14 2316 D 07/31/2019 280290 SERIAL NUMBER LICENSE NUMBER EXPIRATION DATE



·

.

.

.

Commonwealth of Massachusetts Department of Public Safety

License: SSCO-000841 Security Systems - S-License

JOSEPH H BODIO 1400 PROVIDENCE HWY STE 200 NORWOOD MA 02062



Expiration: 06/03/2018



# NEW YORK STATE MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISE ("MWBE") CERTIFICATION

Empire State Development's Division of Minority and Women's Business Development grants a

# Women Business Enterprise (WBE)

pursuant to New York State Executive Law, Article 15-Ato:

# **Skywave Communications, Inc**

Certification Awarded on: September 21, 2016 Expiration Date: September 15, 2019 File ID#: 60918



Division of Minority and Women's Business Development

A Division of Empire State Development

