

# Proposal for Consulting Services

# for

# Communication System Study and Upgrade

December 4, 2020

**Prepared for:** Richland County, Wisconsin

> Prepared by: Mike Day

**Firm's Name:** True North Consulting Group





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# **TAB 1: Cover Letter**

140 Third Street South, Stillwater, Minnesota 55082 888.650.4580 ● 651.430.2772 ● www.tncg.com

December 4, 2020

Mr. Clinton Langreck, Richland County Administrator Richland County 221 West Seminary Richland Center, WI 53581

Dear Mr. Langreck:

True North Consulting Group, LLC (TNCG) is pleased to provide our proposal in response to Richland County's Request For Proposal for a Communications System Study and Upgrade.

TNCG understands that Richland County seeks a consultant to analyze the County's current communications systems and recommend improvements or eliminate deficiencies.

TNCG is an independent technology consulting firm. We specialize in public sector operations (focus on public safety and IT services), public safety communications studies and radio system interoperability issues, technology, CAD/RMS, E911, consolidated or regional PSAPs, Emergency Operations Centers (EOCs), and affiliated facilities and technology infrastructure design. TNCG has no affiliation with any manufacturer or vendor.

True North Consulting Group's company and contact information are:

# **Company Information**

<u>Name</u>: True North Consulting Group, LLC <u>Address</u>: 140 Third Street South, Stillwater, MN 55082 <u>Telephone Number</u>: (651) 430-2772

#### **Contact Information**

<u>Contact Person</u>: Mike Day, Senior Technology Consultant <u>Address</u>: 1206 North 7<sup>th</sup> Street, Indianola, IA 50125 <u>Telephone Number</u>:(651) 705-1256 <u>Email: mike.day@tncg.com</u>

We have included five copies of our proposal and one electronic copy on a flash drive, as requested.

Please feel free to contact Mike Day if you have any questions regarding this proposal or if he can be of assistance in any other way at (651) 705-1256 or <u>mike.day@tncg.com</u>.

Sincerely,

ony thojnewski

Tony Chojnowski, Chief Operating Officer True North Consulting Group



# **TAB 2: Company Overview**

# **Background Information**



True North Consulting Group (True North) was founded from the Texas Division of Elert & Associates (E&A), a 35-year-old independent technology consulting firm headquartered in Stillwater, MN. True North is based in Texas and has seamlessly continued to maintain E&A-Texas client accounts and to serve most states in the southern part of the country. In 2018, True North Consulting Group and Elert & Associates merged and became one company – True North Consulting Group. True North now includes a consulting staff of 45+ specialists.

Our experienced and knowledgeable teams of professional consultants offer a wide range of services in various markets. Hundreds of clients throughout the United States have trusted our support in their projects to provide unique solutions to their challenges. Our past and ongoing clients' list is extensive and diverse, ranging from schools and businesses to research facilities and entire municipalities.

Public safety has been a focus of TNCG from the beginning, and we have continued to grow our team and expand our expertise in this area. Our consultants have had extensive exposure and experience with all areas of public safety operations, agency administration, services planning, staffing, budgeting, and technology needs.

TNCG's public safety team specializes in wireless public safety communications and interoperability issues, alerting, E911, CAD/RMS, consolidated or regional PSAPs & Emergency Operations Centers (EOCs), and affiliated facilities infrastructure design. Our services encompass several areas, including assessments, planning, design requirements, equipment procurement specifications, system implementation, and acceptance testing.

With True North's vast array of technical expertise, the public safety team always has additional resources that can be relied on to solve any challenging situations. Expertise in the areas of telephone systems, low voltage cabling, computer network design, in-building wireless, broadband wireless, CCTV/security, access control, network security, and video teleconferencing is always available.



# Why True North Consulting Group

Both technical and operational expertise are necessary to accomplish each phase of any project adequately and effectively. One without the other can result in gaps in understanding and missed opportunities. Our blend of technical and public safety practitioner experience within our consultant team ensures that we will look at the project strategically with a full understanding of the desired goals and objectives.

Our experience with other similar projects across the country demonstrates we have a proven track record of supporting our clients in a manner that accomplishes their needs and objectives. This experience provides us with the necessary knowledge and understanding of current systems and technological trends, which will allow us to provide the best advice and recommendations. Our team approach to public safety projects enables all our consultants to participate and understand various sizes and scopes of the most recent equipment implementations. As a team, we invest in attending regional and national conferences and events to get in front of the equipment and manufacturers to expand our knowledge base. Our public safety consulting team members also participate in training events hosted by various major manufacturers, including Motorola, Harris, Alcatel, EF Johnson, and Tait.

TNCG provides every client with custom written report documents intended to meet the client's specific requests and will work to address all concerns before finalizing any report. Although these are customized reports, they are constructed with fundamental building blocks of crucial information understood to be needed through the years of the TNCG consulting experience. With these processes' technical nature, those blocks are generally standard data collection tables quickly identified and understood. Wrapped around the building blocks are our experienced consultants' many observations and insights throughout the project processes.

# **Statement of Objectivity**

True North Consulting Group declares:

- 1. We are an independent technology and public safety consulting firm.
- 2. We sell no hardware or software or any tangible products, including but not limited to networking devices, wireless equipment, security systems, telecommunications equipment, cabling, multimedia displays, or projection systems/devices.
- 3. We are not aligned with any manufacturers of the above-listed products or any products.
- 4. We are not aligned with any vendors, distributors, or representative firms who sell, market, install program, subcontract work for the above-listed products, or any products or services.
- 5. We are paid only on a fee basis by our clients for whom we are contractually committed to providing independent consulting and design engineering services.
- 6. We receive no commissions, salaries, or payoffs of any kind from any business entity for services performed on behalf of our clients.



# Methodologies TNCG will Employ for this Project

To help ensure project success, True North Consulting Group follows standard project management practices as promulgated by the Project Management Institute (PMI). Key activities and processes within a public safety project will include:

- Communications gathering and disseminating project information
- Adequate scheduling processes identifying activities, establishing logical relationships, estimating durations, and determining critical path activities
- Project team roles defining the project manager/project sponsor/functional manager/team member roles and responsibilities and understanding the impact of different organizational structures
- Procurement supporting the procurement process; understanding and managing its impact on completing projects successfully
- Risk management identifying potential risk factors and developing response strategies and risk control techniques
- Scope control understanding the need to establish variance and change thresholds for scope, time, and cost control (controlling scope creep)
- Budget and estimating applying sound evaluating methodologies and budgeting practices
- Focus on quality distinguishing and use quality planning, assurance, and control methods

Our public safety consulting team members have received training in various related areas from many major manufacturers, including Motorola, Harris, Alcatel, EF Johnson, and Tait.

# **Areas of Public Safety Expertise**

- VHF/UHF/700 & 800 MHZ Radio
- APCO P25 Conventional Systems
- Shared Radio Systems
- P25 Digital Trunked Radio Systems
- Mobile Data (Broadband Wireless) Systems
- Land Based & Wireless Automated
- Fire Station Alerting and Control Systems
- Paging & Siren Control Systems

- Network Communications
- Digital Microwave Systems
- MPLS Networks
- Redundant Strategies & Backup Systems
- SAFECOM and NFPA Standards
- Dispatch Center & EOC
- PSAP's and Radio Systems
- CAD/RMS Systems
- Project Management



# Voice Radio Systems

The technology of the public safety two-way radio system took an exciting turn to standards with the advent of the APCO standard. As the standard has evolved, the various manufacturers have finally determined the best way for their designs is to follow and support APCO Project 25. Systems have even migrated from the Phase 1 specifications, and quickly it is becoming the standard to implement most systems into the bandwidth-friendly Phase 2 specification. The choice of which solution works best can be driven by the chosen frequency band and a system choice of conventional vs. trunked operations. This P25 specification means the possibilities of fleet radios being interchangeable between manufacturers, though proprietary vendor designed services of unique features need to be considered.

Not completely left behind, analog radio can still serve the needs of many agencies in daily operations and interoperability solutions. With any solution, reaching higher performance levels must be every public safety agency's goal and assuring communications in those critical moments of need. A robust, well-designed network built with the reliability and support needed to keep it operational is the answer to all users.

### **Alerting Control Systems**

Getting the first responder started towards the event in need is the job of every sound alerting control system. This once meant sending out a simple encoded paging call on the voice radio to the local volunteer Fire and EMS, which continues to be a need for many departments. Alerting has seen its share of new opportunities as well, and decisions on how to best effectively deliver that first alert that is needed. TNCG consultants have been involved in various paging and siren control system designs, both analog and digital, using either voice or message delivery services. If properly planned, this need can be met using the same infrastructure as needed for the public safety radio system. Sometimes, it makes more sense to place a separate system to do the job more effectively.

#### **Redundant Strategies and Backup Systems**

Once the basic system design is completed, every system design must have a review to determine its weak points and then determine how best to improve the chances of survival during a failure. This review needs to start with the shelter and environmental systems and then move through the antenna systems, repeaters, controllers, and supporting network systems. The goal, of course, is attempting to meet the five 9's of reliability. Two areas that do not typically receive enough attention are grounding technology and the power system design. TNCG is ready to develop the necessary strategies for redundancy and backup systems. The concepts will be thoroughly discussed during the design phase, with options explored.

#### **Digital Microwave Systems**

Radio system site connectivity is always an important design consideration. Microwave links are a preferred solution for many systems. In addition to past microwave projects, TNCG staff are currently engaged in multiple public safety microwave system enhancement projects. Our consulting engineers regularly attend seminars hosted by the major microwave manufacturers and come away with a detailed understanding of the industry's latest trends and developments. This knowledge is key to developing system designs that can support the need for the latest technology, including the integration of MPLS routing in the core of the network.



# **Network Communications & MPLS Networks**

Interconnection of radio facilities can be accomplished with other radio channels, microwave, leased circuits, or fiber optics. Even the supporting microwave system has become an IP platform, and no longer is TDM-based. A critical device in this system has become an MPLS router, and its integration is key to the way bandwidth and Quality of Service are offered to the radio systems. This MPLS router can also serve to provide secure radio services over the same network, which was unheard of in the past. This is extremely important for mobile data transport and other applications such as video.

#### **Dispatch Center and EOC Experience**

TNCG has provided several previous clients with consulting services to support their consideration of combined public safety dispatching models and planning for new dispatch centers. Our projects have included conducting a feasibility study for a consolidated dispatch center, including staffing study, dispatch center design, communications interoperability radio system planning, and associated cost estimates. TNCG carefully follows FEMA guidelines and NFPA standards related to these facilities.

#### 911 Dispatch Operation Systems

TNCG has been designing administrative and emergency telephone systems for cities and counties for over 30 years. Our experience in supporting city and county governments in this area was one of our core areas of competence right from the beginning. Today's 911 center is quickly evolving into something much more significant than those original telephone systems and has taken on the network design, much like the P25 trunked radio system. These systems look to consolidate models into a robust software architecture running on a single core network.

#### **Rationale for Methodology**

The completion of numerous successful projects has honed the methodology utilized by True North Consulting Group. As the consultant for this project, TNCG will collect needed information about the Client's needs while also providing technical information and understanding to the Client's staff such that a knowledge transfer occurs. The intent is to ensure the team making the final decisions to understand all the issues, options, and budgetary considerations.

TNCG believes a successful project is one that:

- When completed, meets the client's goals and objectives
- Is completed on schedule and within budget
- Communicates project progress to keep participants informed and engaged
- Engages the critical project participants in the project, thus building project ownership that results in successful completion and long-term cooperation
- Avoids common pitfalls through careful planning and implementation
- Manages the unique dynamics of an organization, addressing the needs and concerns of all stakeholders, reaching out to inform and to gather input from participants to ensure that they are heard and understood
- Is open to unique and creative solutions to meet client needs best



# **Statement of Independence**

True North Consulting Group has built its reputation on vendor neutrality and goes out of its way to make valid comparisons in an impartial way for all projects. It is our belief the client should be shown the greatest detail of possible solutions to allow the identified team to make the determination which technology works best to meet the defined goals. TNCG is not in any way affiliated with any product vendors.

TNCG discloses that its consultants attend many vendor-hosted training and information sessions each year. Most of these sessions are open to numerous consultants, vendor representatives, and vendor clients. Online portfolio-specific sessions are also provided at various times by vendors either in a group or one-on-one.

All the vendor-provided training is accepted and attended by TNCG without any stipulations or requested agreements of responsibility on our behalf. They serve the purpose of informing TNCG's consultants of company trends and product capabilities. Any specific system design discussions with vendors are kept generic.

# **Certifications & Professional Affiliations**

- AICP American Institute of Certified Planners
- APCO Association of Public-Safety Communications Officials
- ASIS American Society for Industrial Security
- BICSI Building Industry Construction Services International
- CBCP Certified Business Continuity Planner
- CHS-III Certified Homeland Security Professional
- CPTED Crime Prevention Through Environmental Design Certification
- CTS-D Certified Technology Specialist Design
- EE Electrical Engineer
- FCC General Class Radiotelephone License
- FEMA Federal Emergency Management Agency
- ♦ IEEE Institute of Electrical & Electronic Engineers. Senior Member
- LEED AP Leadership in Energy and Environmental Design, Accredited Professional
- 911 ENP Emergency Number Professional
- PMP Project Management Professional
- PSP Physical Security Professional
- RCDD Registered Communications Distribution Designer



# TAB 3: Team

True North's team of public safety consultants has over 100 combined years of experience in designing and implementing land mobile radio systems. Our expertise comes from hands-on design, acquisition, and implementation of all aspects of a modern public safety network. Our public safety consulting team members also dedicate time to attending numerous training opportunities every year from many major manufacturers and keeping up to date on industry guidelines and practices.

Our supported public safety projects can cover all phases of analysis, design, testing, implementation, and contract administration on both large and small-scale systems. Other projects take unique customized processes creating a customized fit to the client's needs. Projects are always conducted using a team approach of discussion, support, and review by the TNCG public safety group. Our team approach also gives the public safety group access, when needed, to the greater technology consultant resources at True North.

Leading this project would be Mike Day, who has managed numerous public safety projects and has over 30 years in the two-way radio market. As the lead, Mike will serve to organize project processes and be the key to understanding project timelines, communication exchanges, and assuring work completion. Peter Behnke and John Thompson would provide the crucial additional team support completing client discussions and equipment analysis. Peter and John bring a wealth of public safety background in varying areas and will be used strategically to best support the project. The team will work to complete the tasks identified in the project scope and detail the information needed to provide the County with a complete understanding of planning decisions.

Dave Kaun, as Executive Consultant, provides a lifetime of public safety experience and consulting knowledge. Dave will support the work of the entire project team and recommend project processes as identified or needed.





# **Areas of Expertise**

### Mike Day – Principal Consultant and Project Manager

Mike Day has returned to True North as a senior public safety consultant after working for the firm in the 1990s. Mike's experience includes over 25-plus years as a radio systems contractor supporting numerous public safety and commercial client needs. Working in all commercial radio industry areas, he has the system-level knowledge and implementation experience to understand what it takes to create quality solutions. He has worked in the two-way radio industry in one aspect or another since entering the military after high school. Mike worked in the Des Moines area for various vendor shops, first as a systems technician, service manager, and then to general manager. His background also includes extensive knowledge and support of trunked radio systems, P25 network design and support, and digital mobile radio (DMR) systems. Working with both systems and subscriber equipment support, Mike brings a unique understanding of what the end-user is looking to have in a useful radio configuration and the needed reliable support structure.

### Peter Behnke – Public Safety Systems Consultant

Peter Behnke is a Senior Consultant and Emergency Number Professional with experience in all areas of 9-1-1 center operations. Peter's 34-year career has included both public sector experience, including managing a 9-1-1 center and private sector experience, including training and project management roles with 9-1-1 technology companies. During his time in the public sector, Peter experienced operations at PSAPs, large and small. In addition, he worked through both consolidation and deconsolidation of a 9-1-1 dispatch center. Training experience includes serving as an adjunct instructor for the APCO Institute and leading a regional training program at Capital Area Council of Governments (CAPCOG) Emergency Communications Division. He served for three years as Assistant Director. While at CAPCOG, Peter also served as the project manager for implementing a ten-county emergency notification system and provided direct oversight and coordination for the construction of a 90-position back-up PSAP.

# John Thompson – Public Safety Systems Consultant

John Thompson is a senior public safety consultant with significant public safety radio system design and implementation experience. He has worked previously as a systems design engineer and engineering manager with a major public safety radio system provider (EF Johnson). As a consulting engineer, John has supported numerous projects and dozens of counties and cities as they worked to develop short-and long-range plans for enhancing public safety radio communications and regional interoperability. John has been with TNCG for ten-plus years and works both out of his home office and the Stillwater corporate office. John's latest public safety design and project management efforts include support for four different 800 MHz trunked radio system implementations by Harris and Motorola plus a conventional analog simulcast system in Western Wisconsin.

#### Dave Kaun – Public Safety Systems Consultant

Dave is True North's Chief Technology Officer with 40 years in communications technology systems. He joined E&A in 1996, after an accomplished career with the State of Wisconsin, where his last position was Director of Telecommunication and Networking for UW-Stout, one of the 26 UW campuses. His background includes television broadcasting, telecommunications, network design, ITV, distance learning, video conferencing, broadband wireless systems, and public safety communications. Dave maintains his knowledge of the latest technologies, including wireless, multimedia, fiber optics, networking, VoIP, cellular/radio communications, business continuity, public safety, and project management. Dave holds licenses from the Federal Communications Commission (FCC) and is a senior member of the IEEE. Dave's recent and current projects are focused on Public Safety and interoperable communications systems.



# **Other Resources**

This project team also has vast technical expertise within TNCG. If needed, this expertise can be used to better understand or answer a technical question outside the typical radio project areas. The TNCG team has specialized networking, security, fiber optics, access control, and multimedia expertise.

# **Point of Contact**

True North Consulting Group always operates in a backup leadership model with a team approach. Like many companies today, some of our consultants work from their home office, and all are interconnected by an extensive IP wide area network, telephone system, and redundant servers. Mike Day will be assigned as the principal in charge of this project. Mike works out of the Stillwater, Minnesota office though he lives in central Iowa and works from his home office location.

#### **Contact Information**

<u>Company Name</u> : <u>Address</u> : <u>Telephone Number</u> :	True North Consulting Group 140 Third Street South, Stillwater, MN 55082 (651) 430-2772
Contact Person:	Mike Day, Senior Technology Consultant
<u>Address</u> :	1206 North 7 <sup>th</sup> Street, Indianola, IA 50125
<u>Telephone Number</u> :	(651) 705-1256
<u>Email</u> :	mike.day@tncg.com

#### Resumes

Please see the project team resumes on the following pages.

# Mike Day Public Safety Consultant





Education DeVry Institute, Irving, Texas

AASE Diploma

#### Areas of Expertise

- Large two-way radio systems support, including design recommendations and implementations and optimizations.
- General management of public safety radio system support company including all field technicians.
- Complete system experience and support for 911 dispatch communications centers.
- Distributed antenna system network design, implementation, and optimization of both, small and large scale, building projects.
- Implementation and optimization of analog and digital trunked radio systems and networks.

#### **Training and Certifications**

- Experienced in technical system solutions design, installation, and optimization.
- Completed FEMA ICS 100, 200, 700 and 800
- Electronics Technician Association (ETA) certifications.
- Extensive classroom and online Motorola equipment training.
- Completed Motorola R56 training and ETA certification.

#### Significant Projects

#### Dubuque County, Iowa

Provided technology consulting services for a radio system including 7-Site Simulcast LMR.

#### Green County, Wisconsin

Provided technology consulting services for a Radio Systems Upgrade assessment and recommendation study.

#### Benton County, Iowa

Provided technology consulting services for a Radio Systems Upgrade assessment and recommendation study followed by supporting direct acquisition process.

#### Black Hawk County, Iowa

Provided technology consulting services for an 800 MHz Trunked Radio System including 7-Site Simulcast with 11 channels.

#### Washington County, Iowa

Provided technology consulting services for a Radio Systems Upgrade assessment and recommendation study followed by development of an RFP.

#### Sheboygan County, Wisconsin

Provided technology consulting services for an 800 MHz P25 Trunked Radio System including 7-Site Simulcast LMR.

#### **Experience**

- 2018 Present True North Consulting Group
  - Senior Technology Consultant
- 2016 2018 Elert & Associates
- Public Safety Consultant
- 2014 2016 Electronic Engineering Co
  - Field Service Technician
- 1998 2014 ILLOWA Communications
  - General/Service Manager
- 1996 1998 Elert & Associates
  - Public Safety Consultant
- 1994 1996 ILLOWA Communications
  - Service Technician
- 1990 1994 Electronic Engineering Co
  - Bench Service Technician
- 1989 1990 Motorola, Inc
  - Pager Technician
- 1983 1987 U.S. Army
  - Aircraft Avionics Technician

# Peter Behnke, MBA, ENP Senior Technology Consultant





### **Education**

Columbia Southern University

• MS – Emergency Services Management Columbia Southern University

- MBA Project Management Emphasis Columbia Southern University
- Bachelor of Science Criminal Justice Administration

# Areas of Expertise

- CAD/RMS Systems
- 9-1-1 Center Operations
- National Level Sales & Marketing
- Technology Use and Implementation
- 9-1-1 Center Consolidation
- Training
- 800 MHz Radio System Implementation

# **Certifications/Training**

- Center Manager Certification Program (CMCP) – NENA
- Emergency Number Professional (ENP) NENA
- Advanced Professional Series FEMA
- Courses in Emergency Management and Project Management

#### **Civic / Volunteer Service**

- Director of Security Deltona Alliance Church
- Technical Advisory Board National Emergency Number Association
- PSAP Service Capability Rating Scale Revision Workgroup – APCO International
- Firearm Safety Instructor / Merit Badge Counselor – Boy Scouts of America
- Volunteer Docent Deltona Veteran's Museum
- Secretary ASIS Orlando Chapter

#### Significant Projects

# **Capital Area Council of Governments**

Provided Project Management for a ten-county emergency notification system including RFP development, vendor selection, deployment, and training.

### **Capital Area Council of Governments**

Provided project management for a ninety position, regional backup 9-1-1 center supporting the ten-county greater Austin, TX region.

#### **Rutgers University**

Provided project management for a complete 9-1-1 upgrade to NG9-1-1 CPE including replacement of all back-room equipment and console workstations.

#### Wright County, MN

After a comprehensive assessment, developed an RFP for Computer Aided Dispatch system. Served as project manager for county-wide implementation through go-live.

### Mall of America, MN

Provided training, configuration, and project management services with Computer Aided Dispatch.

### Rosebud Sioux Tribe, Rosebud SD

Provided training, project management services for full upgrade to Computer Aided Dispatch, Records Management and Jail Management Systems.

#### Deltona, FL

Worked as a 9-1-1 operator and division commander. Provided management, training, administration in planning, staffing, and opening an Emergency Operations Center to operational status. Including Computer Aided Dispatch, EMD and E9-1-1.

# Experience

2019 – Present True North Consulting Group

- Senior Technology Consultant
- 2017 2019 Capital Area Council of Governments
  - Assistant Director of Emergency Communications Administration
- 2016 2016 Carousel Industries
  - Project Manager
- 2015 2016 Civica CMI
  - Account Executive
- 2012 2014 Elert & Associates
  - Public Safety & Security Consultant
- 2001 2012 CISCO Public Safety Software / Global Software
  - Adjunct Instructor for Fire / EMS Emergency Telecommunications
- 1987 2001 City of Deltona, Florida
  - 9-1-1 Communications Division Commander

# John Thompson Public Safety Consultant





#### **Education**

University of St. Thomas, St. Paul, MN

Marketing Management Degree
 Program

Capitol Radio Engineering Institute, Washington, D.C.

General Electronics Engineering
 Course

Austin Community/Technical College, Austin, MN

Liberal Arts and Electronics Courses

#### Areas of Expertise

- Public Safety Communication Systems
- RFP Development
- RF Engineering
- RF Trunking Systems
- RF Telemetry Systems
- Project Management

#### **Training and Certifications**

- FEMA ISC 100, 200, 700
- Aviat Microwave Training
- Cisco Certified Network Associate
  (CCNA)
- FCC General Radiotelephone License
- FCC Extra Class Amateur Radio License
- APCO

#### **Significant Projects**

#### Lincoln, Nebraska

Provided technology consulting services for an 800 MHz Phase 2 P25 trunking system including 3-Site Simulcast and 3 Dispatch Centers.

#### **Dubuque County, Iowa**

Provided a Radio System Assessment and project management including developing options for an 800 MHz land mobile radio (LMR) upgrade.

#### Walworth County, Wisconsin

Provided technology consulting services for a Radio Systems Upgrade assessment and recommendation study.

#### Mahaska County, Iowa

Provided technology consulting services for a Radio Systems Upgrade assessment and recommendation study followed by development of an RFP.

#### Black Hawk County, Iowa

Provided technology consulting services for an 800 MHz trunked radio system including 7-Site Simulcast with 11 Channels following a complete and comprehensive assessment study.

#### Monroe County, Iowa

Provided technology consulting services for VHF Multi-channel Conventional radio system with 7-Site Analog Simulcast System.

#### Sheboygan County, Wisconsin

Provided technology consulting services for an 800 MHz P25 trunked radio system including 7-Site Simulcast LMR.

#### La Crosse, Wisconsin

Provided technology consulting services for an 800 MHz P25 trunked radio system with 3-Site Simulcast LMR.

#### Linn County and Cedar Rapids, Iowa

Provided technology consulting services for an 800 MHz P25 trunked radio system including 6-Site Simulcast with 3 Dispatch Centers.

#### Experience

- 2018 Present True North Consulting Group
  - Technology Consultant
- 2005 2018 Elert & Associates
- Public Safety Systems Consultant
- 2002 2004 NextNet Wireless Inc.
  - Director, International Sales
- 1997 2002 Dataradio COR Ltd.
  - 2001-2002 Manager, Marketing
  - 1997-2001 Senior Product Manager
- 1996 1997 Sprint PCS
  - Senior RF Engineer
- 1995 1996 Self-Employed Telecom Consultant

# Dave Kaun Executive Consultant





**Education** 

University of Wisconsin

- Master of Science, Management Technology
- Bachelor of Science, Industrial Technology – Electronics, Magna Cum Laude

Milwaukee Area Technical College

 Associate of Science, Electrical Technology – Communications

Madison Area Technical College

Associate of Science, Electronics
 Technology

# Areas of Expertise

- Planning, Design and Implementation Management
- Public Safety Radio
- Microwave
- Video and Data
- Wireless Broadband
- Fiber Optics
- Land Mobile Radio Systems
- Network Integration
- EOC/Conference Room Design
- Strategic & Long-Range Planning
- Technology Presentations
- Project Management

# Training and Certifications

- FEMA ICS 100, 200, 300, 700, 800
- EADS Radio Communications Training
- Motorola Radio Communications Systems
  Training
- Harris RAPTR & Digital Radio/Network Training
- Harris Microwave Systems Training
- Fundamentals of Cellular & PCS Communications

#### Significant Projects

#### Quad Cities, Iowa

Provided technology consulting services and project management for a radio upgrade project including 20-site simulcast trunking system.

# Lincoln, Nebraska

Provided technology consulting services and project management for an 800 MHz Phase 2 P25 trunking system including 3-Site Simulcast with 3 PSAPs & Emergency Operations Center.

### Black Hawk County, Iowa

Provided technology consulting services and project management for an 800 MHz trunked radio system including 7-Site Simulcast with 11 Channels.

### Sheboygan County, Wisconsin

Provided technology consulting services for an 800 MHz P25 trunked radio system with 7-Site Simulcast LMR.

# Minot, North Dakota

Provided technology consulting and design services, as well as project management for the Wireless Metropolitan Area Network (WMAN) including the Wireless Data System for SCADA.

### La Crosse, Wisconsin

Provided technology consulting services and project management for an 800 MHz P25 trunked radio system with 3 Site Simulcast LMR.

#### Linn County and Cedar Rapids, Iowa

Provided technology consulting services and extensive project management for an 800 MHz P25 trunked radio system including 6-Site Simulcast with 3 PSAPs & Emergency Operations Center

#### Germantown, Tennessee

Provided technology consulting services for an 800 MHz P25 LMR with 2-Site Simulcast Conventional to be later upgraded to trunking.

# **Experience**

- 2018 Present True North Consulting Group
  - Senior Technology Consultant
- 1995 2018 Elert & Associates
  - Chief Technology Officer
- 1988 1995University of Wisconsin Stout
- Director, Telecommunications and Networking
- 1975 1988 University of Wisconsin Stout
  - Teleproduction Center Chief Engineer
- 1973 1974 WMVS/WMVT-TV, Channel 10/36
  - Television Technician

1969 – 1973 US Navy – Electronics/Radar Systems

#### **Memberships**

- Institute of Electrical and Electronic Engineers (Senior Member)
- FCC Radiotelephone License
- APCO



# **TAB 4: Project Approach**

# Scope of Work

True North Consulting Group has developed the following range of services for consideration by Richland County detailing a standard assessment study (Phase 1) project. With this scope model, TNCG would complete an assessment and provide a detailed report to Richland County within Phase 1 and then provide the County technical support. At the same time, decision-makers determine the most effective business process to pursue upgrading the County's radio system. When properly completed, an assessment study and report document bring both the County's team and technology consultant to the detailed understanding needed to conduct comprehensive discussions of any replacement options.

Only with this understanding and discussions can any expertly tailored additional phases be provided to meet the County's needs. True North provides a general understanding of the possible scope of services for any other phases to follow a basic model. TNCG would use a Phase 2 project to develop a request for any replacement systems. Phase 3 provides the processes for identifying vendor-specific project options (likely through an open request) completing an agreement to achieve an identified solution. Finally, Phase 4 sees the client through the implementation processes of the project and successful completion.

### Phase 1 – Analysis of Public Safety Radio System

- Our anticipated project plan would begin with a project kick-off meeting. (True North is in full support of remote meeting organization relying on Microsoft Teams.)
  - a. Discuss and establish project highlights, such as contacts and schedules.
  - b. Gather an understanding from the group of the land mobile radio systems installed and presently in use at the County. Identify system changes.
  - c. Review the preliminary discussions and any internal needs assessment that has been conducted.
  - d. Review present radio support systems such as sites, backhaul, dispatch, etc.
  - e. Identify stakeholders and vendors currently supporting the County.
  - f. Identify needed documentation to exchange.
- 2. Review issues related to interoperability within the County and adjacent public safety operations.
- 3. Collect and interpret data relative to frequencies, interference, stakeholders, and governance.
- 4. Compile background information and develop a site visit plan to review and interview identified technical and stakeholders effectively. Schedule site visit.
- 5. Conduct a detailed physical site survey of all existing voice radio system sites to determine needs for upgrades of physical facilities and available space for future use.
  - Base stations

Antennas

- o Transmission lines
- Transmitter combiners
- Receiver multi-couplers
- Dispatch consoles

- Microwave sites connectivity
- Site shelters and tower



- 6. Meet with the present supporting vendor(s) to gain detailed technical information on current system performance and options the vendor recommends.
- 7. Conduct necessary interviews with leadership and user groups to obtain an understanding of the existing system operation and effectiveness and identify future needs.
  - Interoperability Needs
  - Paging operations

- Voice radio operations
- Coverage performance levels
- System shortcomings
- Technology improvements
- 8. Conduct exit discussion with the County contact.
- Develop comprehensive findings document-based on-site visit and collected information and present to the County for review. The County will ensure an accurate account of systems and operational understanding.
- 10. Develop an understanding of the present voice systems, adequacies, and inadequacies. During this process, coverage analysis will also be conducted to validate areas where improvements are needed, including:
  - RF coverage
  - System loading and usage
- Equipment lifecycle and reliability
- RF sites and facilities
- Subscriber terminal features
- System deficiencies
- 11. Provide existing coverage analysis detail generated for review and verification by the County.
- 12. Develop and provide options for improvement of the County systems that all meet the identified objectives and provide the County with a range of understanding implementation considerations. (Options will include anticipated coverage expectations and budgetary estimates to accomplish.)
  - a. Analyze the available frequencies spectrum now in use and possibly for use in the area and review the future capacity needed to support system expansion.
  - b. Review and gain a detailed understanding of the radio console capability and support for IP-based radio repeater technology.
  - c. Consider the possible use of existing radio sites and review other potential sites as appropriate to serve the required coverage area.
  - d. Develop a review of the systems that each of the major manufacturers offers today, how they are the same, and their differences when the report is developed.
  - e. Evaluate the financial structure of system implementation, civil costs, and on-going maintenance and upgrade support over a new system's life cycle.
- 13. Develop a draft report summarizing the technical systems assessment findings, the operational evaluation findings, and the developed options.
  - a. Summary of the technical analysis of the current systems hardware, software, and supporting infrastructure for voice and paging
  - b. Backbone equipment inventory and condition
  - c. Lifecycle and support issues
  - d. Site and facility conditions and issues



- e. Subscriber equipment inventory and status
- f. Summary of findings on available frequency spectrum and recommendations for capacity expansion
- g. Recommendations for prioritization to address the problems and gaps identified through these assessments
- h. Recommendations and alternatives for system/equipment upgrade or replacement needed to address the areas of concern
- 14. Present the draft report findings and identified potential options and recommendations.
  - a. Conceptual design detail for voice radio, paging, interconnect, and site improvements
  - b. System conceptual drawings
  - c. Anticipated coverage using propagation analysis
  - d. Estimated system cost
  - e. The expected timeline for a phased approach
- 15. Assist the team in understanding the communications infrastructure recommendations that interconnect the various radio systems elements, including microwave, fiber optics, and how-to future-proof network technology.
  - a. A discussion of voice radio system options available for consideration
  - b. A discussion of tone/voice vs. digital paging solutions
  - c. A discussion and recommendation regarding analog vs. digital P25 technology
  - d. A discussion of standards-based vs. proprietary solutions and impacts
  - e. A discussion of backhaul requirements
  - f. A discussion of the use of national interop channels for backup and interoperability
  - g. A discussion of the merits of how to best acquire an upgrade specifically addressing options
  - h. Document inputs and feedback from this presentation for incorporation into the report.
- 16. Update and expand report document to address questions and concerns developed with the draft presentation.
- 17. Identify with the County the presentation processes needed to bring the report to a final version and meet defined goals.
- 18. Implement presentation processes to ensure a complete understanding from stakeholders and address feedback and questions.
- 19. After reviewing the final draft report and accepting the "best option," TNCG will finalize the report to meet the needs of the County.
  - a. TNCG will provide the final report document.
  - b. A PowerPoint presentation will be developed, summarizing the selected conceptual design option for TNCG to present the best option.



# Deliverables

TNCG provides every client with a custom-written communications assessment study report to meet the client's specific needs. However, these reports are constructed with fundamental building blocks assuring known information identified through years of experience. With the technical nature of these processes, those blocks are generally standard data collection tables. These tables provide precise locations within the report to identify essential information quickly. Wrapped around the building blocks are the many thoughts and insights identified by our experienced consultants.

Just as diverse as public safety radio systems are from entity to entity, so are the analysis reports needed to detail their setup and operation. Each report created by TNCG is custom built to best feature the information in an appropriate chronology to meet the client's needs. As every technology report assessment would likely incorporate similar reports and/or presentations throughout the project life cycle, they are used at various times when appropriate to convey information effectively.

Documents and presentations used by TNCG during a project are created when the needs to meet client goals are identified, with the final goal of a successful project in mind.

Listed below are a few of the everyday items used by TNCG:

# Notes

Sometimes meeting notes may seem like an insignificant process to most discussions, but when used and reviewed, they can more effectively assure operations are moving in an understood direction and effort is not being wasted on misdefined tasks.

• General System Technology Presentation and Discussion during the initial visit

This discussion would be a short presentation plus a Q&A period to bring all participants up to date on the present state of public safety radio system technology.

• Findings Report Upon Completion of all Fact Gathering

This document will be a report describing the collected information from interviews, surveys, and site visits. This report will become part of the final report and is expected to be verified by the County before the next step.

• Design Options Presented in Report for Consideration

TNCG will develop multiple options for discussion based on the Findings Report, where all input has been summarized and presented. A debate among County Leadership is expected to result in the selection of the best solution to develop as the selected option.

# • Draft Report

The final report will be created as a draft to be presented to leadership for review. Comments will be received, and appropriate modifications made to ensure all requested areas have been fully developed and answers obtained for any leadership questions.

# • Final Report & Presentation

TNCG's report remains in draft form until all questions and input from the County are completed. The written report is finalized when the County provides it as complete, and acceptance is approved.

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# **Project Schedule**

TNCG provides the following Phase 1 timeline model as a baseline understanding of standard processes that are usually developed to meet the County's specific needs. The initial fact-gathering portion and report assembling work generally require about two months to be completed and another 3-4 weeks for the client to review with details and adjustments made to meet any specific needs. A specific schedule is developed based on Richland County's identified goals, timelines, and anticipated presentation meetings in mind during the initial kickoff meeting.

The anticipated March 12<sup>th</sup> meeting date is understood and would line up with True North's findings document presentation timeline to the County. The findings document is a verification step to ensure a complete and accurate understanding of the existing information.

True North is committed to beginning the Richland County project immediately upon completion of any contract agreement, and consultant availability is open for an initial site visit.





# **Assistance from the County**

A successful project can best be achieved by any consultant when an open and honest exchange of information is implemented into the project processes. The County being the client in this relationship, needs to provide guidance and desires to True North Consulting Group assuring needs are met. As TNCG receives those requests, it has the responsibility of guaranteeing questions to get answered and topics get fully understood and addressed while looking out for the technical pitfalls.

TNCG will expect Richland County to assign a project manager/coordinator to work closely with the consultant team throughout the project. This critical contact individual will be consulted to provide input about the County's desires or point us in the right direction to speak with other individuals.

If the County wishes to provide additional contacts or designate areas of responsibility for various connections, the primary project manager needs to be included in the exchange of information.

Following are some of the support tasks needed from the County:

- 1. Correspondence with TNCG on project questions and concerns
- 2. Assistance scheduling necessary project meeting with stakeholders
- 3. Assistance arranging site tours of existing facilities
- 4. Assistance arranging meeting locations throughout the project
- 5. Assembling technical/licensing information of existing systems:
  - Past radio system records
  - Recent dispatch center logs of system technical concerns and history (if they exist)
  - o Any prior system studies that may have an impact on the system upgrade
  - Assist TNCG to gather subscriber equipment types and quantities.



# **TAB 5: Project Experience**

# **Recent Radio System Consulting Projects**

The following table demonstrates many of TNCG's ongoing Public Safety team project experience. Many of these projects began with the assessment phase of the True North team and the development of focused options to consider. Additional phases are tailored to the identified opportunity and supported by our team approach but directed by the designated consultant.

Our team brings these projects to successful completion for delighted clients.

Project/Location	Description	System/Actions	Dates	Consultants
Jackson County IA	County operates on	Phase II – Working to	2019 -	Mike Day PM
VHF Radio System	multiple repeaters with	acquire County design	Present	John Thompson
Assessment/Study all	a single dispatch center.	improvement to State of		
county radio system		lowa 700 MHz P25		
users		system		
Jefferson County WI	County operates on	Phase IV – Currently	2018 -	John Thompson PM
VHF Radio System	multiple repeaters with	entering the contract	Present	Mike Day
Assessment/Study all	a single dispatch center.	administration stage of a		Dave Kaun
county radio system		VHF P25 conventional		
users		system		
Newton County IN	County operates on	Phase I – An initial	2018	Mike Day PM
Radio System	multiple repeaters and	communication study of		John Thompson
Assessment/Study all	the Indiana State radio	the County's systems		
county radio system	system with a single	was completed, and a		
users	dispatch center.	report was developed.		
Benton County IA	County operates on	Phase II – Working to	2018 -	Mike Day PM
VHF Radio System	multiple repeaters with	acquire standalone	Present	John Thompson
Assessment/Study all	a single dispatch center.	paging system and then		Dave Kaun
county radio system		seeking a replacement		
users		radio system in 800 MHz		
Kenosha County WI	County operates a single	Acquired dispatch radio	2019	John Thompson PM
PSAP dispatch center	dispatch center needing	console system from		Mike Day
evaluation	console system upgrade.	County's radio vendor		
Green County WI	County operates on	Phase IV – In the	2017 -	Mike Day PM
VHF Radio System	multiple repeaters with	contract administration	Present	John Thompson
Assessment/Study all	multiple dispatch	stage of a VHF P25		Dave Kaun
county radio system	centers and is	conventional system		
users	considering an upgrade.			
Washington County IA	County operates on	Phase IV – In the	2017 -	Mike Day PM
VHF Radio System	multiple repeaters with	contract administration	Present	John Thompson
Assessment/Study, all	a single dispatch center	stage of a 5-site 800		Dave Kaun
county radio system	and is considering an	MHz P25 trunked system		Pete Gray
users	upgrade.			
Juneau County WI	County operates a multi-	Currently in contract to	2017 -	John Thompson PM
VHF Radio System	site trunked system	provide technical	Present	
WISCOM add-on	integrated with the	assistance in the system		
project revision	WISCOM network.	buildout and cutover		





Project/Location	Description	System/Actions	Dates	Consultants
Walworth County WI VHF Radio System Assessment/Study, all county radio system users	County operates on multiple repeaters with multiple dispatch centers and desired to upgrade.	Assessment/ study completed and presented to County. The next step will be an RFP in 2020.	2017 - Present	John Thompson PM Mike Day Dave Kaun
Quad Cities Area of Iowa and Illinois plus Scott and Rock Island County. Study and now RFP.	The area operates on leased EDACS trunked radio system, multiple dispatch centers. Study complete an RFP on the street.	Completed the study, provided three options ranging in cost from \$14M to \$24M. The system under contract.	2017 - Present	Dave Kaun PM John Thompson Mike Day
Lincoln, NE P25 800 MHz trunking system serving all city and county public safety users	800 MHz, 3 site, 11 channel, Phase 2 P25 trunk system with 1500 radios, dispatch center, and an EOC. Replacing EDACS with ASTRO25	This \$20M project is now in its final stages with construction completion in early 2018 due to dispatch update project timing.	2014 - Present	Dave Kaun PM John Thompson Pete Gray Mike Day
Dubuque County IA 800 MHz EDACS Radio System Assessment/ Study, all county radio system users	County operates on leased EDACS trunked radio system with a single dispatch center and is considering an upgrade.	Completed the study. County decided to build off Black Hawk County RFP and award. A system under construction.	2015 - Present	John Thompson PM Mike Day Dave Kaun
Black Hawk County IA P25 800 MHz trunking system serving all county public safety users replacing EDACS	800 MHz, 5 Site, 7 channel, P25 trunk system supporting over 1000 radios, dispatch center, and an EOC.	~\$9.5M project awarded to RACOM via a full RFP process. Construction underway and at ~70%.	2014 - Present	Dave Kaun PM John Thompson Mike Day
Monroe County WI VHF analog simulcast with paging system upgrade	VHF multichannel simulcast system with 9 sites and 5 channels, one dispatch center.	Final system cost was \$3.1M, awarded to local Motorola dealer. Reused all radios.	2014- 2018	John Thompson PM Dave Kaun



# **TAB 6: References**

# Reference No. 1

Client's name: Green County, Wisconsin

Address: 2827 Sixth Street, Monroe, WI 53566

Point of contact: Mr. Tom Moczynski, Chief Deputy, (608) 328-9400, tmoczynskit@greensheriff.com

<u>Description of services provided</u>: Green County, Wisconsin, retained the services of True North Consulting Group (TNCG) to conduct a detailed public safety radio system study for the County. The completed report document of the existing multi-site voted receive VHF radio system identified a lack of talkout coverage and provided various options. The study focused on the existing VHF voice radio system and separate paging simulcast system using a common transmit site and multiple voted receive sites. TNCG worked to identify the County's tower site investments' characteristics and provide new understandings of the county's numerous PSAP operations. The County pursued upgrade options using a Request For Proposal (RFP) document process and identified a vendor solution with Baycom (Motorola). Currently, the project is working through the civil (tower) support processes and plans for implementation in 2021.

Time period of the project or contract: 2017 – current client

### Reference No. 2

Client's name: Walworth County, Wisconsin

Address: 1770 County Road NN, Elkhorn, WI 53121

Point of contact: Lt. Todd Neumann, Dispatch Supervisor, (262) 741-4680, tneumann@co.walworth.wi.us

<u>Description of services provided</u>: Walworth County retained True North Consulting Group (TNCG) in an open request for three project phases (system study, RFP development, and procurement) to update their public safety radio systems. Upon completion of the study of the County's various disparate agency system operating in numerous frequency bands, the County chose to move forward with a 700/800 MHz countywide design. The County also needed a pause as budgetary processes and plans were set in motion to follow a designed process in the acquisition. The County is currently finalizing the RFP document for release, completing Phase 2, and working on completing the acquisition process in the first half of 2021. Implementation support will take the County a number of years, and current estimates would see a project completion in 2023.

Time period of the project or contract: 2017 – current client



# Reference No. 3

Client's name: City of La Crosse, Wisconsin

Address: 400 La Crosse Street, La Crosse, WI 54601

<u>Point of contact</u>: Ms. Jacky Greschner, Director of Information Services, (608) 789-8225, greschnerj@cityoflacrosse.org

<u>Description of services provided</u>: The City of La Crosse was supported by Elert & Associates (True North) for the assessment and ultimate replacement of their public safety radio system. The project also supported the County radio system and dispatch center needs, which were separated out during the contract negotiation processes. The City implemented a three-site, five-channel P25 trunked radio network supporting over 900 radio users and multiple dispatch centers. The RFP process was used to acquire the solution, and contract administration supported the complete implementation to requested standards.

Time period of the project or contract: 2011 – 2014



# **TAB 7: Project Cost**

# **Pricing Page**

Pricing Sheet	Price for item/service
Hourly rate for work within scope of proposal	See the "Hourly Rate Structure" table on the next page.
Estimated hours required to complete work within scope of proposal	Estimate 138 hours and providing not to exceed pricing.
Administrative cost (documents, reports, printing for above work)	Estimate 5 hours and providing not to exceed pricing.
Hourly rate for work outside of scope of proposal	See the "Hourly Rate Structure" table on the next page.
Other costs related to project	Expenses are estimated at \$1,500 for three (3) separate trips to the County and providing not to exceed pricing.
Total Cost to Complete Study and Scope of Work as proposed	\$24,500 billed monthly as work and expenses are incurred.

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# Phase 1 – Evaluation Estimate

Kick-off and initial fact-gathering	5 Hours
Review frequency utilization	2 Hours
System/Site review and stakeholder meetings	40 Hours
Propagation analysis of existing systems	6 Hours
Findings report development	
Develop recommended system options	14 Hours
Report development	
Options vetting	6 Hours
• Routine conference calls, emails, and WebEx sessions as required	8 Hours
Report finalization	
Presentation processes	8 Hours
Travel time and per diem Expenses	<u>Included</u>
Total Not to Exceed for Phase 1	\$24,500

# Notes:

- 1. Invoicing is anticipated to be monthly as percent completed following work and travel elements.
- 2. Travel time and per diem cost estimates are based on three consultant trips to Richland County. If the County requests additional trips, added expense fees will be negotiated.
- 3. A visual assessment will be made of existing facilities, though no fees have been included for a detailed look by an appropriate civil or structural engineer.
- 4. TNCG can perform all services as outlined in this proposal and will not be using any subcontractors.
- 5. The price offered is based on the envisioned scope of work in the RFP. Final pricing is negotiable and dependent upon the final agreed-upon scope of work and based on published rates.

# **Hourly Rate Structure**

Consultants' Services per Hour:	Standard
Principal	\$185
Director/Vice President	\$175
Senior Technology Consultant	\$165
Technology Consultant	\$150
Project Manager	\$150
System Designer	\$115
Drafter	\$70
Administrative	\$ 60

True North Consulting agrees to the provided pricing estimate under the enclosed scope of work for Richland County with no changes through the contract period. These included hourly rates will not change even with adjustments to the scope of services.



# TAB 8: Additional Information

# **Subsequent Phases**

The following information is provided to the County for context of a potential process completing any needed subsequent phases following a system study. Specific client and project needs are likely not easily known and understood until each previous phase is completed. Many clients may also need to impress their unique business practices on a phase and customize the scope of work to fit those needs, which True North fully supports.

Price ranges are provided to give context to a common scope of work but vary based on the anticipated hours needed due to project size. Site visit time and expense estimates are also provided to help factor in consultant visits within the scope. Phase 4 services are much more difficult to project and are loosely based on the client's anticipated project budgets. When able to understand the project, they are heavily tailored toward a vendor's anticipated implementation timeline for completion. Most radio system projects are considered to need a twelve to twenty-four-month implementation likely.

Additional project phases are proposed from TNCG to consider when the scope of services is clearly defined and tailored to fit the client's needs ensuring accurate costs. True North believes this provides a more accurate understanding of both parties and makes the need for change order requests less likely.

### Phase 2 – Design Development

- 1. Detailed technical specifications ready for competitive bidding.
- 2. Final design proposals for potential site locations and connectivity recommendations.
- 3. Budget costing for the proposed system.
- 4. Potential phased approach for the installation, including prioritization of key equipment and cost analysis of phased versus simultaneous installation.
- 5. Documents ready for frequency coordination and licensing if required.
- 6. Provide an oral and written presentation of this phase to the County and any other parties deemed appropriate.
- 7. Provide site visits as needed or requested. The cost of site visits is to be specified as part of the bid package.

Scope of Work ......\$14,000 - \$26,000

#### Phase 3 – Procurement Processes

- 1. Bidding process for the specified equipment.
- 2. Competitive selection following the bidding process.
- 3. Oversight of delivery, installation, and testing of the new system.
- 4. Provide an oral and written presentation to the County and any other parties deemed appropriate.
- 5. Provide site visits as needed or requested. The cost of site visits is to be specified as part of the bid package.

Scope of Work	\$17,000 - \$28,000
Site visit per consultant for 3-day visit (Expenses included)	\$1,800



#### Phase 4 – Contract Administration

- 1. Review of the final installation to determine if goals have been met.
- 2. Review of required training of personnel.
- 3. Provide a final oral and written presentation outlining all phases of the project to the County and any other parties deemed appropriate.
- 4. Provide site visits as needed or requested. The cost of site visits is to be specified as a part of the bid package.

Scope of Work ...... 4.5% - 7.0% of project total

Site visit per consultant for 3-day visit (Expenses included) ......\$1,800



# **Signature Page**

Bidder

Tony Choj newsli

Authorized Agent for Bidder

Chief Operating Officer12/04/2020TitleDate

Tony Chojnowski

Printed Name

**Richland County** 

Authorized Agent for County

Title

\_\_\_\_\_

Date

Printed Name