# City of West Branch, Iowa

# Proposal to Provide Public Safety Critical Communications Needs Assessment Public Safety Radio System

July 1, 2014

Prepared by:

Dave Kaun



Elert & Associates (651) 430-2772

www.elert.com

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#### **TAB 1: Cover Letter**



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July 1, 2014

Chief Mike Horihan City of West Branch P.O. Box 218 West Branch, IA 52358

#### Dear Chief Horihan:

Elert & Associates is pleased to provide a proposal to the City of West Branch to provide communications system study consulting services. We believe that we can fully meet the City's needs and provide you with the technical and operational support, expertise, and experience that will be necessary for the successful completion of your initiative.

The proposed project consultant of Elert & Associates (John Thompson) is well qualified and ready to support the City's needs for this project. Please feel free to contact us if you have any questions regarding this proposal or if we can be of assistance in any other way.

Sincerely,

Dave Kaun

Elert & Associates

651-705-1232

dave.kaun@elert.com

minnesota illinois south carolina florida tennessee connecticut



#### **TAB 2: Scope of Services**

#### The Radio Systems Assessment will:

#### 1. Assess the current West Branch communication system.

Elert & Associates (E&A) will conduct an assessment of the current radio communications system to gain a better understanding of the issues facing the City relative to a possible change required for dispatch due to Cedar County moving to P25 operation.

- Fact gathering interviews via conference calls will be conducted:
  - 1. Police Chief
  - 2. Fire Chief
  - 3. Radio system support vendor
  - 4. Cedar County for continued dispatch operation
  - 5. Graybill Electronics (Cedar County vendor)
  - 6. Johnson County (Tom Jones) as possible dispatch center
- One on-site assessment trip will be conducted with additional trips if quoted, accepted, and authorized via a change order.

# 2. Identify possible dispatch solutions and associated radio system to meet the needs of West Branch.

As part of the assessment, the present system will be compared to what is typically defined as state of the art in public safety communications and dispatch in use today. This includes the APCO P25 system planned for Cedar County and systems operated by Johnson County. The information needed to make this assessment complete will include information gathered from the interviews.

#### 3. Define alternatives for West Branch public safety radio system and dispatch.

Once information has been collected and questions answered to the degree possible, E&A consultants will develop a description of possible alternative solutions that West Branch may want to pursue for its dispatch needs and interoperability with its neighboring public safety agencies. The intent will be to develop these options to be presented via a written report and conference call to the City for reaction and input upon which we will more fully develop the agreed upon option for further refinement recommendation. From the information gathered in the call, the likely scenarios might be some means of continuing dispatch by Cedar County or to look to Johnson County (JECC) for support.

#### 4. Provide recommendation(s) to the City with open architecture and infrastructure.

A recommendation will be made to West Branch with rationale for each presented option, budgetary costs for each option, and possible positive and negatives for each option to the allow the City to make an informed decision.



#### 5. Develop and present report.

It is understood a written report will be developed as the final document encompassing all of the recommendations and requirements as listed herein relative to the radio system and associated emergency communications center. In addition to this report, E&A will also create a PowerPoint® presentation to be used as a tool for the delivery of the final recommendation and for the City to use afterwards as a means of presenting the report.



#### **TAB 3: Specialized Experiences & Certifications**

#### Overview and Historical Information

Elert & Associates (E&A) was established as a privately owned firm in March of 1984. In the past 30 years, we have served hundreds of government clients throughout the United States. Our 40 consultants and other staff work out of our headquarters in Stillwater, Minnesota and our multiple branch offices.

E&A is an independent technology and management consulting firm. We specialize in technology, public sector operations (focus on public safety and IT services), public safety communications and interoperability issues, CAD/RMS, E911, consolidated or regional PSAPs and Emergency Operations Centers (EOCs), and affiliated facilities and technology infrastructure design. Our principal consultants include technology experts, certified designers, former government IT and public safety executives, and a registered AIA certified architect.

E&A provides expertise and support to government sector clients in the areas of technology planning, staffing assessments, outsourcing, and consolidation studies. Our professional design services encompass several areas, including public safety communication and technology systems, building technology design requirements, equipment procurement specifications, system implementation, and acceptance testing. In addition to public safety, we also offer expertise in the areas of telephone systems, low voltage cabling, computer network design, in-building wireless, microwave design, CCTV security, access control, and video teleconferencing.

Public safety has been a focus of our organization from the beginning and has continued to grow. In the areas of strategic planning for operational and staffing issues, we are fortunate to have several former public safety practitioners on staff as senior consultants. These individuals have had extensive exposure to and experience in all areas of public safety operations, agency administration, services planning, staffing, and budgeting and technology needs.

### Successful Projects

The success of our projects and references for these projects speaks for themselves. E&A has developed designs after having conducted detailed assessments resulting in systems that meet the objectives of our clients. Systems range from as few as 2-3 sites using conventional analog radio all the way to extremely complex multisite trunking using P25. Some designs have included just the radio system and solutions while others include building design with full backup power and fiber interconnect.

Our success over the past 30 years as a technology and public safety consulting firm highlights our abilities in this area. We are very pleased to have dozens of repeat clients—cities, counties, and other public sector organizations that have hired us repeatedly to serve as their consultants on a variety of projects. We have 10- and 20-year relationships with some of our client base. These satisfied clients will verify that we have understood and met their requirements through successful project completion.



#### Rationale for Methodology

The methodology utilized by Elert & Associates has been honed by numerous successful projects. While we are always on the side of our client, we have found it best to share knowledge with the selected vendor during the detailed design process to insure the vendor is fully made aware of all information collected by the consultant. However, E&A never loses sight of the fact we represent the owner (West Branch) and to that end, the client will not be short changed.

As consultant for this project, Elert & Associates will collect needed information about the needs of the City while also providing technical information to City staff such that a knowledge transfer occurs as to the methodology used for the final recommended design.

#### Why Elert & Associates

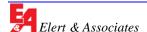
Both technical and operational expertise is necessary to adequately accomplish each phase of the project. One without the other can result in gaps of understanding and missed opportunities. Our blend of technical and public safety practitioner experience within our consultant team ensures that we will look at the project strategically with a full understanding of the desired goals and objectives. The practical, real world experience offered by consultants who have also served as administrators in public safety agencies and who have assisted and supported dozens of other public safety consortiums is very important to project success.

In addition, E&A brings along all of the necessary technology consultants to support the design and implementation of fiber optics, local area networking, microwave, voice systems, servers, and necessary support systems.

We are confident that your review of our technical approach (project plan) will result in your confidence that our approach is comprehensive and logically related to the manner in which an initiative such as this should flow.

Our experience with other similar projects across the country should demonstrate to you that we have a proven track record of supporting our clients in a manner which accomplishes their goals and objectives. Our related experience specifically with eastern Iowa provides us with the necessary knowledge base and understanding of current systems and technological trends which will allow us to provide you with the best advice and recommendations as you proceed.

We thank you for this opportunity to present this proposal, and we remain confident that we will be able to support the accomplishment of your goals and objectives and in the process establish a positive long-term relationship with the City as a client. We take great pride in the fact that most of our clients are cities and counties that have hired us multiple times to support various projects and initiatives. Perhaps our best recommendation is the fact that we have so many repeat clients who return to us for future support, having been satisfied with the work that we have done for them in the past.



#### Statement of Objectivity

Elert & Associates hereby declares:

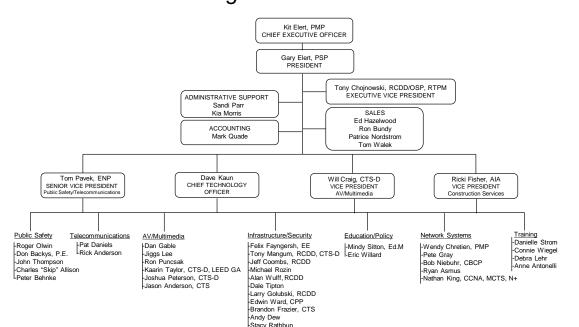
- 1. We are an independent technology-consulting group.
- 2. We sell no hardware or software or any tangible products, including but not limited to networking devices, wireless equipment, security systems, telecommunications equipment, cabling, multimedia displays or projection systems/devices.
- 3. We are not aligned with any manufacturers of the above-listed products or any products.
- 4. We are not aligned with any vendors, or distributors, or representative firms who sell, market, install, program or subcontract work for the above-listed products, or any products or services.
- 5. We are paid only on a fee (hourly) 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 we perform on behalf of our clients, or for products that we may from time to time recommend to our clients on their behalf.

Signed

Gary Elert, President

#### Organization Chart

# Elert & Associates Organization Chart





Minneapolis/St. Paul

ul Austin

Chicago

Cle

Clearwater Dallas -Established 1984Greenville

Knoxville

New Haven

Orlando

#### **Assigned Personnel**

Name	Title	Area of Expertise
John Thompson	Public Safety Consultant	Detailed review of communications systems and options

#### Public Safety Consultant - John Thompson

John Thompson is a public safety consultant with significant experience in public safety radio system design and implementation. He has worked previously as a systems design engineer and engineering manager with a major public safety radio system provider. As a consulting engineer, John has supported numerous projects and dozens of cities and counties as they worked to develop short- and long-range plans for enhancing public safety radio communications and regional interoperability. John is the principal consultant for the Muscatine County study and was deeply involved with both the Johnson County and Linn County projects.

#### JOHN THOMPSON

PUBLIC SAFETY SYSTEMS CONSULTANT

#### AREAS OF EXPERTISE

Public safety communication systems, RF engineering, RF trunking systems, and RF telemetry systems

#### WORK EXPERIENCE

2005 – Present	Elert & Associates Public Safety Systems Consultant
2002 – 2004	NextNet Wireless Inc. (Bloomington, MN) Director, International Sales
1997 – 2002	Dataradio COR Ltd. (Burnsville/Waseca, MN) Manager, Marketing (2001-2002) Senior Product Manager (1997-2001)
1996 – 1997	Sprint PCS (Eagan, MN) Senior RF Engineer
1995 – 1996	Self-Employed Telecommunications Consultant
1981 – 1995	E.F. Johnson Company Senior Product Manager, Infrastructure (1994-1995) Senior Applications Engineer (1990-1994) Regional Sales Manager, Special Accounts (1989-1990) Applications Engineer (1985-1989) Field Service Engineer (1981-1985)

#### **EDUCATION**

Marketing Management Degree Program University of St. Thomas (St. Paul, MN)

General Electronics Engineering Course Capitol Radio Engineering Institute (Washington, D.C.)

Liberal Arts and Electronics Courses Austin Community/Technical College (Austin, MN)

#### PROFESSIONAL TRAINING

Cisco Certified Network Associate (CCNA) program at Cisco Network Academy, Inver Hills Community College



#### **JOHN THOMPSON (CONT.)**

PUBLIC SAFETY SYSTEMS CONSULTANT

#### SIGNIFICANT PROJECTS

- ◆ Linn County, Cedar Rapids, IA Replacement of VHF Conventional and Analog 800 Trunking with 800 MHz P25 Trunking Radio System Countywide (2009 Present)
- ◆ City of La Crosse, WI Assessment and Replacement of Analog 800 MHz Trunking System with 800 MHz P25 Trunked Radio System (2012 Present)
- ◆ La Crosse County, WI Assessment and Potential Procurement of Enhanced VHF Countywide Conventional Radio System Infrastructure (2012 Present)
- ♦ Sheboygan County, WI Assessment, Recommendation and Procurement for an Upgrade to P25 and Coverage Enhancements for all County Systems (2014 Present)
- ♦ Monroe County, WI Assessment and Procurement of Enhanced VHF Countywide Conventional Radio System Infrastructure (2012 Present)
- ◆ City of Lincoln Lancaster County, NE 800 MHz P25 Trunked/DMR upgrade recommendation for Public Safety, Public Service and School Radio Users (2013)
- ♦ Muscatine County, IA Assessment / Recommendation for System Upgrade and Relocation of 911 Center and Consolidated Dispatch (2014)
- ♦ Northside ISD Assessment/Recommendation for UHF Analog Trunking System for Law Enforcement and School Administration to P25 and DMR respectively (2013)
- ♦ Wisconsin Department of Health Services Analyze Infrastructure Plans and Develop Recommendations for Upgrade to P25 for three DHS Facilities (Present)
- ♦ Blackhawk County, IA Assessment and Recommendation for Upgrade 800 MHz Trunking to P25, Update Interoperability Systems and Relocation of Dispatch (2013)
- ♦ Douglas County, MN 800 MHz, NG911 Upgrade, New Dispatch Center (2011)
- ◆ Story County, IA Assessment and Recommendation to Enhance and Upgrade an Analog 800 MHz Trunking Leased System to P25 Trunked System (2009-2010)
- ◆ Columbia County, WI Develop Design and RFP for Replacement Radio System for the County Plus Implementation (2009-2010)
- ◆ Huron County, OH Assess Present Public Safety System and Recommend Upgrade Path to Narrowband for the Area Law Enforcement, Fire, and EMS Operations (2009)
- ♦ Sheboygan County, WI Oversee Nextel Rebanding Project for County (2008-2009)
- ◆ Trempealeau County, WI Radio Systems Upgrade Project (2008-2012)
- ◆ Johnson County, IA Replacement seven-site Trunked Simulcast Radio System and New Dispatch Center (2008-2010)
- ◆ Bridgeport, CT Public Safety Radio System and EOC (2007-2009)



#### **JOHN THOMPSON (CONT.)**

PUBLIC SAFETY SYSTEMS CONSULTANT

#### SIGNIFICANT PROJECTS (CONT.)

- ♦ Marathon County, WI Radio System Upgrade Study and Design Initiative (2006-2009)
- ♦ Pine County, MN Replacement Radio Systems (2007)
- ♦ West Central Interoperability Alliance (WCIA) (a consortium of 12 Wisconsin counties) Interoperability Study (2005)
- ♦ Columbia-Marquette-Waushara Counties, WI Interoperability Study (2005)
- ♦ Jasper County, MO Public Safety Radio System Assessment
- ♦ Bridgeport, CT COPS Grant Interoperability Enhancement Project (2007-2009)
- ♦ Torrington, CT Radio System, Dispatch and Interoperability Needs Study

#### **Areas of Expertise**

#### APCO P25 Conventional Systems

The land mobile radio standard most followed today is defined as APCO P25 and is available to operate VHF, UHF and 700/800 MHz, the most common public safety frequencies. The term conventional is used to define radio communications either radio to radio or radio via repeater to another radio. For most small systems, conventional radio via repeaters is the most common. E&A has developed the design for a number of conventional P25 systems and hybrid conventional systems where analog, digital and trunking may be mixed in the same environment. An example of this is Marathon County in Wisconsin where the determination was made that Fire utilized analog and law enforcement encrypted P25. Law enforcement operates radios programmed to access fire (analog) and the Sheriff channels (P25 encrypted) on the same radio. This radio will also be capable of operating on the State's trunked VHF P25 radio system. In Iowa, the mix was simulcast trunked 800 MHz P25 and conventional VHF analog to meet the interoperability needs. All public safety users are provided a multiband radio cable of VHF, UHF, 700/800 MHz operation.

#### Shared Radio Systems

Trunked radio, like most voice communication systems, needs to have some level of sharing as the cost of these systems is quite high, and the FCC requires enough users on a system before necessary frequencies are allowed. However, at the same time, it should be noted that some frequencies are for public safety use and, as such, the degree to which sharing can be offered is under the rules and regulations of the FCC.

In the recommended design, Elert & Associates will take these requirements into account. E&A consultants are experts in developing solutions where the air interface is shared in a systematic way among the users.

#### P25 Digital Trunked Radio Systems

The technology of public safety trunked radio system took an interesting turn to standards with the advent of the APCO standard. As the standard has evolved, the various manufacturers finally have determined the best way for their designs is to follow and support APCO 25 and, to that end, they have adopted the Phase 1 specifications in whole and are working together to insure the Phase 2 specifications will continue to offer interoperability. Our most recent experience with APCO P25 trunked radio projects includes the Illinois METCAD systems, the Johnson County, IA JECC system, the State of Minnesota ARMER system and the Linn County, IA multisite simulcast P25 800 MHz system. Interfacing to various conventional systems has been a huge challenge for designers as it is necessary to have interoperability with neighboring communities and supporting mutual aid partners not sharing the same technology. For Hennepin County, it was extending the reach of their ASTRO25 mobile repeater platform via satellite. In Iowa, it is interconnecting two P25 trunked radio systems.



#### Mobile Data (Broadband Wireless) Systems

The technology of mobile data is also changing as demands for more through-put continue to increase. Today, users tend to use low speed owned solution or higher speed commercial systems such as offered by Sprint, Verizon, AT&T or other 3G providers. The desire by public safety is to have technology that mirrors commercial services though more reliable. To accomplish this higher demand for bandwidth, various public safety organizations have decided to support the new Long Term Evolution (LTE) standard using the promised 700 MHz band – FirstNet.

As the LTE technology evolves, LTE will play an important solution for the needs. Elert & Associates is involved in two designs at present that have the promise of using LTE for direct LTE supported technology with one a statewide system and the other a local city desiring to improve its present mobile data system. Both are on hold waiting on the FirstNet plan.

Even if the City does not have a plan for FirstNet today, aspects of the system infrastructure should be developed to allow this new and emerging technology to be added in the future. FirstNet is planning an exchange model thus offering savings to the City in the future when the system is deployed nationwide.

#### Paging and Siren Control Systems

Paging for local volunteer Fire and EMS continues to be a need for many departments. Alerting via radio thus enabling sirens is also a need that needs to be met in the design of many radio systems. E&A consultants have been involved in numerous paging and siren control system designs. If properly planned, this need can be met using the same infrastructure as needed for the public safety radio system.

#### Land Based and Wireless Automated Fire Station Alerting and Control Systems

Another unique technology though assumed to be a part of dispatch operations and at times integrated with radio, is generally assumed to be included in a systems design. Other times, it is totally forgotten until the 9th hour. To develop the right solution, it generally involves the entity's network and the radio system. Integration is the key to a cost-effective solution.

#### **Network Communications**

As the radio system technology takes on more of the technology aspects of a computer network within the system infrastructure, the supporting network becomes a key to its success. Interconnection of radio facilities can be accomplished with other radio channels, microwave, leased circuits, or fiber optics. In fact, even the supporting microwave system has become an IP platform and no longer is TDM-based. A critical device in this system has become a MPLS router and its integration is key to the way bandwidth and Quality of Service is offered to the radio systems. This MPLS router can also serve to offer 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.



#### Digital Microwave Systems

Radio system site connectivity is always an important design consideration. Microwave links are a preferred solution for many communities. In addition to past microwave projects, E&A 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 detailed understanding of the latest trends and developments in the industry. This knowledge is key to knowing how to develop system designs that can support the need of the latest in technology including the integration of MPLS routing in the core of the network.

#### Redundant Strategies and Backup Systems

Every system design, once the basic system design is completed, must have a review to determine its weak points and then to 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 five 9's of reliability. Two areas that do not typically receive enough attention are the grounding technology and the UPS system design. E&A is ready to develop the necessary strategies for redundancy and back-up systems. The concepts will be fully discussed during the design phase with options explored.

#### SAFECOM Standards

E&A's consultants have extensive experience and knowledge with the issues surrounding public safety interoperability. We have been a leader in interoperability planning, grant writing, grant administration, solution design, and project implementation. Our staff of engineers and public safety experts have successfully written millions of dollars of grant applications and have then gone on to manage the planning and implementation phases of several regional public safety interoperability initiatives.

Not only are we familiar with typical interoperability solutions, but we have also been involved with seeking out and designing several creative non-traditional solutions that have allowed our clients to solve unique situations at costs that have been considerably lower than commonly proposed major vendor solutions.

#### Dispatch Center and EOC Experience

E&A has provided several previous clients with consulting services in support of their consideration of combined public safety dispatching models and in 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.

Establishing a state-of-the-art Regional Emergency Operations Center is another area where we have supported clients before. Our consultants can offer expertise in all of the related technologies and operational considerations that would all come together to support the establishment of a Regional Emergency Operations Center. The ability to mesh technical expertise with operational experience is the key to effective planning and implementation efforts.



The key to creating any state-of-the-art facility goes far beyond the technical backbone and systems that support it. The operational planning that allows an agency to use these technologies is more important than the technologies themselves. Our consultants have been successful in pulling together and blending technical expertise with operational know-how to provide our clients with solutions and end results that work for them. Our consultants understand how to do this and have the ability and experience to get it done.

#### Public Safety Answering Points and Radio Systems

Over the past 30 years, Elert & Associates has successfully supported numerous clients as they have upgraded and purchased new public safety radio systems. Some of our clients have included Johnson County, IA, Polk County, IA, Hennepin County, MN, Dane County, WI, Sheboygan County, WI, Ozaukee County, WI, Marathon County, WI, the public safety agencies consortium (Radio Board) of the Minneapolis/St. Paul, MN region, METCAD (a consolidated public safety dispatch provider in the Champaign/Urbana, IL region), the regional public safety agencies surrounding and including the City of Grand Forks, ND, and the WCIA consortium (a group of 12 Wisconsin counties who are working together to enhance public safety communications and interoperability).

The most recent PSAP work includes Casper, WY and Douglas County, MN. The most recent radio systems include Trempealeau County and Columbia County, WI, Linn County, IA and Germantown, TN. E&A is involved presently in radio projects in La Crosse, WI, Lincoln, NE, and Grand Rapids, MI. An EOC project is underway for Rochester, MN.

E&A has a cadre of public safety radio system design engineers who have over 150 combined years of experience in the design and implementation of public safety radio systems around the world. Our public safety consulting team members have received training in various related areas from many of the major manufacturers, including Motorola, Harris, Alcatel, EF Johnson, and Tait. New to the field are manufacturers such as Simco, Cassidian, and Daniels who are being tracked for their developments.

Additionally, we are fortunate to have former public safety administrators on staff as senior consultants, people who fully understand the use and essential capabilities of these systems along with the administrative and political environments that impact such projects. Our team members' past experience includes responsibility for public safety communications network operations, as well as dispatch centers, RMS and mobile data applications, and CAD system selection and implementation. This is clearly an area of expertise for the E&A team.

#### Computer Aided Dispatch (CAD)

While the current scope of anticipated work may or may not include changes to E911, CAD or GIS, it will be important to review any impact on these systems that changes to the public safety radio network and dispatch consolidation might have on them.

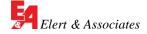
E&A has been designing administrative and emergency telephone systems for cities and counties for 30 years. Our experience in supporting city and county governments in this area was one of our core areas of competence right from the beginning.



Recent E&A projects have included the administrative telecommunications system for the City of Savannah, GA, and emergency and non-emergency communications systems including two-way radio, and CAD systems for La Crosse County, WI, Marathon County, WI, Pine County, MN, Stearns County/City of St. Cloud, MN and Story County, IA. We have also supported several E911, cellular Phase II E911 and NG9-1-1 upgrade projects.

E&A has provided needs analysis, RFP design, proposal evaluation, vendor negotiation support, implementation oversight, and final acceptance testing support for several other clients who have recently or are in the process of implementing new CAD systems. Hennepin County, MN is a larger client who we have recently supported in a similar project.

GIS and/or AVL are often related components of CAD systems. E&A staff members have also supported clients who have included these features in their public safety technology plans and implementation efforts.



#### **TAB 4: Cost of Services**

#### **Detailed Cost Summary**

#### Radio System Assessment and Conceptual Design with Budgetary Estimates

- Kick-off and initial fact gathering meeting (on site, project manager / consultant)
  - O Visit to all radio base station sites (fire and law)
  - Visit to PSAP radio/equipment room
  - o Interview user groups and leadership
- Routine conference calls and emails as required
- Project report development (off site)
  - o Options for dispatch
  - o Interoperability issues
  - o Positives and negatives for options
- Presentation of recommendation to City (via WebEx session / conference call)

Consultant Fees and one Travel Trip to City ......\$8,600



#### **TAB 5: Reference Project Descriptions**

#### Selected References

The following is a detailed review of the last 5-6 years of radio system consulting systems:

Trempealeau County, Wisconsin

Organization Type: County in Wisconsin

Contact: Mr. Dan Schreiner, Emergency Management

Phone: 715-538-4351

E-mail: schreinerd@tremplocounty.com

<u>Project Name</u>: Replacement Public Safety Radio System

Project Details: Elert & Associates was retained to conduct a review of Trempealeau

County's public safety radio system in 2008 and to offer a complete system recommendation thus completing Phases I, II, and III of their project. The County has obtained County Board authorization to acquire the recommended system. E&A developed a Request for Proposal for the design, and the \$2.5M project has been awarded to a local Motorola shop for implementation. The project now having completed final detailed design phase and approval is being constructed. Elert & Associates is providing system implementation oversight through commissioning with operational expected June 2012. E&A had previously developed a Countywide Emergency Operations Plan (EOP) and updated the WMD/Terrorism plan. Other tasks included the preparation and updating of the communications

interoperability plan and a review of the critical facilities.

Germantown, Tennessee

Organization Type: Suburb of Memphis, TN

<u>Contact</u>: Mr. Tony Fischer, Technology Director

Phone: 901-757-7324

E-mail: afischer@germantown-tn.gov

<u>Project Name</u>: Replacement Public Safety Radio System

Project Details: Elert & Associates was retained to conduct a review of the City's public

safety radio system in 2011 and to offer a complete system assessment and recommendation. This was completed as per their schedule. The City has obtained Board authorization to acquire the recommended system and E&A developed a Request for Proposal for the design of an 800 MHz convention P25 system. The project is at the award stage after receiving three proposals for this site simulcast system. The award has been made and the project has moved to the final detailed design phase. Elert & Associates provided system implementation oversight through commissioning with operation

December 2012 and final cutover mid 2013.



#### City/County of Grand Forks, North Dakota

Organization Type: Police Department and Dispatch Center

Contact: Capt. Mike Kirby Ms. Becky Ault

Executive Sponsor / Project Manager Executive Director PSAP Phone: 701-787-8002 Phone: 701-787-8042

E-mail: mkirby@grandforksgov.com

E-mail: bault@grandforksgov.com

<u>Project Name</u>: COPS Grant Regional Interoperability Enhancement Project

Project Details: This is a comprehensive public safety radio system and regional

interoperability enhancement project. E&A assisted the City in obtaining its COPS Grant, recommended best solutions following a needs analysis, assisted in RFP issuance and vendor selection and is now supporting the implementation of the enhancements. Planning and needs analysis began in mid 2005. Project work began in fall of 2005 and continued through mid 2007. E&A has continued to work with Grand Forks to improve system performance as the city grows in size. The latest project was the development of a newly constructed dispatch center and countywide paging

solution with both phased to meet financial objectives.

#### Marathon County, Wisconsin

Organization Type: County in central Wisconsin (largest county in the state)

Contact: Mr. Dan Hoenecke

Phone: 715-261-6987, x1308

E-mail: daniel.hoenecke@co.marathon.wi.us

<u>Project Name</u>: Public Safety Communications System Replacement

<u>Project Details</u>: E&A has completed multiple projects for Marathon County over the past

15 years. The most recent, the communications system assessment, resulted in a land mobile radio system upgrade project now being implemented. We worked with the County to determine its preferred solution and then proceeded to specifications and RFP development for microwave backbone enhancements and for an upgraded public safety radio network for Law Enforcement, Fire, Parks Emergency Management, Transit and Highways.

The system is a combination of P25 and simulcast analog.

The system now under construction is being built by Tait Radio and using Alcatel microwave with more than a dozen sites. The system design has involved five new towers, all new microwave, a move to P25 and analog simulcast plus a new county-wide paging channel. Anticipated turn on is

summer of 2012 for this \$6+M project.



#### Johnson County, Iowa

Organization Type: County Consolidated Dispatch Center and EOC

<u>Contact</u>: Mr. Tom Jones, Executive Director

Joint Emergency Communication Center

4529 Melrose Avenue West

Iowa City, IA 52246 Phone: 319-356-6888

E-mail: tjones@co.johnson.ia.us

<u>Project Name:</u> Joint Emergency Communication Association

Project Details: Elert & Associates was selected by Johnson County, IA (named the Joint

Emergency Communications Center) to provide consulting services to assist the Policy Board to develop a design for a replacement county-wide 800 MHz trunked radio system and the design of the technology for a new consolidated dispatch center and emergency operations center. The project began in 2008 and is well underway with the development of seven trunked radio sites and the finalization of the new dispatch center and emergency operations center building. The \$8.9M P25 radio system was awarded to Harris (Tyco), the multimedia to DASCOM, CAD to SMART and the 911 bids are under review. The system was completed in 2011 and is fully

operational.

#### Linn County, Iowa

Organization Type: County and Three Cities in Iowa

<u>Contacts</u>: Mr. Charlie McClintock Captain Dave Knott

City of Cedar Rapids Linn County

Director, 911 PSAP Center Director, 911 PSAP Center

Joint Communications Agency Sheriff's Department 310 2<sup>nd</sup> Ave. SW

Cedar Rapids, IA 52404 Cedar Rapids, IA 52406 Phone: 319-286-5383 Phone: 319-892-6116

E-mail: c.mcclintock@cedar-rapids.org E-mail: david.knott@linncounty.org

<u>Project Name</u>: Replacement Public Safety Radio System

Project Details: Linn County, the City of Cedar Rapids, the City of Hiawatha, and the City

of Marion all suffered through flooding and the fact they operate on different frequency bands and systems, thus interoperability was at a forefront for public safety. The various agencies in this area decided it was time that all move to a common system. Elert & Associates was retained to finalize a request for proposal and assist these agencies in acquiring a new P25 800 MHz trunked radio system. The system was bid using an RFP developed by Elert & Associates, awarded to Harris Corporation and is

under construction. Cutover was early 2014.

#### Complete Government Client List

AITKIN COUNTY, Aitkin, Minnesota

ALLAMAKEE COUNTY.

Waukon, Iowa

ASHLAND COUNTY, Ashland, Wisconsin

AUDUBON COUNTY, Audubon, Iowa

AUSTIN PUBLIC UTILITIES,

Austin, Minnesota BARRON COUNTY, Barron, Wisconsin

BAYFIELD COUNTY, Washburn, Wisconsin

BEADLE COUNTY, Huron, South Dakota

BELTRAMI COUNTY, Bemidji, Minnesota

BENTON COUNTY, Vinton, Iowa

BLACKHAWK COUNTY,

Waterloo, Iowa

BLUE EARTH COUNTY, Mankato, Minnesota

BOONE COUNTY, Belvidere, Illinois BREMER COUNTY,

Waverly, Iowa
Brevard County,

Viera, Florida Brown County,

New Ulm, Minnesota BUFFALO COUNTY,

Alma, Wisconsin

BUREAU OF CRIMINAL

APPREHENSION, St. Paul, Minnesota BURNETT COUNTY, Siren, Wisconsin

BUTLER COUNTY, Allison, Iowa

CALHOUN COUNTY, Marshall, Michigan CAMPBELL COUNTY, Rustburg, Virginia CARROLL COUNTY,

Carroll, Iowa
CARVER COUNTY.

Chaska, Minnesota

CASS COUNTY, Fargo, North Dakota

CASS COUNTY, Virginia, Illinois CEDAR COUNTY, Tipton, Iowa

CHEROKEE COUNTY, Cherokee, Iowa

CHIPPEWA COUNTY, Chippewa Falls, Wisconsin

CHISAGO COUNTY, Center City, Minnesota CITY AND COUNTY OF

LEAVENWORTH, Leavenworth, Kansas

CITY OF ALBERTVILLE, Albertville, Minnesota

CITY OF ALLEN, Allen, Texas CITY OF AMES, Ames, Iowa

CITY OF ANKENY, Ankeny, Iowa CITY OF ANOKA, Anoka, Minnesota

CITY OF APPLE VALLEY, Apple Valley, Minnesota

CITY OF AUSTIN, Austin, Texas

CITY OF BATTLE CREEK, Battle Creek, Michigan

CITY OF BELOIT,
Beloit, Wisconsin
CITY OF BISMARCK,
Bismarck, North Dakota
CITY OF BLOOMINGTON,
Bloomington, Minnesota

CITY OF BURNSVILLE, Burnsville, Minnesota

CITY OF CASPER, Casper, Wyoming

CITY OF CEDARBURG, Cedarburg, Wisconsin

CITY OF CEDAR RAPIDS, Cedar Rapids, Iowa

CITY OF CHAMPAIGN, Champaign, Illinois CITY OF CHARLOTTE, Charlotte, North Carolina

CITY OF COLLEGE STATION, College Station, Texas

CITY OF COLUMBIA HEIGHTS, Columbia Heights, Minnesota

CITY OF COLUMBUS, Columbus, Wisconsin CITY OF COTTAGE GROVE, Cottage Grove, Minnesota

CITY OF DAYTON, Dayton, Ohio

CITY OF DECORAH, Decorah, Iowa

CITY OF DES MOINES, Des Moines, Iowa CITY OF DUBUQUE, Dubuque, Iowa CITY OF DULUTH, Duluth, Minnesota CITY OF EAGAN, Eagan, Minnesota

CITY OF EDEN PRAIRIE, Eden Prairie, Minnesota

CITY OF EDINA,
Edina, Minnesota
CITY OF FARGO,
Fargo, North Dakota
CITY OF FARMINGTON,
Farmington, New Mexico
CITY OF FORT ATKINSON,
Fort Atkinson, Wisconsin



CITY OF FORT COLLINS, Fort Collins, Colorado CITY OF GAINESVILLE, Gainesville, Georgia

CITY OF GARLAND, Garland, Texas

CITY OF GERMANTOWN, Germantown, Tennessee

CITY OF GOODYEAR, Goodyear, Arizona

CITY OF GRAND FORKS, Grand Forks, North Dakota

CITY OF GROSSE POINT

FARMS,

Grosse Point Farms, Michigan

CITY OF HAM LAKE, Ham Lake, Minnesota

CITY OF HASTINGS, Hastings, Minnesota

CITY OF HERMANTOWN, Hermantown, Minnesota

CITY OF HURST, Hurst, Texas

CITY OF INVER GROVE

HEIGHTS,

Inver Grove Heights,

Minnesota

CITY OF IOWA CITY, Iowa City, Iowa

CITY OF JANESVILLE, Janesville, Wisconsin

CITY OF KANSAS CITY, Kansas City, Missouri

CITY OF LINCOLN, Lincoln, Nebraska

CITY OF MADISON, Madison, Wisconsin

CITY OF MANKATO, Mankato, Minnesota

CITY OF MAPLE GROVE, Maple Grove, Minnesota

CITY OF MAPLEWOOD, Maplewood, Minnesota

CITY OF MCHENRY, McHenry, Illinois

CITY OF MINNETONKA, Minnetonka, Minnesota

CITY OF MINOT, Minot, North Dakota CITY OF NEW HOPE,

New Hope, Minnesota

CITY OF NIXA, Nixa, Missouri

CITY OF OAK GROVE, Cedar, Minnesota

CITY OF OCONOMOWOC, Oconomowoc, Wisconsin

CITY OF OLIVETTE, Olivette, Missouri CITY OF ORONO, Orono, Minnesota CITY OF OTTUMWA, Ottumwa, Iowa

CITY OF OWATONNA, Owatonna, Minnesota

CITY OF PINGREE GROVE, Pingree Grove, Illinois CITY OF PLYMOUTH, Plymouth, Minnesota

CITY OF PORTLAND, Portland, Oregon

CITY OF RALEIGH, Raleigh, North Carolina

CITY OF RICHMOND HEIGHTS, Richmond Heights, Missouri

CITY OF ROBBINSDALE, Robbinsdale, Minnesota CITY OF ROCKFORD.

Rockford, Illinois

CITY OF ROCKWALL, Rockwall, Texas

CITY OF ROSEVILLE, Roseville, Minnesota

CITY OF ROUND ROCK, Round Rock, Texas CITY OF ST. CLOUD,

St. Cloud, Minnesota

CITY OF ST. LOUIS PARK, St. Louis Park, Minnesota CITY OF ST. PAUL, St. Paul, Minnesota CITY OF SALINA,

Salina, Kansas

CITY OF SAVANNAH, Savannah, Georgia CITY OF SEGUIN, Seguin, Texas

CITY OF SHOREVIEW, Shoreview, Minnesota

CITY OF SOUTH ST. PAUL, South St. Paul, Minnesota

CITY OF STATESBORO, Statesboro, Georgia CITY OF SUPERIOR, Superior, Wisconsin CITY OF TOPEKA, Topeka, Kansas

CITY OF VADNAIS HEIGHTS, Vadnais Heights, Minnesota

CITY OF WAHPETON, Wahpeton, North Dakota CITY OF WATERTOWN, Watertown, Wisconsin

CITY OF WAUSAU, Wausau, Wisconsin

CITY OF WEBSTER GROVES, Webster Groves, Missouri

CITY OF WESTLAND, Westland, Michigan CITY OF WOODBURY, Woodbury, Minnesota

CLARK COUNTY, Neillsville, Wisconsin

CLAY COUNTY, Spencer, Iowa CLAY COUNTY,

Vermilion, South Dakota

CLAYTON COUNTY, Elkader, Iowa CLINTON COUNTY, Clinton, Iowa

CODDINGTON COUNTY, Watertown, South Dakota

COLLIN COUNTY, McKinney, Texas

COLORADO STATE PATROL, Alamosa, Colorado

COLUMBIA COUNTY, Portage, Wisconsin

CONVENTION AND VISITORS BUREAU OF GREATER

KANSAS CITY,

Kansas City, Missouri

COOK MEMORIAL PUBLIC LIBRARY DISTRICT, Libertyville, Illinois

CRAWFORD COUNTY,

Prairie Du Chien, Wisconsin

CROW WING COUNTY, Brainerd, Minnesota

CUMBERLAND COUNTY, Carlisle, Pennsylvania

DAKOTA COUNTY, Hastings, Minnesota

DAKOTA COUNTY HRA, Rosemount, Minnesota

DANE COUNTY, Madison, Wisconsin

DANE COUNTY REGIONAL

AIRPORT,

Madison, Wisconsin

DANE COUNTY SOCIAL

SERVICES,

Madison, Wisconsin

DAVIS COUNTY, Bloomfield, Iowa

DECATUR COUNTY,

Leon, Iowa

DELAWARE COUNTY, Manchester, Iowa

DES MOINES COUNTY, Burlington, Iowa

DODGE COUNTY, Juneau, Wisconsin

DODGE COUNTY, Mantorville, Minnesota

DOOR COUNTY,

Sturgeon Bay, Minnesota

DOUGLAS COUNTY, Alexandria, Minnesota

DOUGLAS COUNTY, Douglasville, Georgia

DUBUQUE COUNTY, Dubuque, Iowa

DUNKLIN COUNTY, Kennett, Missouri DUNN COUNTY,

Menomonie, Wisconsin EASTSIDE SUBURBAN

**EMERGENCY** 

COMMUNICATIONS CENTER,

Reynoldsburg, Ohio
EAU CLAIRE COUNTY,
Eau Claire, Wisconsin
FAYETTE COUNTY,
West Union, Iowa

FEDERAL RESERVE BANK, Minneapolis, Minnesota FOND DU LAC COUNTY, Fond du Lac, Wisconsin FRANKLIN COUNTY,

Union, Missouri FREMONT COUNTY, Sidney, Iowa

GRAND COUNTY TELEPHONE

AUTH. BOARD,

Winter Park, Colorado GRAND RAPIDS LIBRARY, Grand Rapids, Minnesota

GRANT COUNTY, Lancaster, Wisconsin GREEN LAKE COUNTY, Green Lake, Wisconsin

GREENE COUNTY, Springfield, Missouri GRUNDY COUNTY, Grundy Center, Iowa HANCOCK COUNTY, Carthage, Illinois HANCOCK COUNTY.

Garner, Iowa HARDIN COUNTY, Eldora, Iowa HENNEPIN COUNTY, Minneapolis, Minnesota

HO CHUNK NATION TRIBAL

JUSTICE CENTER,

Black River Falls, Wisconsin

HOWARD COUNTY, Cresco, Iowa

IOWA COUNTY,

Dodgeville, Wisconsin

IRON COUNTY,
Hurley, Wisconsin
JACKSON COUNTY,

Black River Falls, Wisconsin

JACKSON COUNTY, Maquoketa, Iowa JASPER COUNTY, Newton, Iowa

JEFFERSON COUNTY, Fairfield, Iowa

JEFFERSON COUNTY, Jefferson, Wisconsin JO DAVIESS COUNTY, Hanover, Illinois JOHNSON COUNTY, Iowa City, Iowa JONES COUNTY, Anamosa, Iowa

JUNEAU COUNTY,
Mauston, Wisconsin
KANABEC COUNTY,
Mora, Minnesota
KANE COUNTY,
Geneva, Illinois
KANSAS CITY AREA

(KCATA),

Kansas City, Missouri Kansas City Police

TRANSPORTATION AUTH.

DEPARTMENT,

Kansas City, Missouri KENOSHA COUNTY, Kenosha, Wisconsin KEOKUK COUNTY,

Sigourney, Iowa



KEWAUNEE COUNTY, Kewaunee, Wisconsin KIT CARSON COUNTY, Burlington, Colorado

KNOX COUNTY, Knoxville, Tennessee KOOTENAI COUNTY, Coeur D' Alene, Idaho LACROSSE COUNTY, La Crosse, Wisconsin

LAFAYETTE COUNTY, Darlington, Wisconsin LAKE COUNTY,

Baldwin, Michigan LANGLADE COUNTY, Antigo, Wisconsin

LEE COUNTY, Dixon, Illinois

LEE COUNTY,
Fort Madison, Iowa
LESUEUR COUNTY.

Le Center, Minnesota

LINCOLN COUNTY, Merrill, Wisconsin

LINN COUNTY, Cedar Rapids, Iowa

LISLE I-NET CONSORTIUM,

Lisle, Illinois LOUISA COUNTY, Wapello, Iowa

LOWELL HOUSING AUTHORITY.

Lowell, Massachusetts

LYON COUNTY,
Rock Rapids, Iowa

MANITOWOC COUNTY, Manitowoc, Wisconsin

MARATHON COUNTY, Wausau, Wisconsin

MARQUETTE COUNTY, Montello, Wisconsin

MAYO CIVIC CENTER, Rochester, Minnesota McDonough County,

Macomb, Illinois

MCHENRY COUNTY, McHenry, Illinois

MCLEOD COUNTY, Glencoe, Minnesota

METROPOLITAN AIRPORTS

COMMISSION, St. Paul. Minnesota

METROPOLITAN COUNCIL,

St. Paul, Minnesota

METROPOLITAN TRANSIT

COMMISSION,

Minneapolis, Minnesota

MILLE LACS DRIFTSKIPPERS

SNOWMOBILE CLUB, Isle, Minnesota MILLS COUNTY, Glenwood, Iowa

MINNEHAHA COUNTY, Sioux Falls, South Dakota

MINNESOTA CORRECTIONAL

FACILITY,

St. Cloud, Minnesota

MINNESOTA DEPARTMENT

OF CORRECTIONS, St. Paul, Minnesota MITCHELL COUNTY, Osage, Iowa

Osage, Iowa

MONONA COUNTY, Onawa, Iowa

MONROE COUNTY, Tomah, Wisconsin

MORRISON COUNTY, Little Falls, Minnesota

MOWER COUNTY, Austin, Minnesota WEST BRANCH, West Liberty, Iowa

NORTHWEST REGIONAL RADIO BOARD,

Bemidji, Minnesota O'BRIEN COUNTY, Primghar, Iowa OCONTO COUNTY,

Oconto, Wisconsin OSCEOLA COUNTY,

Sibley, Iowa

OUTAGAMIE COUNTY, Appleton, Wisconsin

OWATONNA PUBLIC UTILITIES,

Owatonna, Minnesota OZAUKEE COUNTY,

Port Washington, Wisconsin

PAGE COUNTY, Clarinda, Iowa PARK COUNTY, Fairplay, Colorado PIERCE COUNTY, Ellsworth, Wisconsin

PINE COUNTY, Pine City, Minnesota PLYMOUTH COUNTY, Remsen, Iowa

POCAHONTAS COUNTY, Pocahontas, Iowa POLK COUNTY,

Balsam Lake, Wisconsin

POLK COUNTY, Des Moines, Iowa

PORTSMOUTH METROPOLITAN

HOUSING AUTHORITY, Portsmouth, Ohio POWESHIEK COUNTY, Montezuma, Iowa PRICE COUNTY, Phillips, Wisconsin

PUBLIC BUILDING COMMISSION OF CHICAGO,

Chicago, Illinois

PUBLIC HOUSING AGENCY OF THE CITY OF SAINT PAUL,

St. Paul, Minnesota RAMSEY COUNTY, St. Paul, Minnesota REDWOOD COUNTY,

Redwood Falls, Minnesota

RICE COUNTY,
Faribault, Minnesota
RICHLAND COUNTY,
Richland Center, Wisconsin

RICHLAND COUNTY, Wahpeton, North Dakota



RICHMOND HEIGHTS, Richmond Heights, Missouri

ROBBINSDALE POLICE DEPT., Robbinsdale, Minnesota

ROCK COUNTY, Janesville, Wisconsin

ROCK COUNTY, Luverne, Minnesota ROCK RIVER WATER RECLAMATION DISTRICT,

Rockford, Illinois

RUSK COUNTY, Ladysmith, Wisconsin

SAINT CROIX COUNTY, Hudson, Wisconsin

SAINT PAUL CIVIC CENTER, St. Paul, Minnesota

SAINT PAUL PUBLIC LIBRARY, St. Paul, Minnesota

SAN LUIS VALLEY COUNTY, Alamosa, Colorado

SANGAMON COUNTY, Springfield, Illinois

SARPY COUNTY, Papillion, Nebraska

SAUK COUNTY, Baraboo, Wisconsin SAWYER COUNTY, Hayward, Wisconsin

**SEVEN-COUNTY** 

METROPOLITAN PROJECT, Minneapolis, Minnesota

SHEBOYGAN COUNTY, Sheboygan, Wisconsin SHERBURNE COUNTY, Elk River, Minnesota

SIOUX COUNTY, Orange City, Iowa

SOUTH DUNKLIN COUNTY, Hornersville, Missouri

ST. LOUIS COUNTY, Duluth, Minnesota

STATE OF COLORADO, Denver, Colorado

STATE OF WISCONSIN, Madison, Wisconsin

STEARNS COUNTY, St. Cloud, Minnesota

STEELE COUNTY, Owatonna, Minnesota

STEVENS COUNTY, Morris, Minnesota

STODDARD COUNTY, Dexter, Missouri STORY COUNTY, Nevada, Iowa

TAMA COUNTY, Toledo, Iowa

TAYLOR COUNTY, Medford, Wisconsin

TOWN OF ADDISON, Dallas, Texas

TOWN OF GLASTONBURY, Glastonbury, Connecticut

TRAVERSE COUNTY, Wheaton, Minnesota

TREMPEALEAU COUNTY, Whitehall, Wisconsin

VERNON COUNTY, Viroqua, Wisconsin

VILAS COUNTY, Eagle River, Wisconsin

VILLAGE OF DEERFIELD, Deerfield, Illinois

VILLAGE OF GERMANTOWN, Germantown, Wisconsin

VILLAGE OF GURNEE, Gurnee, Illinois

VILLAGE OF WESTON, Weston, Wisconsin

VILLAGE OF WINNETKA,

Winnetka, Illinois VOLUSIA COUNTY, DeLand, Florida WALWORTH COUNTY, Elkhorn, Wisconsin WAPELLO COUNTY,

Ottumwa, Iowa Warren County,

Warrenton, Missouri WASHBURN COUNTY, Shell Lake, Wisconsin

WASHINGTON COUNTY, Blaire, Nebraska

WASHINGTON COUNTY, Stillwater, Minnesota

WASHINGTON COUNTY, West Bend, Wisconsin WAUKESHA COUNTY,

Waukesha, Wisconsin WAUSHARA COUNTY, Wautoma, Wisconsin

WEST CENTRAL INTEROPERABILITY ALLIANCE (WCIA), Wisconsin

WHITE COUNTY, Carmi, Illinois

WHITESIDE COUNTY, Morrison, Illinois

WINNEBAGO COUNTY, Forest City, Iowa

WINNESHIEK COUNTY, Decorah, Iowa

WINONA COUNTY, Winona, Minnesota

WISCONSIN, STATE OF, DEPARTMENT OF REVENUE, Madison, Wisconsin

WOOD COUNTY.

Wisconsin Rapids, Wisconsin

WOODBURY COUNTY, Sioux City, Iowa

