



# **Statewide Needs Assessment and Plan for the Improvement of Public Safety Radio Communications Systems in Wisconsin**

## **PSMR Information Resource Guide**

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## 1.0 Introduction

The technologies and trends in public safety communications are constantly evolving. Public safety officials must be able to stay abreast of the important issues that affect public safety communications in order to make informed decisions.

Federal Engineering (**FE**) was tasked with providing a roadmap for public safety officials to follow in educating themselves on the latest public safety technologies and trends. **FE** investigated many sources of information, including nonprofit public safety organizations, public safety related publications, federal government agencies, states that implemented or are planning to implement statewide public safety communications systems, and information available from the Internet. Federal Engineering also investigated sources that provide information on specific public safety issues such as the Project 25 standards, the 700 MHz band, the 4.9 GHz band, and the Nextel Plan. Vendor sources were also included in the investigation.

## 2.0 Executive Summary

**Federal Engineering** has created this PSMR Information Resource Guide for the professional working in public safety in Wisconsin. We realize that you need ready access to current information on the latest developments in public safety mobile radio interoperability.

The Guide is by design a gateway to information. Through its use you will be led to sources that will expand and/or update your knowledge of public safety mobile radio interoperability. It is not designed to be all encompassing, but rather it's a road to travel. You'll discover many interesting things and perhaps you'll find new roads to investigate.

Using the PSMR Information Resource Guide is a matter of letting "*your fingers do the surfing.*" Public safety professionals may start at the beginning and work your way through, or go to specific areas of interest to you. Most importantly, please use this PSMR Information Resource Guide to acquire critical knowledge that will enable you to better plan for your future radio systems.

As you use this PSMR Information Resource Guide, you will be able to stay current and improve your knowledge of the public safety communications arena.



## 2.1 Quick Guide

**Table 1 – QUICK GUIDE to INFORMATION**

TOPIC	LOCATION
Current Best Practices	Section 7.0 – page 21
Project 25	Section 4.1 – page 16
800 MHz Consensus Plan	Section 4.4 – page 18
Federal Regulatory Agencies	Section 3.3 – page 8
State Governments Activity in PSMR	Section 3.4 – page 11
Public Safety Organizations	Section 3.1 – page 4
Publications	Section 3.2 – page 7
700 MHz & 4.9 GHz Planning	Section 4.2 – page 17
Vendor System Products	Section 5.0 – page 18
Conferences & Seminars	Section 6.0 page 20

## 3.0 Public Safety Resources

### 3.1 Organizations

Nonprofit organizations are made up of public safety officials that have a vested interest in promoting the most effective use of communications resources for public safety. The following are descriptions of nonprofit organizations that provide information on the latest public safety issues:

- A. Association of Public Safety Communications Officials (APCO)  
<http://www.apcointl.org>

APCO is a non-profit organization that is an advocate for public safety communications. APCO's web site has a wealth of information on the topics such as wireless 911, FCC rules, congressional legislation, operating procedures, and 911 education. The web site also has links to current public safety news events and announcements of public safety conferences and symposiums.

Active Tier-One membership in APCO is also available for \$80.00 per year. APCO defines Active Tier-One membership as "Personnel responsible for management, design, construction, installation, command, and operation of public safety communications systems and supporting information systems". A membership application can be



filled out online or downloaded and faxed or mailed later on. The application can be found at [http://www.apco911.org/membership/app\\_reg.html](http://www.apco911.org/membership/app_reg.html). The following are available to APCO members:

- APCO Bulletin
- Annual International Conference and Exposition and Regional Conferences
- Access to public safety training programs and resources
- Ability to apply for committees

B. American Association of State Highway and Transportation Officials (AASHTO)

<http://www.transportation.org/aashto/home.nsf/FrontPage>

AASHTO is an association that represents the interests of highway and transportation departments in the 50 states, Washington, D.C., and Puerto Rico. The AASHTO web site has links to transportation related news stories, AASHTO accreditation programs, and their materials reference laboratory. There is also a link to the programs and services provided by AASHTO.

C. Land Mobile Communications Council (LMCC)

<http://www.lmcc.org>

LMCC is a non-profit association that is made up of organizations in the land mobile radio carrier field. The member organizations represent mobile radio users in public safety, industrial & land transportation, and specialized mobile radio. APCO and the International Association of Fire Chiefs (IAFC) are among the member organizations. The LMCC web site is located at <http://www.lmcc.org>. The site contains links to regulatory news stories and LMCC filings on regulatory issues. The filings can be downloaded from their web site.

D. National Emergency Number Association (NENA)

<http://nena.org>.

NENA is an organization that is dedicated to the implementation of a universal public safety emergency number. The NENA web site contains information such as FCC actions and congressional legislation that affect enhanced 911, wireless 911, and voice over IP. Membership is available for NENA. A downloadable PDF of



the membership application can be accessed by clicking on the “Join NENA” link near the top of the home page. Officials that are employed directly by a federal, state, or local governmental agency can apply for an active membership for \$95.00 per year. A NENA member receives access to the education books, technical standards, and operating procedures developed by the organization. NENA members also receive the NENA News Magazine. The organization offers a number of working sessions, forums, and conferences throughout the year.

E. National Public Safety Telecommunications Council (NPSTC)

<http://www.npstc.org>

NPSTC is an association that is made up of public safety organizations. NPSTC was formed to follow up on the recommendations of the Public Safety Wireless Advisory Committee (PSWAC). Member organizations include APCO, the National Association of State EMS Directors (NASEMSD), the National Association of State Telecommunication Directors (NASTD), and the International Association of Fire Chiefs (IAFC). The web contains numerous documents such as newsletters, guidebooks, technical reports, 700 MHz regional plans, and FCC filing and position papers.

F. National Association of State Telecommunication Directors (NASTD)

<http://www.nastd.org>

NASTD is an organization that promotes the effective use of telecommunications technology in the operations of state governments. The web site has links to active forum topics, resources, and meeting information.

State employees who are responsible for IT resources can become members of NASTD if the individual state applies for membership and makes a single dues payment. The web page for state membership can be found by pointing the cursor to the “membership” link near the top of the home page and scrolling down and clicking on “state membership.”

State membership includes member-only web access, reduced annual conference fees, reduced regional meeting fees, and complimentary state reports.



## G. Public Safety Operational Information

The following organizations have web sites with information on the latest issues and trends in public safety operations:

1. National Sheriffs Association (NSA)  
<http://www.sheriffs.org>
2. National Academies of Emergency Dispatch (NAED)  
<http://www.emergencydispatch.org>
3. International Association of Chiefs of Police (IACP)  
<http://www.theiacp.org>
4. International Association of Emergency Managers (IAEM)  
<http://www.iaem.org>
5. International Association of Fire Chiefs (IAFC)  
<http://www.iafc.org>
6. National Executive Institute Associates (NEIA)  
<http://www.neiassociates.org>
7. National Association of State EMS Directors (NASEMSD)  
<http://www.nasemsd.org>

## 3.2 Publications

The following are publications that provide articles on the latest trends and innovations in public safety communications:

- A. MissionCritical Communications Magazine  
<http://www.radioresourcemag.com>

MissionCritical Communications magazine (formerly RadioResource Magazine) has articles that describe the latest current events, technology trends, and regulatory actions involving critical wireless public safety communications. Their web page has news briefs and listings of dates of upcoming public safety events. A free



subscription is available to all qualified officials who are involved in critical public safety communications.

- B. Mobile Radio Technology Magazine  
<http://www.iwce-mrt.com>

Mobile Radio Technology Magazine provides articles on the latest public safety radio technology and news events. Their web site has links to news stories relating to mobile radio and to related publications and web sites. An application for a free subscription can be completed on their web site.

- C. 911 Magazine  
<http://www.9-1-1magazine.com>

911 Magazine is dedicated to providing information to people who operate or manage emergency 911 dispatch centers. An application for a subscription can be completed on their web site.

### 3.3 ***Federal Government and Regulatory***

Federal government agencies, federal government radio user associations, and regulatory agencies provide an excellent source of information on public safety communication issues. The following are sources for public safety information:

- A. Federal Communications Commission (FCC)  
<http://wireless.fcc.gov/publicsafety>

The FCC's public safety web site is tailored to provide information to the public safety radio user community. The most recent public notices, orders, report and orders, and filings concerning public safety are available for downloading. Links to database searches, public rules and regulations, 800 MHz national and regional planning, and 700 MHz national and regional planning are also available.

"Refarming" is the informal name of a notice and comment rule-making proceeding (PR Docket No. 92-235) opened in 1992 to develop an overall strategy for using the spectrum in the private land mobile radio (PLMR) allocations, which include public safety frequencies, more efficiently to meet future communications requirements.



The rules adopted in the “refarming” proceeding are applicable to the Private Land Mobile bands, including the Public Safety Pool, below 800 MHz. Specifically, the technical rules adopted affect the licensing and use of radios in the UHF and VHF bands:

What “refarming” rules are simply is the halving in size of the current channel frequency width, and then halving it again. Thus the term that’s been coined for this process is “narrowbanding,” and the effect of this activity will be to create four channels where there now is one. This will occur on a timetable that may extend to 2018. There is a proposal before the FCC to have that date changed to 2013.

B. SAFECOM/Public Safety Wireless Network Program (PSWN)  
<http://www.pswn.gov>

PSWN is in the process of transitioning into SAFECOM. SAFECOM is a program within the Federal Government that is dedicated to promoting communications interoperability between federal, state, and local public safety agencies. The program’s web site has pages for policy issues, system planning, information links to public safety organizations and topics, events, and library documents. SAFECOM/PSWN also holds a number of interoperability forums and symposiums at different localities each year. Summaries of these events are downloadable from the library page of their web site.

C. Federal Wireless Users Forum (FWUF)  
<http://www.fwuf.gov>

The FWUF is an organization of federal government wireless users that organizes forums to discuss topics such as the communication needs of federal government wireless users, the latest wireless technologies, and interoperability. FWUF holds two to three workshops a year and various locations throughout the United States. Upcoming workshops are advertised on their web site. Membership is for federal wireless users only but their web site did say that state and local public safety officials are welcomed at the workshops. Summaries of past workshops and copies of the speakers’ presentations can be downloaded from their web site.



D. Advanced Generation of Interoperability for Law Enforcement (AGILE)

<http://www.agileprogram.org>

AGILE is a program sponsored by National Institute of Justice (NIJ). The purpose of the program is to assist state and local law enforcement agencies in providing interoperability across jurisdictional boundaries. This is accomplished by making interoperability information available to the law enforcement community. The web site has a page with articles, reports, and presentations on interoperability. This includes:

- Can we talk? Public Safety and the interoperability challenge

<http://www.agileprogram.org/documents/jr000243d.pdf>

- Guide to radio communications and interoperability strategies.

<http://www.agileprogram.org/documents/TE-02-02.pdf>

There are also pages on interoperability standards and grants and funding resources. Another web page is dedicated to information about and publications from the National Task Force on Interoperability.

E. National Telecommunications and Information Administration (NTIA)

<http://www.ntia.doc.gov/osmhome/osmhome.html>

NTIA is the federal agency that manages spectrum for the federal radio users. Their web site has a page dedicated to spectrum management. This web page has links to their rules and regulations, spectrum studies and reports, spectrum reform, and the Interdepartmental Radio Advisory Committee (IRAC).

F. Federal Government Operational Information

The following federal organizations have web sites with information on public safety activities that are of interest.

1. Department of Homeland Security (DHS)

<http://www.dhs.gov/dhspublic>

Provides grant opportunities, which are a focus for Wisconsin's Office of Justice Assistance.



2. Department of Justice (DOJ)  
Developing Multi-Agency Interoperability  
Communications Systems: User's Handbook  
[http://www.ojp.gov/odp/docs/acu\\_trp1000.pdf](http://www.ojp.gov/odp/docs/acu_trp1000.pdf)
3. Department of the Treasury  
A model policy for radio frequency management  
<http://www.treas.gov/regs/td86-02.htm>
4. National Institute of Justice (NIJ)  
State and Local Law Enforcement Wireless  
Communications and Interoperability: A Quantitative  
Analysis  
<http://www.ojp.usdoj.gov/nij/wireless/contents.html>

### 3.4 **State Governments**

Interoperability of various agencies on a single communications platform is a top priority in public safety communications. Many states have studied the interoperability issue and developed methods and systems for addressing interoperability. The following are a summary of states that have implemented or are in the process of implementing statewide communications system. The State of Wisconsin should contact each state listed below to establish a dialog; inquire about additional information not available on their web sites, such as existing plans and reports; and find out first hand the difficulties and successes each had or is going through:

- A. Capital Wireless Integrated Network (CapWIN)  
<http://www.capwin.org>

CapWIN is a partnership between Maryland, Virginia, and the District of Columbia with the purpose of developing an integrated wireless communications network for use by public safety agencies throughout the Washington, D.C. metropolitan area. The web site has pages for the goals, objectives, tasks, and timetable for the project. Newsletters and document on aspects of the CapWIN project are also available for downloading. Contacts for the CapWIN staff



can be found by clicking on the “contact” link on the left side of the web page.

- B. Alaska Land Mobile Radio (ALMR)  
<http://almr.state.ak.us/IndexServlet>

Alaska is in the process of building a Project 25 land mobile radio system for use by federal, state, and local public safety agencies that operate in Alaska. A project team is assembled for the ALMR. Email links can be accessed by clicking on the “contacts” link at the top of the web page.

- C. California’s Public Safety Radio Strategic Planning Committee (PSRSPC)  
<http://www.oes.cal.gov/Operational/OESHome.nsf>

The PSRSPC was formed to develop and implement a statewide communications system that enables interoperability with local and federal public safety agencies. From the above web link, click on “Information for Emergency Managers”, and then click on “Committees and Commissions.” There is a telephone number and email address at the bottom of the web page to contact the PSRSPC to find out more information about their interoperability activities.

- D. Colorado’s Digital Trunked Radio (DTR) Project  
<http://www.state.co.us/dtr>

Colorado has installed the first four phases of their 800 MHz Project 25 trunked radio system. There are three phases remaining. There is a telephone number and email address at the bottom of the web page to contact the DTR project team to find out more information about their radio system.

- E. Connecticut’s I-Call/I-Tac Interoperability Mutual Aid Radio System  
<http://www.ct.gov/oem/cwp>

Connecticut established a statewide 800 MHz conventional system for multi-agency interoperability. A link to the I-Call/I-Tac web page can be found from the above web site by clicking on “Communications”, and then clicking on “CT I-Call/I-Tac Interoperability Mutual Aid Radio System.” The telephone number and an email link to the communications department of Connecticut’s Office of Emergency



Management can be found by clicking on the “contact us” link at the top of the web page.

- F. Delaware Digital 800 MHz Statewide Trunked Radio System  
[http://www.state.de.us/pscomm/800mhz\\_radio\\_system.htm](http://www.state.de.us/pscomm/800mhz_radio_system.htm)

Delaware has completed implementation of their Digital 800 MHz Statewide Trunked Radio System.

- G. Florida’s Statewide Law Enforcement Radio System  
<http://sto.myflorida.com/slers/index.htm>

Florida is in the process of completing implementation of their statewide 800 MHz radio system. Contact phone numbers and email addresses for the Project Director and System Manager are located at the bottom of the web page.

- H. Indiana’s Safe-T Project  
<http://www.in.gov/ipsc/safe-t>

Indiana’s Safe-T system is a Motorola 4.1 Astro Smartzone OmniLink 800 MHz trunked voice and data system. The system is partially implemented. Completion is scheduled for 2006. Contact information for the Integrated Public Safety Commission staff can be found by clicking on the “Staff & Contact Information” link on the left side of the web page.

- I. Kentucky’s Multi-User Public Safety Communications System  
<http://www.state.ky.us/kirm/800mhz.htm>

Kentucky is in the process of implementing a statewide 800 MHz digital trunked radio system. Contact information for the Director of Network Services and the Co-Chair of the Wireless Committee is located at the bottom of the web page.

- J. Michigan’s Public Safety Communications System (MPSCS)  
<http://mpscs.com>

Michigan is currently operating a statewide 800 MHz Project 25 radio system. More information about the system can be found by contacting the Michigan Department of Information Technology at (517) 336-6623.



- K. Minnesota's Statewide System Plan  
<http://www.dot.state.mn.us/oec/statewide>

Various state agencies within Minnesota have developed a plan for implementing a statewide 800 MHz digital radio system. Contact can be established by clicking on the "Contact OEC" link on the left side of the web page.

Minneapolis  
<http://www.metroradioboard.org>

Minneapolis area Metro Radio Board is a region within the overall State system. Extensive information on standards, operations, and protocols is available.

- L. Montana's Statewide Interoperability Executive Council  
<http://www.discoveringmontana.com/itsd/policy/councils/SIEC/siec.asp>

Montana is in the process of implementing two Concept Demonstration pilot systems (Southwest Interoperability project and Northern Tier project). More information about the Concept Demonstration projects can be found by contacting the Communications Technology Manager at (406) 444-7370.

- M. Statewide Communications Alliance of Nebraska (SCAN)  
[http://www.scan.nebraska.org/strategic\\_plan.pdf](http://www.scan.nebraska.org/strategic_plan.pdf)

Nebraska's planning for interoperable communications is under the purview of SCAN. The project manager for SCAN is: Curt Beck, (402) 429-2406, [cbeck@nsp.state.ne.us](mailto:cbeck@nsp.state.ne.us).

- N. Nevada Communications Steering Committee (NCSC)  
<http://ncsc.nv.gov>

Nevada formed the NCSC for the purpose of planning, developing, and operating a statewide radio system for interoperability between the governmental and public safety agencies throughout Nevada. Email addresses for the members of the committee are listed on the web page.

- O. New York State Statewide Wireless Network (SWN)  
<http://www.ofc.state.ny.us/swn/index.htm>



The SWN will be a digital trunked system for voice and data transmission. New York received four vendor bids for their SWN. Contact information about the SWN can be found by clicking on the "Contact OFT" link at the bottom of the web page.

- P. North Carolina's Criminal Justice Information Network (CJIN)  
<http://www.cjin.jus.state.nc.us>

North Carolina has conducted studies for a statewide voice trunked network but lack of funding has hindered the project. Contact information about the CJIN can be found by clicking on the "Contact Info" link on the left side of the web page.

- Q. Ohio's Multi-Agency Radio Communication System (MARCS)  
<http://das.ohio.gov/itsd/marcs/index.htm>

The MARCS is a statewide 800 MHz digital trunked radio system. About a quarter of the system is installed. Contact information for the program administrator can be found by clicking on the "contact ITSD" link at the bottom of the web page.

- R. Pennsylvania's Public Safety Radio System  
<http://www.radio.state.pa.us/radioproject/site>.

- S. South Dakota  
<http://www.state.sd.us/dps/radio.htm>

South Dakota completed its digital Trunked radio system in 2002. Web site has link to a system description and operational information.

- T. Utah Communications Agency Network (UCAN)  
<http://www.ucann800.org>

UCAN consists of an 800 MHz SmartZone system that is installed in eight counties in Utah. Contact information for UCAN personnel can be found by clicking on the "Personnel" link on the left side of the web page.

- U. Virginia Statewide Agencies Radio System (STARS)  
<http://www.publicsafety.virginia.gov/Initiatives/STARS.cfm>



Contacts for the staff of the Secretary of Public Safety can be found by clicking the “Contact the Secretary” link at the bottom of the web page.

- V. Wyoming’s Public Safety Mobile Communications  
[http://ipc.state.wy.us/radio\\_index.asp](http://ipc.state.wy.us/radio_index.asp)

Wyoming is in the process of developing a statewide, VHF high band, Project 25 trunked radio system called WyoLink. The telephone and fax number for Wyoming’s Information Planning and Coordination office is at the top of the web page.

## 4.0 Public Safety Issues

### 4.1 Project 25 Standards

Project 25 is the standard that APCO and the public safety community have adopted as the common platform for two-way radio communications. The Project 25 standards and the trends in Project 25 systems are constantly changing. The following are resources for staying informed on Project 25:

- A. Project 25 Technology Interest Group (PTIG)  
<http://www.project25.org>

The PTIG is a group of public safety officials and equipment manufacturers that promote the development of and provide education on the Project 25 standards. The web site has a description of the Project 25 standard and compliance. There are also links to a discussion group and downloadable Project 25 related documents. PTIG can be reached by email at [Membership@project25.org](mailto:Membership@project25.org) for inquires about membership in the organization.

- B. APCO  
<http://www.apcointl.org/frequency/project25>

The Project 25 page of APCO’s web site has links to discussion groups, Project 25 related current events, and descriptions of the Project 25 standard.

- C. Telecommunications Industry Association (TIA)  
[http://www.tiaonline.org/standards/project\\_25](http://www.tiaonline.org/standards/project_25)



TIA is a non-profit trade association that develops standards for the telecommunications industry. TIA-102 is the standard for Project 25. TIA has a web page dedicated to Project 25. The web page has an overview of Project 25. The web page also has links to Project 25 related documents, news articles, web sites, and discussion groups.

## 4.2 **700 MHz Band**

The FCC reallocated 24 MHz of the 700 MHz band from television broadcast to public safety. As of this writing, the FCC has issued the sixth notice of proposed rulemaking for the 700 MHz band for public comment. The regional committees throughout the country are in the process of coordinating the 700 MHz frequencies for use in their regions. The resources below can be used for following this issue:

- A. Computer Assisted Pre-Coordination Resource and Database system (CAPRAD)  
<http://www.npstc.org>

CAPRAD is an Internet based tool for public safety officials and regional committees to use in planning for the 700 MHz frequency band. NPSTC is the developer of this tool. A link to the CAPRAD web page can be found on the above web site.

- B. FCC 700 MHz Public Safety Web Page  
<http://wireless.fcc.gov/publicsafety/700MHz>

The FCC's 700 MHz web page has downloadable documents on pending notices and notices of proposed rulemaking, scheduled dates of regional planning meetings, and information on each region.

## 4.3 **4.9 GHz Band**

The FCC has allocated a portion of the 4.9 GHz band for use by public safety for broadband transmissions to and from fixed locations on an incident-by-incident or short-term basis.

APCO has a web page dedicated to the 4.9 GHz band. The web page has a short description of the broadband technology for public safety. The web page also has links to information from the FCC,



PSWN, and NPSTC. The web page is located at [http://www.apco911.org/frequency/4\\_9GHz/4\\_9GHz.htm](http://www.apco911.org/frequency/4_9GHz/4_9GHz.htm).

#### 4.4 **800 MHz Consensus Plan**

Interference between the public safety agencies and commercial wireless services in the 800 MHz band throughout the country has jeopardized critical public safety communications. Nextel submitted a plan to the FCC, which involves relocating public safety agencies to a block that is contiguous with the 700 MHz band. Nextel has urged the FCC to start a rulemaking process on reallocation. The following resources provide information on the events surrounding the Nextel Plan:

- A. Dispatch Monthly Magazine  
[http://www.911dispatch.com/information/nextel/nextel\\_plan.html](http://www.911dispatch.com/information/nextel/nextel_plan.html)

The Dispatch Monthly Magazine web site has a web page dedicated to the Nextel 800 MHz interference issue. The web page has an acrobat file of the Nextel plan, a detailed list of actions that occurred on the issue, a graphical breakdown of Nextel's plan, and links to related resources. The web page is located at

- B. APCO  
<http://www.apco911.org/frequency/interference.htm>

APCO also has a web page dedicated to the Nextel Interference issue. This web page has a link to an update on the interference issue and a downloadable guide avoiding interference between 800 MHz public safety radio systems and commercial wireless systems.

## 5.0 **Vendor Products**

The following are vendors that provide cutting edge technology for Project 25 equipment and interoperability:

### 5.1 **EADS**

<http://www.eadstelecom-na.com/ps>



EADS is a radio system supplier with a base of systems throughout Europe. The company website explains their systems and how they are going to meet standards here in North America.

## **5.2 E. F. Johnson**

[http://www.efjohnson.com/systems/public\\_safety.asp](http://www.efjohnson.com/systems/public_safety.asp)

E.F. Johnson's web site has a description of their Project 25 conventional system and a link to their base station, mobile radio, and portable radio product line. The "News and Promotions" link at the top of the web page also has a link to a listing of public safety events that they will attend.

## **5.3 M/A Com**

<http://www.macom.com>

M/A Com's web site has links to their land mobile radio products, OpenSky network, and NetworkFirst network. The OpenSky web page also has a link to a listing of public safety events that they will attend.

## **5.4 Motorola**

<http://motorola.com/publicsafety>

Motorola's public safety web site has links to articles about Motorola related projects. There also links to upcoming public safety events where they will attend; articles on subjects such as standards, funding, and spectrum; and Motorola's fixed networks and subscriber units.

## **5.5 JPS Communications**

<http://www.jps.com>

The JPS Communications web site has links to their interoperability products and applications, articles about JPS Communications related projects, and upcoming public safety events.

## **5.6 Tait Radio Communications**

<http://www.taitworld.com>



Tait produces trunked radio systems in the 900 MHz band. The company plans to introduce a P25 compliant system in 2005.

## 6.0 Conferences & Seminars

### SafeCom

<http://www.pswn.gov/events.cfm>

Annual Calendar of events that SafeCom will attend is posted on its web site. SafeCom attendees are active participants, as well as, presenters at the events.

### Federal Wireless Users Forum

<http://www.fwuf.gov>

Holds two events annually in the spring and fall, which are open to state and local communications personnel.

The Spring FWUF Workshop focused on:

- Security
- Government Activities
- Commercial Wireless Services and Technology

### NTIA Office of Spectrum Management

<http://www.ntia.gov/osmhome/osmhome.html>

#### Training Seminar: Spectrum Management

The spectrum management seminar is an intermediate-level course designed to familiarize personnel in radio frequency spectrum management, presenting subject matter helpful to personnel new to spectrum management as well as experienced spectrum managers desiring to update their knowledge.

Conducted the week of July 19-23, 2004 (9:00 am to 4:00 pm) at the National Telecommunications & Information Administration, U.S. Department of Commerce, 14th St. and Constitution Avenue, NW, Washington, DC 20230.



## **APCO – Associated Public Safety Communications Officers**

<http://www.apcointl.org>

APCO sponsors regional and annual conferences. The annual conference is the **largest** and **most well attended** public safety communications event each year. Numerous presentations and training sessions are available. The associated trade show provides an opportunity to see the latest technology for public safety communications. The 2004 Annual Conference & Exposition is being held in Montreal, PQ, CA on August 8 – 12, 2004.

## **NENA – National Emergency Number Association**

<http://www.nena.org>

NENA holds an annual conference, a technical development conference, a 911 center operations conference, and sponsors critical issues forums (CIF) on topics such as: VoIP and E911.

NENA Annual Conference and Trade Show will be held June 13 - 17, 2004 in Tampa, Florida. Attendees choose from more than 90 educational sessions, and can learn about 9-1-1 products and services at the vendor Trade Show.

## **System Vendors**

**Federal Engineering** contacted the major systems vendors serving the State of Wisconsin. All vendors indicated a willingness to conduct in-house presentations, which would be tailored to topics of interest to the State.

## **7.0 Current Best Practices in PSMR**

It is helpful to see how a peer approached a project, and what they are doing to succeed. Selected for best practices such as planning, funding, operations, and governance. The following organizations are useful models for Wisconsin to study for strategy, experience and implementation guidelines.

- A. Colorado Digital Trunked Radio System  
<http://www.colorado.gov/dpa/doit/dtrs>



Colorado designed a multi-phase project to build a statewide digital Trunked radio system. The DTRS homepage gives project information that includes:

- Project Plan
- RFP
- Rules for funding and repayment
- Strategy to make radios affordable to system users and a
- Design for interoperability between 800 MHz DTRS and the existing VHF radio users

#### B. Indiana Project Hoosier Safe-T

<http://www.state.in.us/ipsc/safe-t/>

Project Hoosier SAFE-T is a statewide, interoperable, wireless public safety communications system for Indiana local, state, and federal first responders/public safety officials. The network infrastructure installation is underway. The project is scheduled for completion in 2006. Useful information on the homepage includes:

- Mission and Vision
- Project description
- Governance structure
- Project updates
- Implementation map
- FAQs
- Annual report and a
- Case study

#### C. Michigan Public Safety Communications System

<http://www.michigan.gov/mpscs>

The MPSCS web site is comprehensive. Particular attention should be paid to the "Membership" agreement. The agreement governs participation in the MPSCS for all agencies and jurisdictions. The agreement details the MPSCS:

- Purpose
- Communications services
- Membership obligations including cost
- Relationship management/dispute resolution and the
- State Advisory Board

The site also has information on the system technology, FAQs, history, and a membership map.

#### C. Minneapolis Metro Radio Board



<http://www.metroradioboard.org>

This is a very good example of a regional system that is mature and well organized. Its governance structure has the Metropolitan Radio Board, Technical Operations Committee, and the System Management Group. The website includes:

- Detailed standards, policies, and procedures
- Online meeting calendar and minutes
- An online forum for members
- FAQs
- Program evaluation reports and the
- Enabling legislation

## 8.0 Conclusions

There are many issues that public safety officials have to be aware before making decisions that affect the course to their public safety communications. Having a consolidated body of resources is an efficient way of tracking the numerous issues and technology trends that public safety officials must face. The resources described in this report should address technologies and trends that are prevalent in public safety communications.



## Appendix A

### *Additional Selected Readings*

#### White Papers, Reports, and Publications

Achieving Statewide Public Safety Wireless Interoperability

[http://www.nga.org/center/divisions/1,1188,C\\_ISSUE\\_BRIEF^D\\_5853,00.html](http://www.nga.org/center/divisions/1,1188,C_ISSUE_BRIEF^D_5853,00.html)

A Governor's Guide to Emergency Management

<http://www.nga.org/cda/files/GOVSGUIDEHS2.pdf>

Understanding wireless communications in public safety: A guidebook to technology, planning, issues, and management.

<http://www.nlectc.org/pdffiles/wireless2003.pdf>

Alternative frequencies for use by public safety systems

<http://ntiacsd.ntia.doc.gov/pubsafe/publications/alternativefrequency.pdf>

Why can't we talk? Working together to bridge the communications gap to save lives.

A guide for public officials.

<http://pulse.tiaonline.org/uploads/NTFReport.pdf>

Vermont and New Hampshire Pilot Implementations: A solution for public safety wireless interoperability.

[http://www.publicsafetywins.gov/PilotedSolutions/pdf/VT-NH\\_Lessons\\_learned\\_report\\_FINAL.pdf](http://www.publicsafetywins.gov/PilotedSolutions/pdf/VT-NH_Lessons_learned_report_FINAL.pdf)

