




MEMORANDUM

Date: October 5, 2011

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Pima County Wireless Integrated Network (PCWIN) Project Update**

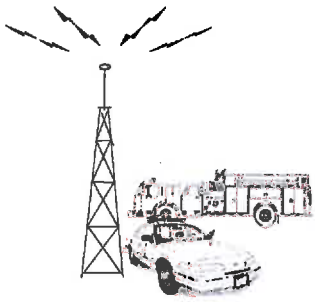
The attached document was prepared and distributed as part of our efforts to keep the PCWIN constituent agencies informed about the progress of the project. It was widely distributed by email last week to the chiefs of the various agencies, current and past members of the planning committees and other interested parties that have been following our progress. We have requested that the recipients share this information with other interested parties in their organizations, including future end-users of the radio system under development.

This report provides a high level overview of our current status. If you have any questions, or would like additional information, please contact Captain Paul Wilson, PCWIN Project Administrator, at 520.243.7203, or Paul.Wilson@pima.gov.

CHH/mjk

Attachment

c: Dr. John Moffatt, Director, Office of Strategic Planning
Captain, Paul Wilson, PCWIN Project Administrator



Pima County Wireless Integrated Network
 Putting Pima County in a Better State of Communications

PCWIN Current Highlights



Project Objectives

The Pima County Wireless Integrated Network (PCWIN) project has two primary objectives: (1) implementation of a modern, state-of-the-art, countywide regional interoperable public safety communications system, and (2) construction of a regional emergency communications and operations center. Although the project has proven to be a much larger undertaking than originally envisioned, much progress is being made to see that these objectives are met.

Countywide Regional Public Safety Communications System

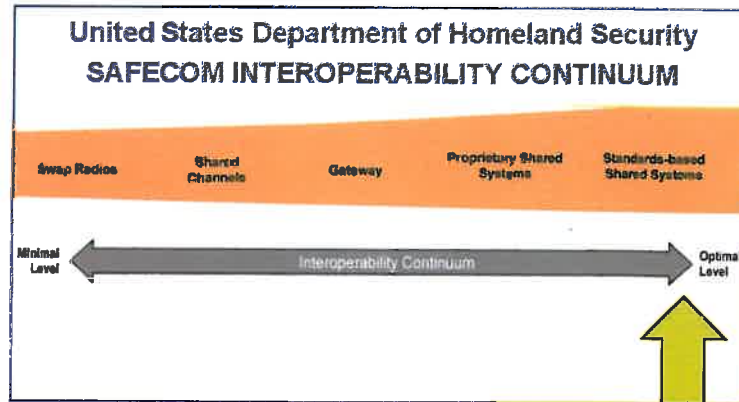
Pima County Ordinance No. 2004-18 specified minimum planning and performance standards for the project. A lengthy planning process included a user needs assessment, identifying and documenting legacy communications systems and their possible inclusion in PCWIN, comparison of available technologies to meet future needs, and development of a business plan. AECOM, a nationally recognized communications consulting firm, was hired to assist with the planning process and to produce conceptual designs for the radio system and dispatch facilities. They produced a comprehensive functional specification for the voice radio system, and technical specifications for a microwave system. Proposals for both systems were solicited and

contracts were awarded following a lengthy proposal evaluation process conducted by subject matter experts representing the largest agencies involved in the project.

Motorola Astro25 Digital Radio System
 Motorola Solutions has been contracted to provide an APCO P25 800 MHz digital voice radio

system and end user equipment, including mobile and portable radios, dispatch consoles, and mobile vehicular repeaters at a cost of approximately \$42 million. The system is scheduled to be cutover for end user operations beginning in the fourth quarter of calendar year 2013.

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The regional "shared system" approach will provide the participating agencies with the highest level of interoperability possible.

September 2011

Radio System Features:

- Simulcast design to meet stringent in building coverage requirements;
- Remote repeater sites for widespread mobile and portable on-street coverage;
- Conventional sites to provide fill-in coverage in those hard to reach areas of the county;
- Eight dispatch facilities;
- Robust design eliminating single points of failure;
- P25 standards based solution for optimal interoperability capabilities;
- Capacity to support user needs for twenty years;
- Over-the-Air Programming;
- Radio gateway and dispatch console patching capabilities; and,
- Motorola award winning equipment.



Golder Ranch Fire Station #370

(Continued from page 1)

The radio system is specifically engineered to eliminate single points of failure. Users should be confident that they will be provided a robust and reliable system. The system and end user equipment was specified to meet demanding end user technical and operational specifications.

Thirty public safety agencies are expected to initially put approximately 7,000 radios into service on the system.

Site Acquisition

For the past eighteen months, staff has worked diligently to execute contracts to make use of thirty-four communications and dispatch sites

on behalf of the project.

Acquiring permission to use some sites has been a difficult process. Staff has had to coordinate the approval of, and negotiate agreements with, numerous property owners including our partner jurisdictions, Arizona State Land Department, U.S. Bureau of Land Management, U.S. Forest Service, U.S. Fish and Wildlife Service, U.S. Air Force, GovNET, Inc., Tohono O'odham Nation, Tucson Electric Power, El Paso Natural Gas, and AZ Department of Public Safety, just to name a few. Twenty-four of the thirty-four sites are under contract, three other contracts are being executed, and we are close to agreement

on two others. We are continuing to work through the approval process for the use of Tumamoc Hill and sites on the Tohono O'odham Nation. There is a risk that the project may not get permission to use sites on the Tohono O'odham Nation, but we continue to promote the project through meetings with Tribal officials and communities.

In order to meet grant funding deadlines, we have begun to order equipment. Approximately \$6M of fixed network equipment has been received at the Motorola staging facility in Schaumburg, IL, and approximately \$2M of mobile radio equipment has been received and warehoused locally for future installation.

Microwave System

Trunked radio systems make use of a centralized computer controller at the radio system master site. End user radios must be in constant communication with the master site so group communications can be directed to appropriate system resources. Each communications site is connected to the master site via microwave or fiber optic network connections. Redundant network communications paths are incorporated into the PCWIN design to prevent single points of failure, for a highly reliable system. Network Infrastructure Corporation (NIC) is contracted to provide a microwave system manufactured by Ceragon Networks. Ceragon Networks is a global company with a large share of the global microwave communications market. They will be supplying advanced digital microwave technologies for our project. The majority of the microwave equipment has been ordered and will be received at a local staging facility this month.

**Putting Pima
County in a
Better State of
Communications**

[www.bonds.pima.gov/
wireless/index.html](http://www.bonds.pima.gov/wireless/index.html)

Communications Site Development

The most tangible signs of progress are the communications towers that we have begun erecting. A replacement communications tower has been constructed at Golder Ranch Fire Station #370. New towers have been constructed at Rincon Valley Fire District Station #1 and at the Oro Valley Town Government Complex. A new shelter and tower was constructed at Child's Mountain. Other site development work has been completed at four additional sites and construction contracts have been awarded for work at five sites owned by the City of Tucson.

To facilitate timely construction of sites, the project has contracted the services of three general contracting firms that specialize in communications site improvements.



Rincon Valley Fire Station #1

Radio System Funding

To meet the complete budgetary requirements of the project, Pima County Ordinance No. 2004-18 required public safety officials to seek supplemental federal funding to support the project. As a result of aggressive efforts, the County has been awarded approximately \$8.5M in federal grants to support equipment purchases; the City of Tucson has been awarded

\$1.1M that has either been contributed directly to the project, or has been used to expand the City's communications network; and, the Drexel Heights Fire District has been awarded \$828,000 to purchase mobile radio equipment. In all, the project is benefitting from approximately \$10.5M of federal grant awards.



Childs Mountain



Pima Emergency Communications & Operations Center

The PECOC facility will be located in a renovated building near 22nd Street/Alvernon Way. The project will breathe life back into an existing structure in the city core. The facility is

purposefully designed to meet the needs of multiple public safety agencies serving numerous jurisdictions for a minimum of twenty years. The primary tenants will be the Pima County Sheriff's Department Communications Section, consolidated dispatch operations for a consortium of county fire districts operated by the Drexel Heights Fire District, Pima County Office of Emergency Management & Homeland Security, and the County Emergency Operations Center (EOC). Enhancements to the County's EOC capabilities, including information sharing technologies and command center operations, will help to assure appropriate resource allocation during public safety emergencies. The dispatch operations will be co-located onto a single operations floor where public safety telecommunicators from the law enforcement and fire disciplines will work side-by-side in an arrangement that provides opportunity for greater coordination and information sharing. The tenant agencies will share common spaces, such as break rooms and training spaces.

A companion renovation project will be undertaken by the City of Tucson at its Thomas Price Service Center, to provide improved facilities for the City's public safety 9-1-1 and dispatch services. The County and City facilities will each be a backup to the other to significantly enhance continuity of 9-1-1 and dispatch operations. The City will renovate its facilities separate from, but in coordination with the PECOC

project using approximately \$4.4M of PCWIN bond funding.

The PECOC facility will be approximately 63,000 square feet and includes construction of a new building addition of approximately 13,400 square feet for the new EOC. The facility was designed to meet requirements for essential facilities. As a result, there are numerous security, building, and technology features that help to mitigate risks associated with the potential impact of natural, technological, and human-caused hazards.

The design for the PECOC facility has been completed by our architect, The Durrant Group, Inc. Building permits have been issued. On August 2nd, the Board of Supervisors awarded a \$14.5M construction contract to Sundt Construction, Inc. Construction will take approximately one year to complete. The Pima County Office of Emergency Management and the Emergency Operations Center are scheduled to move into the new facility in the first quarter of calendar year 2013. Dispatch operations may also relocate at that time if they are able to extend services from their legacy radio systems into the building. The Pima County Information Technology Department has acquired equipment from the City of Yuma, which will be configured and tested by Durham Communications to determine the feasibility of extending services from the County's E.F. Johnson radio system. Drexel Heights Fire District is undertaking a similar effort to extend services from their legacy radio systems for an early move-in.

PCWIN Executive Management Committee:

Clarence W. Dupnik, Chair
Pima County Sheriff

Chief Doug Chappell
Drexel Heights Fire District

Chief Jim Critchley
Tucson Fire Department

Chief Anthony Daykin
University of Arizona
Police Department

Chief Joseph Delgado
Tohono O'odham Tribal Police

Mike Hein, Director
Pima County Office of
Emergency Management

Chief Jeff Piechura
Northwest Fire District

Chief Daniel Sharp
Oro Valley Police Department

Chief Roberto Villaseñor
Tucson Police Department

Pima County Wireless Integrated Network

33 N. Stone Avenue, Suite 1810
Tucson, AZ 85701
Phone: 520-243-7200
www.bonds.pima.gov/wireless/index.html

John Moffatt, Project Director
Paul Wilson, Project Administrator
Tony Casella, Project Manager
Larry Sayers, Site Dev. Project Manager
Paul Panzica, Network Project Manager
Karl Ryan, Assistant Project Manager