3.1 Participating Agencies

3.1.1 Drexel Heights Fire Department

A. Current Environment

1. Operational

Drexel Heights Fire Department is located to the west of city of Tucson. Its department boundaries are surrounded by Saguaro National Park (West). The Drexel Heights Fire District was formed in 1954. It has four fire stations with thirteen front-line apparatus.

The Drexel Heights Fire Department provides dispatch service to eight fire departments: Drexel Heights, Green Valley, Arivaca, Rincon Valley, Tohono O'odham Indian Nation (part), Helmet Peak Fire District, Mt Lemmon and Elephant Head. These eight departments are generally in the southeastern quadrant of Pima County.

Each of the departments operates on its own channels. As a result the three dispatchers on duty must monitor seven primary channels. In addition each of the departments follows its own set of procedures.

Activity	2003	2004	2005
Wireline 911 Calls Received	11748	11248	12785
Wireless 911 Calls Received	415	1895	2297
Total 911 Calls Received	12163	12304	13754
Wireless Call %	1.8	12304	13754
Average 911 Answer Time	.05	.06	.06
Other Emergency Calls Received	923	3751	4068
Administrative/Non-Emergency Calls	9000	39730	43526
Total Incoming Calls	12776	55785	97676

Activity	2003	2004	2005
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched	**2688**	**2770**	**3318**
Emergency Medical Incidents	**10754**	**10501**	**13271**
Medical Pre-Arrival Instructions Given	**7500**	**7500**	**10000**
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

The dispatch center is staffed with two dispatchers and a supervisor on each shift. The dispatch center currently has an authorized staff of four supervisors, six full-time dispatchers, and fifteen part-time dispatchers. The number of full-time dispatchers will be reduced to three full-time dispatchers effective July 1. Currently, they only have two full-time dispatchers.

2. Functional

As noted above, the eight departments served by the Drexel Heights Fire District Dispatch Center are generally in the southeaster quadrant of Pima County. The Drexel Heights district is west of the City of Tucson. The San Xavier District of the Tohono O'Odham Nation, the Green Valley Fire District, Elephant Head Helmet Peak Fire District, and the Arivaca Fire District are all south of Tucson. The Rincon Valley Fire District and the Mt. Lemon Fire District are east of the City of Tucson

3. Technical

The dispatch center is located in a former SPRINT microwave facility. The district obtained the building in 1996, and it became the communications center in 1999. The equipment was upgraded in 2004.

They are currently using a Geo911 Computer Aided Dispatch (CAD) system and a Firehouse Records Management System (RMS). Zetron Model 4000 radio consoles are in use. The 911 and mapping systems are from Plant Equipment.

The Drexel Heights Dispatch Center is a secondary PSAP. 911 calls are transferred to them from one of the primary PSAPs. The dispatch center monitors seventeen different channels. Seven of those channels are primary channels (UHF and VHF conventional).

B. Positive Attributes of Current Environment

1. Operational

By operating a shared communications center, each of the districts is able to provide a higher level of service than they could if they operated their own dispatch center. This allows them to be more competitive in attracting and retaining dispatch staff.

2. Functional

While many of the districts served by the Drexel Heights District are not contiguous because of the large amount of public land in Pima County, the districts are close enough that they do provide mutual aid to each other. The dispatch center provides improved coordination

3. Technical

Because the facility was originally constructed as a telecommunications facility by Sprint, it generally meets the standards for communications facilities. The facility is equipped with a 50 kilowatt generator and has a 10,000 gallon water storage tank.

C. Desired Attributes of Current and Future Environment

1. Operational

Each of the departments served has its own policies and procedures. It would be advantageous to have one standard set of communications procedures that would apply to all of the departments.

2. Functional

The area is growing rapidly. Managing the impact of the growth on public safety is challenging.

3. Technical

Each of the departments has its own radio system. The dispatchers have to monitor seven primary channels. It is desirable to have fewer channels for dispatch communications.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Drexel Heights Fire Dispatch**
File Name:	-	**Drexel Heights Fire Dispatch Interview Record Final.doc**
Date of Interview:	-	**March 1, 2006**
Location of Interview:	-	**5030 S. Camino Verde**
Persons Interviewed:	-	**Steve Campbell, Battalion Chief** **Lisa Washburn, Supervisor**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Drexel Heights Fire District was formed in 1954. It has four fire stations with thirteen front-line apparatus.

2. The Drexel Heights Fire Department provides dispatch service to eight fire departments: Drexel Heights, Green Valley, Aivacca, Rincon Valley, Tohono O'odham Indian Nation (part), Helmet Peak Fire District, Mt Lemmon and Elephant Head.

3. Steve Campbell is a Battalion Chief for the Drexel Heights fire Department and is in charge of the Communications Center. Lisa Washburn is a Dispatch Supervisor.

Present Situation

1. The dispatch center is located in a former SPRINT microwave facility. The district obtained the building in 1996, and it became the communications center in 1999. The equipment was upgraded in 2004. They are currently using a Geo911 Computer Aided Dispatch (CAD) system and a Firehouse Records Management System (RMS).

Zetron Model 4000 radio consoles are in use. The 9-1-1 and mapping systems are from Plant Equipment.

2. The dispatch center monitors seventeen different channels. Seven of those channels are primary channels (UHF and VHF conventional).

3. The facility is equipped with a 50 kilowatt generator and has a 10,000 gallon water storage tank.

4. Drexel Heights has lost the contract for providing dispatch service to Green Valley effective July 1, 2006. They will be adding Arizona Ambulance to their list of clients.

5. The dispatch center currently has an authorized staff of four supervisors, six full-time dispatchers, and fifteen part-time dispatchers. The number of full-time dispatchers will be reduced to three full-time dispatchers effective July 1. Currently, they only have two full-time dispatchers.

Present Problems

1. The seven dispatch channels are a problem. In addition, each department wants to do things differently.

The draft of this record was sent to Steve Campbell on March 28, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address: Steve Campbell
Drexel Heights Fire Department
5030 S. El Camino Verde
Tucson, AZ 85735

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2. Dispatch Center Survey

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: **Drexel Heights Fire Distrct**

Contact Name: **Batt. Chief Steve Campbell** **Position:** **Manager**

Phone: **520-908-1099** **Email:** **Scampbell@drexelfire.net**

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement _____ Combined Fire/EMS X

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) _____

Other: _____

Please list the agencies and describe the geographic area served by your communications center

Drexel Heights Fire District: Tucson City Limits on the east, Tucson Mountain Park on the North, Tohono O'Odham Indian reservation on the South Three Points Fire District on the West

.

Green Vally Fire District: Pima Mine road on the North, Exit K-52 on I-19 on the South, Old Nogales Hwy on the east and Helmet Peak Volunteer Fire on the west.

Tohono O'Odham Indian reservation, San Xavier District: Nogales Highway on the east Pima Mine Road on the South, Drexel Heitghts Fire District on the North and US-286 on the West.

Rincon Valley Fire District: South is I-10 West is Colossal Cave road, Northern boundry is Old Spanish Trail East boundry is Marsh Station Road.

Mt Lemmon Fire Distreit: Village of Summerhaven and Mt. Lemmon Hwy.

Arivaca Volunteer Fire District: MP 25 on US-286 on the North, Amado Junction on the East US-Mexico border on the South Sassabe Hwy on the West

Helmet Peak Volunteer Fire District: Ariviaca on the South, Green Valley fire district on the East San Xavier District on the North Pima Copper mine on the West

_____

_____

911 Services Provided:

Primary PSAP _____ Secondary PSAP X

Basic 911 _____ Enhanced 911 X Wireless Phase I _____Wireless Phase II X

VOIP 911 _____

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 3

How many positions does your PSAP have that can answer 911 calls but not dispatch? 1

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Activity	2003	2004	2005
Wireline 911 Calls Received	**11748**	**11248**	**12785**
Wireless 911 Calls Received	**415**	**1895**	**2297**
Total 911 Calls Received	**12163**	**12304**	**13754**
Wireless Call %	**1.8**	**2.1**	**2.4**
Average 911 Answer Time	**.05**	**.06**	**.06**
Other Emergency Calls Received	**923**	**3751**	**4068**
Administrative/Non-Emergency Calls	**9000**	**39730**	**43526**
Total Incoming Calls	**12776**	**55785**	**97675**
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched	**2688**	**2770**	**3318**
Emergency Medical Incidents	**10754**	**10501**	**13271**
Medical Pre-Arrival Instructions Given	**7500**	**7500**	**10000**
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X

Call Answering (administrative) X

Call Answering (Other) _____
(i.e. after hours, etc.)

Traffic Monitoring _____

Dispatch Police/Law Enforcement _____

Dispatch Fire X

Dispatch EMS X

Dispatch City/County Services/DPW _____

Warrant/Article Entry/Confirm _____ Dispatch Animal Control _____

NCIC/state CIC checks _____ Other tasks performed: X

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	**Plant**	**Mars DBU**	**DBU 16 B**	**2001**
Answering Position Equipment	**Plant`**	**Mars Vesta**	**2.2**	**2001**
Map	**Pima County**	**Unk**	**Unk**	**Unk**
CAD	**Geo-911**	**Geo**	**2.5.98**	**March 2004**
Radio Console	**Zetron**	**4010 series**	**unk**	**Oct. 99**
UPS	**Indiviigual units**	**Varies**	**Varies**	**As needed**
Instant Recall Recorder	**Qwest**	**Qwest**	**unk.**	**Unk.**
Logging Recorder	**Dnamic instruments and Company**	**DI936Pro2DVD824P3r1**		**May 2000**
PBX				
Master Clock	**Net Time**	**unknown**	**unknown**	**March 2004**

9-1-1 System

Number of 911 lines3

Number of other lines7

ANI & ALI printers – number & location1

Abandoned call alarmGeo

Single Button Transfers yes

Ring down circuits yes

Telephone Service Provider Qwest

911 Service Provider Qwest

ALI Database Provider Qwest

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? Y

911 interface Y/N?Y

RMS interface Y/N? Y

NCIC/State interface Y/N?N

Mobile Data & AVL Y/N? Y

Logging Recorder

Channel Capacity24

Recording format (tape, DAT, VHS, etc.)DVD

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	**o**	**0**	**2**	**1**
Afternoon Shift	**0**	**0**	**2**	**1**
Night Shift	**0**	**0**	**2**	**1**

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	**5**	**4**				**1**	**1**
Actual FT	**2**	**4**				**1**	**1**
Authorized Part Time	**14**		**1**	**1**			
Actual Part Time	**14**		**1**	**1**			

OTHER SYSTEMS

_____

_____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

Dispatch _____

Fireground _____

EMS _____

_____ _____

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

_____ _____

_____ _____

_____ _____

_____ _____

What agencies do you need to communicate with but cannot?

PCSO	South Tucson
State Wildland	_____
Gateway	_____
Northwest	_____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Variations in radio frequencies and types, VHF-UHF our biggest concern

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document27

3. Documentation Provided

- Frequency Bands
- Antennas
- Frequencies
- Organizational Chart
- Radio station licenses
- Fire Rescue Dispatch And Channels

3.1.2 Marana Police Department

A. Current Environment

1. Operational

The Marana Police Department Communications section is responsible for answering 911 calls from people who live within the Town of Marana, as well as those who utilize their cell phone service in our area. The Communications Unit is part of the Technical Services Division of the Police Department. Its responsibilities include answering incoming 911 calls and providing communications service to the police units.

The Marana Police Communications Unit has an authorized staff of ten full time dispatchers. They are currently one person short of their authorized strength. The dispatchers work ten hour shifts with a minimum staffing of two. At times they have four on duty. They rotate shifts every three months.

Paul Ashcraft is the Lieutenant in charge of the Technical Services Division of the Marana Police Department. The division is responsible for both the Communications Unit and the Records Section. Sheila Blevins is the Communications Manager and is responsible for the operation of the Communications Unit. The Town's Information Technology Department has assigned a technician to support the police and courts on a full-time basis. Rick Brown is the technician currently assigned.

From an operational point of view, the most significant issue that needs to be resolved is the need for additional staff. The Communications Unit is the highest user of overtime in the Town.

2. Functional

The Town of Marana was incorporated in 1977. It has grown from an area of ten square miles in 1977 to approximately one hundred twenty square miles. The estimated population of Marana is 20,000. Marana, in the Avra Valley, was predominately an agricultural area. In the 1960's much of what had been the business district of Marana was removed to make way for Interstate 10. The Town is now one of the fastest growing areas in Arizona. Over the past ten years, population growth has averaged over forty percent per year.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received			
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

3. Technical

The Town constructed a municipal complex. The police department moved into its portion of the facility in February 2005. The dispatch center is currently equipped with four positions. Two more positions will be added during the next fiscal year.

The center has room for eleven positions. The communications center was moved from one end of the police wing to the other in order to accommodate future growth. Restroom facilities are at the opposite end of the building.

When the department moved into the new facility, they also switched to a Motorola 800 MHz digital trunked radio system. Motorola MCC 5500 dispatch consoles were installed as was Wrightline console furniture. They are using Positron 911 CPE.

The department is very dissatisfied with the MCC5500 consoles. They frequently don't hear units calling although other units in the field hear the unit. They have many other issues at the dispatch positions with the consoles. Motorola has indicated that the consoles cannot be upgraded to resolve the issues. Motorola is going to upgrade the consoles to the MCC7500 at its expense this summer.

In 2002, the Marana Police Department switched from the Pima County Spillman CAD system to a GEO911 system. GEO 911 has recently been purchased by IPC Information Systems.
There are CAD mapping issues. Most of the other PSAPs in PIMA County use the Plant Equipment Orion mapping product. There are compatibility issues between the Plant product and the Positron 911 CPE. In addition, the CAD system is a map-based system. They get weekly updates from the Town's GIS department but are unable to update the 911 maps.

The CAD system at times is slow. There are extra keystrokes required. It is easy to go to the wrong place in the system.

B. Positive Attributes of Current Environment

1. Operational

As noted above, the Town of Marana built a new municipal complex in 2005. They designed and built the facility to accommodate the anticipated growth in the community. The facility is well equipped. The effort has had a very positive affect on the staff and facilitates their providing service in a professional, compassionate way.

2. Functional

The Town of Marana was incorporated in 1977. It has grown from an area of ten square miles in 1977 to approximately one hundred twenty square miles. The adherence to a master-planning policy has helped the Town be in a good position to accommodate the anticipated population growth of over four hundred percent.

3. Technical

In conjunction with the construction of the new municipal complex, the Town also deployed significant technological improvements. The standards-based, digital, trunked radio system is the first in the area. A new 911 system and a new Computer Aided Dispatch (CAD) system were implemented at the time the new facility was occupied.

C. Desired Attributes of Current and Future Environment

1. Operational

As is the case in many communications centers nationwide, the recruitment and retention of qualified staff is a challenge

2. Functional

New positions need to be added to the center in a timely manner.

3. Technical

As with any move to new technology, there are a few issues that still need to be resolved. The new radio consoles don't function as anticipated. There are 911 mapping issues because the Town uses a different 911 system than most of the rest of the County.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Marana Police Dept Dispatch**
File Name:	-	**Marana PD Dispatch Interview Record Final.doc**
Date of Interview:	-	**February 27, 2006**
Location of Interview:	-	**Marana Police Department**
Persons Interviewed:	-	**Sheila Blevins, Paul Ashcraft, Rick Brown; Kim Dillon; Grace Neal-Jensen**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Town of Marana was incorporated in 1977. It has grown from an area of ten square miles to approximately one hundred twenty square miles. The estimated population of Marana is 20,000. Marana, in the Avra Valley, was predominately an agricultural area. In the 1960's much of what had been the business district of Marana was removed to make way for Interstate 10. The Town is now one of the fastest growing areas in Arizona. Over the past ten years, population growth has averaged over forty percent per year. It is anticipated that the population of the Town will exceed 100,000 by 2035.

2. The Town constructed a municipal complex. The police department moved into its portion of the facility in February 2005. The dispatch center is currently equipped with four positions. Two more positions will be added during the next fiscal year. The center has room for eleven positions.

3. The Communications Unit is part of the Technical Services Division of the Police Department. Its responsibilities include answering incoming 911 calls and providing communications service to the police units.

4. Fire service for the Town is provided by the Northwest Fire Protection District, which is dispatched by the City of Tucson's fire dispatch. Fire and Rescue calls received by Marana are transferred to the Tucson Dispatch.

Present Situation

1. Paul Ashcraft is the Lieutenant in charge of the Technical Services Division of the Marana Police Department. The division is responsible for both the Communications Unit and the Records Section. Sheila Blevins is the Communications Manager and is responsible for the operation of the Communications Unit. The Town's Information Technology Department has assigned a technician to support the police and courts on a full-time basis. Rick Brown is the technician currently assigned.

2. When the department moved into the new facility, they also switched to a Motorola 800 MHz digital trunked radio system. Motorola MCC 5500 dispatch consoles were installed as was Wrightline console furniture. They are using Positron 911 CPE.

3. In 2002, the Marana Police Department switched from the Pima County Spillman CAD system to a GEO911 system. GEO 911 has recently been purchased by IPC Information Systems.

4. The Marana Police Communications Unit has an authorized staff of ten full time dispatchers. They are currently one person short of their authorized strength. The dispatchers work ten hour shifts with a minimum staffing of two. At times they have four on duty. They rotate shifts every three months.

Present Problems

1. The police department is very dissatisfied with the MCC5500 consoles. They frequently don't hear units calling although other units in the field hear the unit. They have many other issues at the dispatch positions with the consoles. Motorola has indicated that the consoles cannot be upgraded to resolve the issues. Motorola is going to upgrade the consoles to the MCC7500 at its expense this summer.

2. The communications unit needs additional staff. They are the highest user of overtime in the City.

3. There is CAD mapping issues. Most of the other PSAPs in PIMA County use the Plant Equipment Orion mapping product.

There are compatibility issues between the Plant product and the Positron 911 CPE. In addition, the CAD system is a map-based system. They get weekly updates from the Town's GIS department but are unable to update the 911 maps.

4. The CAD system at times is slow. There are extra keystrokes required. It is easy to go to the wrong place in the system. There were other issues with the system. These had more to do with the records system than the CAD system.

5. There are still some issues with the radio system. There are some dead spots, particularly in the Ina and Orange Grove areas. These are high activity areas. In addition, transmissions are garbled at times. Part of this is the transition from a conventional analog system to a digital trunked system. Some users have a harder time than others adapting to the changes.

6. The Marana Police Department removed their mobile data system because of problems. They will be re-looking into it in the near future.

The draft of this record was sent to Lt. Paul Ashcraft on April 4, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address: Lt. Paul Ashcraft
Marana Police Department
11555 W. Civic Center Drive, Bldg B
Marana, AZ 85653-7091

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2. Dispatch Center Survey

None.

3. Computer System Checklist – Dispatching Operations

Instructions for Dispatching Operations Checklist

The Pima County community is in the process of reviewing the current communications systems. We are asking that the Dispatch Operations Departments participate in an information gathering process to assist in obtaining information regarding the existing Computer Assisted Dispatch operating systems in use in the community. The intent of this review is to determine the size and capacity required now, and in the future, and elicit responses concerning operational features. The existing systems may require enhancement for size and capacity; as well as the addition of new features and functions. The existing systems should be applied to standards created by the National Fire Prevention Association in their NFPA 1221. The NFPA 1221 provisions have been adopted by the Commission on Accreditation for Law Enforcement Agencies (CALEA) for CAD systems. These NFPA 1221 requirements as they apply to CAD systems are included at the end of this document for your review.

The checklist contains functions found in many, modern CAD systems. The goal is to identify the functions desired by the dispatch operations community. The checklist contains entries that apply to law enforcement, fire, EMS, and call taking. You should respond to areas that affect your operation.

We ask you to read closely the following checklist. This checklist contains response areas, which we are asking that you complete. This section may be returned on the original forms provided. Each item in this response document should be marked with one of the following responses:

C - Function is completely supplied by existing system (s).

A- Function is desired and would be an add–on to the current system.

M - Function is desired and could be provided with modifications to the existing software package.

NA- Function does not apply to this agency.

X - Function is not required or desired.

This part of the checklist should include a response to each element marked as above for additional information. In the event that additional information is required it can be provided

on a separate sheet and further describe the the specific requirement. Additional information should indicate the element number to avoid any ambiguity and should identify any additional comments or explanation required.

If there are other features, functions, or concerns that you have, please write them out in free form and simply attach them to your checklist.

We thank you in advance for your efforts.

Call Taking Functions

Incident Entry

C There shall be single format for entering event data, i.e., law enforcement and fire/EMS events use the same format.

The initial entry and subsequent modification of an incident shall be logged into a file that includes:

- CDate/Time stamp
- CUser ID
- CWorkstation location
- CInformation changed with before and after "image'

The system must accept the following data elements in a preformatted screen:

- CLocation of incident
- CAdditional location comments, independent from narrative information
- CIncident type for each type of service to respond
- CIncident type to create multiple types of service
- CAbility to override priority by dispatcher
- CReporting party name
- CReporting party address
- CReporting party phone
- CVehicle description
- CSuspect description
- CUnlimited text information (via repetitive entry and field scrolling functions)

The following facilities must be supported:

- CAddress verification based on street name (Soundex) and street address number block range. Soundex can be activated/deactivated by system administrator.
- CAddresses can be entered into the system by street intersection or common place names.
- CAddress verification produces appropriate Fire district; Law Enforcement beat, etc. and recommends most appropriate unit to dispatch based on:

CType of call
CUnit availability
CResponse zone proximity
CDispatcher can override unit recommendations.
CDispatcher can override response zones.
CUnits can be relocated to appropriate stations.
CLocation verification occurs via function key prior to saving.
MResponse to location verification choices is not required prior to entry of additional event
CAbility to freely move directly to any field in input form.

Incident Type Codes

CIncident type codes must be validated during incident entry.

CThere must be the ability to display selection list for incident types.

CThere must be the ability to select incident type from a displayed list, with data automatically inserted in field.

The incident type code must automatically provide the following information:

XDescription of incident type
CPriority level or requirement for manual specification
ADispatch-to-on scene timeout value
AOn scene-to-next status change timeout value specific or non-standard incident routing

CThe above information must be modifiable on-line.

E-911 (ANI/ALI)

CThe CAD system must interface directly to the telephone company E-911 system.

CInformation from E-911 (calling number and service address) must appear automatically on the incident entry screen without specific operator action.

CThe E-911 information must be accepted into the dispatch information by dispatcher pointing device or function key action.

CThe E-911 information display must be able to capture all information as provided by the telephone company backup display.

CThe E-911 location can be utilized without specific operator action, unless manually overridden.

MIf the E-911 information is overridden, it must still be recorded in the incident record for later review.

CThe E-911 location information must be validated using the geographic files on the CAD system, which are received from the Public Safety geo-database.

CThe operator must be able to answer the E-911 telephone call prior to displaying an incident input form; the E-911 information must be automatically displayed when the entry form is displayed and continuously able to be recalled until a new call is answered or cleared by operator.

Geographic File Interface

CThe system shall provide the capability to use longitude/latitude for designating geographic locations. This functionality shall provide an accuracy of +/- 125 meters according to the latest FCC Rules 94.102 and 98-245.

CAll locations must be entered in "free form", without requiring the entry of data into specific data fields in the input form.

CThe system must support the entry of apartment number, lot numbers and so forth as part of the "free form" location field.

CPartial ("half") addresses must be supported.

CPremise address modifiers must be supported (e.g., 432B MAPLE ST Apt XXX).

CPremise address entry must result in a display of both low and high cross streets.

CIntersection entry must result in a display of the premise addresses of both streets at the intersection.

CCommon place name entry displays equivalent address or establishment number/Identifier.

CThe system must have a "near match" capability in order to identify street or common place names for which no exact match is found in the geo-file.

CA minimum of two characters is needed to result in a street or place name selection list.

CThe "near match" capability must be based on a dynamic algorithm to match names; it shall not require a predefined list of misspellings.

CThe system must support an "alias" function to permit use of alternative names such as "10th" for "Tenth", "JFK Dr" for "John F. Kennedy Drive", etc.

CStreet name choices for intersections must be presented only for streets, which physically intersect.

CThe operator must be able to enter common place locations by specifying any word in the place name.

CThe operator must be able to verify the address at any time during incident entry process by function key request.

CThe operator must be able to override the information from the geographic file during incident entry.

MThe system shall produce a report of all locations entered as operator overrides.

CThe operator must be able to change any location entered and/or validated at any time prior to final incident acceptance by simply re-keying the location into the input form.

CAny call taker or dispatcher must be able to update an incident location at any time following incident acceptance.

CWhenever a location is updated, a record of all prior locations, which have been entered, must be maintained in the incident record.

CThe system must automatically route the incident to the dispatcher responsible for the location entered but without interfering in any way with multiple dispatchers working the call simultaneously.

MThe dispatcher shall be notified of address jurisdiction.

Priority Incident Interrupt

CThe operator must be able to interrupt and suspend an incident that is being entered in order to service an incident, which has a higher urgency.

CThis interruption can be made at any time by function key.

CAn indication shall be displayed to the call taker to indicate the number of incidents suspended.

CThe system administrator can set the limit to the number of calls, which can be suspended.

CFollowing the entry of the high priority incident, the system must automatically resume processing of the interrupted incident(s) when recalled by the operator.

Fast-Transfer Incident Entry

CA critical incident can be entered at any time following the entry of location and type information. A fast-transfer incident can be entered with no more keystrokes than needed for normal entry.

CFollowing a fast-transfer entry, the input screen must be prepared to allow immediate entry of additional information simultaneously by multiple operators.

CThe dispatcher must be notified that the call taker is entering additional information.

CThe fast-transfer function can be repeated any number of times during the entry or supplement of an incident.

Incident Transfer to Dispatch

CThe system must automatically route a new incident to the appropriate dispatch workstation(s) depending upon the location of the incident and the call classification (Law Enforcement, Fire, or EMS).

MThe operator must be able to override the automatic routing of incidents by location for routing to a specific dispatcher(s) depending upon type of incident.

MAn incident can be automatically routed to a predefined dispatcher(s) for special incident types.

Duplicate Incident Detection

CDuring incident entry, the call taker shall be notified of any active incidents near the one being entered but this shall in no way interfere with the normal call-taking functions.

CThe duplicate detection process shall be advisory only; the operator shall determine whether the new call is a duplicate, and whether to proceed with this transaction.

CThe call taker must be able to display the complete record of any potential duplicate by function key without interrupting current data collection process.

CThe duplicate incident can be supplemented with the new information by function key request but this shall in no way interfere with the normal call-taking functions.

CIf an incident is entered which is later determined to be a duplicate of another incident, the dispatcher must be able to cancel the incident.

Premise and Hazard Information

CThe system must contain a file containing data stored by location. This data can include information on threats against public safety officials, hazardous substances stored, locations of invalids, etc.

CThe hazard file must be automatically checked during incident entry.

CA permanent notification of the presence of hazard information must be recorded in the incident history.

MThe actual text of the hazard record shall be stored in the incident history record only for specific types of hazards.

MHazard file records must have a purge cycle, which prevents access after a preset date or time period.

MHazard file records can be entered for permanent retention.

MMultiple hazard records can be entered for a single location.

MThe dispatcher must be able to display all hazard data within a specified distance from a unit or incident.

Prior Incident Information

CAll prior incident activity on file at an incident's location must automatically be displayed.

CPrior incident recording must not require operator action and shall not interfere with the normal functions of the operator.

CA warning must be displayed for recent prior incidents within a time span designated by a user configuration.

CDetailed prior incident information must be accessible by function key.

Entry of Non-Dispatch Calls

CThe system must have the ability to record incidents where no dispatch occurs.

CNon-dispatch calls must be entered in the incident history file, and shall be accessible via all standard incident access functions.

CAn incident entered in this fashion can be later reopened and dispatched normally with a date/time stamp.

Entry of Completed Calls

CThe system shall allow for the entry of calls that have been previously handled but not yet entered into the system, due to conditions such as system unavailability.

CCompleted calls of this type can be activated for the purpose of unit assignment.

Multiple Types of Service

CThe call taker must be able to enter a single call for service, specifying multiple types of service.

CCertain incident types must automatically generate the appropriate multiple types of service responses.

CThis process must not require separate actions for each type of service.

CAny supplementary information that any call taker adds to any incident entered in this fashion shall be automatically added to each related incident.

Dispatching Functions

Pending Incident Display

CA list of pending incidents must be available for continuous display to the controlling dispatcher.

CIncidents shall be listed according to priority and entry time.

CThe dispatcher must be warned whenever a new or updated incident is added to the pending incident display.

CAny position can display all pending incidents, or only those for one or more specific dispatch positions.

MThe system must provide an indication in this display, which indicates which incident, is currently being reviewed by the dispatcher.

MAt any position display of pending incidents shall show which ones are currently being reviewed by the responsible dispatchers but shall not interfere in any way with the normal function of any workstation.

The system must display, at a minimum, the following information for each incident in the pending incident display:

CIncident number
CIncident type code
MDescription of incident code
CPriority level
CNumber of minutes waiting
CIncident location
CDispatch control area
CLaw Enforcement beat or fire station as applicable
CHazard warning and complete hazard information
MPreassigned unit identifier

The system must support a visual warning, set by the system administrator, for incidents in the pending list or while being viewed by dispatcher or call taker when any of the following special conditions occur:

MIncident is being viewed by controlling dispatcher.
CWait time has exceeded allowable maximum (by priority).
CSupplementary information has been added to incident.
CIncident cancellation has been requested.
CIncident location, type or priority has been changed.
MPreassigned unit is unavailable for assignment to incident.
CPending incident timeout warning must be updateable by dispatcher.
CNone of the visual warnings listed above shall interfere in any way with the normal function of the workstation.

Incident Control

CThe dispatcher shall have the flexibility to process pending calls in any sequence.

CAn incident may be worked by multiple positions.

CThe dispatcher may select calls for dispatching by incident number or unit number.

CThe dispatcher may select calls for dispatching by mouse reference.

CThe system must automatically present calls for dispatch in priority sequence, sorted by time

CThe dispatcher must be able to quickly request the display and unit recommendation for any specific call at any time.

CThe dispatcher may request the display of a pending call by pointing to it with a mouse or pointing device.

CThe dispatcher must be able to share the control of any pending incident with another dispatcher at anytime.

CAny dispatcher can dispatch units to another dispatcher's incident.

CAn incident can be dispatched directly from the pending incident monitor without redisplay after initial review.

CA unit may be assigned to a pending incident by pointing to the unit and the incident with a mouse.

CThe dispatcher must be able to place any call on "hold" with a unique visual indicator to show hold status, placing it back in the pending queue, so that the next call in sequence can be displayed.

Incident Review

The system must provide a mechanism whereby the dispatcher can review a pending incident prior to dispatch. This review must show critical incident information, including:

CJurisdiction
CIncident number
CIncident type or nature code
MDescription of incident type
CInitial incident location
CCurrent reported location
CAny prior reported location
CName, address and telephone of reporting party
CHazard information associated with incident location
ASummary of prior incidents at the same location
AWarning of recent vs. old prior call
CWarning that incident is in a different area of control
CSuspect name and vehicle information
CLaw Enforcement beat, fire station, EMS post as applicable
CRecommended unit(s) for dispatch
CIncident narrative information
CAll prior unit assignments and status changes
CTimes of all previous status changes

CAutomatic scrolling must be utilized in cases where the entire event cannot be completely displayed, showing the most recent information.

CManual line-level scrolling must be supported in addition to paging of displayed incident.

CThe displayed incident must notify viewing party of update information while the incident is displayed.

CViewing party should have ability to update incident with new information with a single keystroke.

CA pending incident must be able to be displayed by command or by pointing device (e.g., mouse, and trackball).

Law Enforcement Unit Recommendation

Units must be recommended dynamically using, at a minimum, the following criteria:

MJurisdiction
MIncident location
MIncident type
MIncident priority
MType of units required
MNumber of units required
MCurrent unit status
MBeat assignment
MNearest adjacent beat

MUp to four Law Enforcement units shall be recommended but not required, in order of decreasing suitability, based upon the above criteria.

M"Adjacent beat" shall be determined by incident location within the primary beat.

MThe system must indicate the recommended number of units to respond according to the type of incident.

CThe dispatcher must be able to override the recommended units at any time.

CUnit recommendation criteria must be user-definable by incident type and priority.

MUnit recommendation criteria must be modifiable on-line at any time.

CA unit's type must be able to be changed during its shift, with appropriate change to unit recommendation (e.g., from a one-person to a two-person unit).

MUnit recommendation plans must be able to be changed dynamically.

CUnit beat assignment must be able to be designated when a unit comes on-duty.

Fire Unit Recommendation

Units must be recommended dynamically using a fire "run card" using, at a minimum, the following criteria:

N/A Our Agency does not currently utilize the Fire Dispatch module, but our CAD system is equipped with it.

Jurisdiction
_____Incident location
_____Incident type
_____Current unit status
_____Number of units required
_____Type of units needed
_____Fire station location

_____Any number of units can be recommended at a time.

_____Units shall be recommended according to current fire station assignment, considering current unit cover and move-up assignments (unlimited).

_____In the event of greater alarms, unit recommendation must take into account units already assigned, providing the necessary equipment to satisfy the greater alarm requirements.

_____Unit recommendation criteria must be modifiable on-line at any time.

_____Standard move-ups must be displayed upon request.

_____Multiple move-ups can be entered via a single command.

EMS Unit Recommendation

Units must be recommended dynamically using a EMS "run card" using, at a minimum, the following criteria:

_____Jurisdiction
_____Incident location
_____Incident type
_____Current unit status
_____Number of units required
_____Type of units needed
_____EMS station location

_____Any number of units can be recommended at a time.

_____Units shall be recommended according to current EMS station assignment, considering current unit cover and move-up assignments (unlimited).

_____Fire units that have EMS capacity will be utilized in accordance with their availability and EMS classification.

_____Unit recommendation criteria must be modifiable on-line at any time.

Dispatch and Control of Units

_____Recommended units must be dispatchable with a single keystroke.

_____The dispatcher can alter recommended units.

_____Recommended units can be selected by mouse reference.

_____Units must be able to be assigned to a pending incident directly on the pending incident list, without requesting detailed incident display.

_____Units cannot be assigned without initial detailed incident display and review.

_____There must be no limit to the number of units, which can be assigned to single incident.

_____Any number of incidents must be able to be preassigned to a single unit.

_____A unit or units may be assigned via pointing device without keyboard entry.

Status history maintained for each unit must include:

_____All status changes
_____Current Unit location
_____Date/time of all unit status changes, recorded to the nearest second with
_____Alarms specified by default or by each dispatcher if desired.

_____Timers can be set by type of call or by dispatcher discretion. Officer numbers for each unit assigned

_____Officer names for each unit assigned

_____Workstation identifier making each status change

_____Operator identifier making each status change

_____Operator name making each status change

_____Each dispatcher can select units displayed.

Required Status Keeping Functions

_____Unit status changes shall be entered as single transactions, specifying new status and one or more units.

_____Unit status change may be entered by mouse or keystroke, selecting unit and desired status.

_____Unit status changes must not require the display of an incident record.

_____Comments can be added to any unit status change, and will be recorded with the incident's and unit's permanent record.

_____Previous status change commands can be displayed for review and/or correction and reentry by function key request.

_____The unit identifier can be entered prior to the status code.

_____Status may be able to be entered by referencing the unit display and a status code via pointing device or keyboard.

_____The system must support the following incident control and unit status command functions.

_____Dispatch one or more units to an incident

_____Assign backup units to an incident

_____Replace one unit with one or more other units

_____Preempt a unit to service a higher priority call

_____Place one or more units onscene

_____Place a unit available-on-scene (onscene but available for unit recommendation and assignment)

_____Place a fire unit available-on-radio or pager

_____Place a fire unit available-in-quarters

_____Place an EMS unit available-on-radio or pager

_____Place an EMS unit available-in-quarters

_____Add information to an incident

_____Add information to a unit's history record, whether available or assigned to an incident

_____Enter pursuit information from several workstations concurrently

_____Clear a unit back to service

_____Change unit location while still on call

_____New unit location may be validated against on-line geofiles

_____Reset unit back to incident location without requiring reentry of original location

_____Initiate a traffic stop or onview, resulting in an automatic license plate inquiry by the system

_____Unit location at a traffic stop is validated against on-line geofiles

_____Initiate a subject stop

_____Indicate that the personnel are out of vehicle and must be contacted via hand-held radio or other means

_____Request initial case number for an incident

_____Request additional case numbers for a single incident

_____Specify a unit timeout-warning interval

_____Change the beat responsibility of a unit

_____Place a unit on duty and available for dispatch

_____Enter final disposition or incident type

_____List all nearby hazards within a specified distance

Unit Definition and Control

_____Any combination of up to _____letters and numbers can be used as unit identifiers.

_____Unit type, shift, patrol area or other similar information need not be encoded as part of the structure of the unit ID.

_____An on-duty unit's identifier can be changed while keeping a continuous unit history record (does not require units to be logged off duty).

_____An on-duty unit's recommendation rules can be changed without requiring unit log off.

Transfer of Unit and Incident Control

_____System must have a command allowing designation of a new primary unit on an active call.

_____The control of any on-duty unit can be passed from one dispatch position to another, regardless of unit status.

_____Any incident can be transferred from one dispatch position to another, regardless of incident status.

_____Any dispatcher must be able to "take over" the dispatching and control of any incident at any time from any workstation without interrupting the original dispatcher.

_____The dispatcher must be able to assign another dispatcher's unit(s) to any incident.

_____In the above case, current unit status information shall be displayed on both the original unit's dispatcher's and the requesting dispatcher's displays.

Out of District Display

_____Any dispatcher must be able to display dynamic unit and incident status for any dispatch control area in addition to the areas controlled.

Available and Active Law Enforcement Unit Displays

A dynamic display shall be provided for all units that are available for dispatch, which shows:

CJurisdiction
CUnit identifier
CUnit assigned but available for dispatch
CSpecial unit type or classification
COfficers out-of-vehicle (on portable radio)
CUnit scheduled on-duty prior to confirmation of status
CMDT equipment status

A dynamic display shall be provided for all units assigned to incidents, which shows:

CUnit identifier
CCurrent unit status
CMDT equipment status
CTime since last unit status change
CIncident number
CIncident type and priority
CIncident type description
CUnit beat
CUnit control area
MAn indication if the unit is operating out of its normal area
MAn indication if the unit was assigned as a backup unit

CA warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

CA warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented. This warning shall be differentiated from the warning in the previous item.

CUnit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

CUnit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active Fire Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

N/A Jurisdiction
_____Unit identifier
_____Unit status
_____Unit station
_____Unit MDT equipment
_____Units are ordered by associated station.
_____Units can be ordered by equipment type.

_____The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

_____Jurisdiction
_____Incident number
_____Incident type
_____Current alarm level
_____Incident working time
_____Firebox number [or appropriate geographic data]
_____Incident location

With each active incident, the status monitor must list assigned units, in sequence by alarm level, showing:

_____Jurisdiction
_____Unit identifier
_____Unit status
_____Time since assignment
_____Time since last unit status change
_____Any covering unit
_____Unit location if different from incident
_____Notes or comments associated with a unit

_____Units shall be grouped by priority level at time of assignment.

_____Unit status monitor displays must be useable by color-blind dispatch operators.

_____A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

_____A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

_____Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

_____Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active EMS Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

_____Jurisdiction
_____Unit identifier
_____Unit type
_____Unit status
_____Unit station
_____Unit MDT equipment
_____Units are ordered by associated station.
_____Units can be ordered by equipment type.

_____The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

_____Jurisdiction
_____Incident number
_____Incident type
_____Incident working time
_____Incident location

With each active incident, the status monitor must list assigned units, in sequence by priority level, showing:

_____Jurisdiction
_____Unit identifier
_____Unit status
_____Time since assignment
_____Time since last unit status change
_____Any covering unit
_____Unit location if different from incident
_____Notes or comments associated with a unit

_____Units shall be grouped by priority level at time of assignment.

_____Unit status monitor displays must be useable by color-blind dispatch operators.

_____A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

_____A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

_____Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

_____Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Incident Record Keeping Requirements

The system must keep date/time stamped records of all incidents passing through the dispatch process. These records shall contain:

CJurisdiction
CIncident number
CCase number(s)
CIncident location
CInitial and final incident type
CFinal disposition
CTime of initiation (time of phone call)
CTime of incident entry
CFor each assigned unit, the time of dispatch and all status changes
CAll data taken by the call taker
CAll information subsequently added
CName and ID number of personnel in each unit assigned
CName and ID number of each workstation operator who enters any information or status concerning the incident.

CThe system must allow the entry of an unlimited amount of supplementary data about an incident.

CA permanent audit trail must be maintained for all information recorded with an incident, whether or not that information is later modified or deleted.

Assignment of Case Numbers

CA sequence of "case" numbers must be kept independently from the number assigned to each incident and jurisdiction.

CEach agency can have multiple series of case numbers, case number format being determined for each agency by system administrator but case numbers can be automatically assigned by agency and incident type.

CCase numbers shall be assigned to an incident by dispatcher request.

CA single incident can have multiple case numbers.

Incident Record Access

Incident history information shall be displayed or printed in chronological order upon command, based on a search of the file. This search will not interfere in any way with the normal function of the workstation. It must be possible to search the file on any combination of the following criteria:

- CJurisdiction
- CIncident number
- CPrimary case number
- CAny secondary case number
- CDate and time range
- CIncident type
- CIncident priority
- CReporting district or box number
- CLaw Enforcement beat/fire station/EMS district as applicable
- CDispatch control area
- CJurisdiction within an agency
- CInitial incident location
- CFinal incident location
- CAny intermediate incident location
- CType of location reported (premise, intersection, place, etc.)
- CPrimary unit assigned
- CFinal disposition
- CExistence of any case number
- CCall entry or dispatch workstation identifier
- CCall entry or dispatch operator identifier
- CAny telephone number recorded with incident
- CAny name recorded with incident
- CAny personal distinguishing identifier entered with the incident
- CAny vehicle license number recorded with incident
- CAny vehicle color or descriptive code recorded with incident

Any operator-selected time range between:

CIncident initiation
CIncident entry
CInitial dispatch
CFirst unit arrival
CIncident closing

CIncident history inquiries must access pending, active and closed incidents using identical facilities for selection and display.

CAll prior calls on file at the specified location can be requested for immediate display.

CAll operators who had entered or updated an incident record shall be listed as part of the standard incident display by both operator name and ID.

CAll officers who respond to an incident shall be listed as part of the standard incident display.

Unit Record Keeping Requirements

CJurisdiction

COfficer name and badge number at time of incident.

CThe system must maintain all activity by unit identifier, agency, officer name, and badge number at the time of the incident.

CThe system shall be able to display a complete sequence of unit activity for any selected shift or time period, regardless of whether such activity was associated with an incident.

CThe unit identification can be changed during a unit's shift without affecting the unit's history record.

CThe unit's history record must be accessible by the current or any previous unit identification used during the shift.

CThe unit's history record must be accessible by the current or any previous officer number assigned.

Closed Incidents

CNo incident shall be closed until a call-taker, dispatcher, or supervisor has issued a command to do so.

CAny closed incident can be reopened for further activity, without assigning a new incident number.

Supervisory Status Display

CDynamic status information from one or more dispatch workstations can be displayed at a supervisory workstation position upon request without affecting the status monitor of that workstation or of any other workstation.

CSupervisory status displays must show the same warnings and indications, such as a unit overdue, incident updated, and so forth, as are displayed on the responsible dispatch workstation.

Street Closure Information

AThe system must have the ability to display street closure information upon operator request.

Fire Hydrant Information

XThe system shall display a list of fire hydrants near any specified incident or unit upon request; the list shall be in order by distance from the specified incident or unit.

XThe fire hydrant list must show the location, current status, flow and other relevant information.

Mobile Data Terminal (MDT) Interface Functions

The system must allow the following types of transactions to and from Mobile Data Terminals:

AMDT logon with unit number and ID numbers of occupants.

AAuto unit entry into CAD system as in service but not yet available until unit dispatcher places unit in available status.

AMDT logoff and unit removal from CAD system only if a unit is in "available" status.

ASend dispatch orders to MDT.

Accept MDT responses for:

AAcknowledge dispatch order receipt
AEn route to dispatch
AAt scene
AAvailable at scene (with comment)
AIn service
ABusy (with comment)
AOut of service (with comment)
AChange status of the unit to any valid CAD status

AAccept MDT request for report number on current dispatch and transmit number to MDT.

AAllow MDT to initiate onview and traffic stop. Information on a vehicle to submit auto queries to ACIC/NCIC system.

AAllow MDT to attach responses from ACIC/NCIC system to incident displayed.

AAllow MDT to run full ACIC/NCIC queries through formatted screens.

AAllow MDT to send messages to dispatcher or other MDT's.

ASupport MDT emergency button to notify the dispatcher of a peril via a single keystroke.

Notify MDT of changes in dispatch including:

AChange in dispatch data, status, or comments
ACancel from dispatch

ASend premise data, HazMat information, hydrant locations, and officer safety alerts to MDT along with dispatch orders, based on user-defined criteria and type of unit.

AAllow MDT to request static status of individual or group of units via command. supervisory function.

ADifferentiate a unit with MDT from non-MDT unit on dispatcher status monitor and working screen.

AAllow MDT to add comment to working CAD incident.

AAllow MDT to enter disposition for current dispatch.

AAllow commands to resend MDT dispatch to terminal without updating time stamps in the event the unit did not get clean data the first time.

AHave system automatically send MDT dispatch orders through standard dispatch command without requiring a dispatcher to know if a unit has a MDT or use different command to dispatch to it.

AAllow MDT to make CAD history inquiries such as unit history, dispatch history, address history, and any other standard online query to CAD system such as premise data, notes file, etc.

ASystem must automatically format data sent to MDT to fit the screen on MDT.

ASystem must allow a CAD command, which will resync MDT availability (Logon status) after prolonged down time. Such command should poll the MDT controller to find out which units are logged in.

ASystem must provide MDT security whereby user and/or MDT terminal ID may restrict specific commands.

ASystem must disallow MDT commands from any MDT, which is not correctly logged into dispatch system.

General System Functional Requirements

This sub-section addresses certain general functional requirements, which are not conveniently grouped as Call Taking or Dispatching functions above.

Multiple Agencies

For both present requirements and future flexibility, the system shall support multiple jurisdictions and multiple agencies. This means that the system must accommodate at least the following facilities:

CRouting of calls to appropriate dispatcher according to jurisdiction and agency.
CDuplicate street names, distinguished by city name and/or postdirection and/or jurisdiction.
CIndependent incident numbering systems by jurisdiction and agency
CSummary and management reporting by jurisdiction and agency

Security

CSystem shall provide method for dispatcher to change assignment (such as shift change, etc) without logging out.

COperator sign-on shall require the entry of both an operator identification code and a private password.

CThe password must not appear when entered.

CA record of invalid password attempts shall be recorded after a preset number of allowable retries.

CTransaction security can be limited by workstation type or location, in addition to operator password.

CThe acceptance of user sign-on must result in the screen being displayed with the user-selected colors and layout.

On-Line Help

AThe system must support on-line "help" for every field in every formatted input transaction. This must include local incident entry, update and database transactions, and remote system interface transactions.

AHelp" information must be available for dispatcher commands.

AThe request for "help" information shall be entered by function key without affecting the contents of the field for which the information is requested.

AThe "help" information must be maintainable on-line.

System Notepad

AA system-wide notepad shall be provided which all operators can access. The function of this notepad is to provide quick access to information such as telephone numbers and addresses. The format should include a forty- (40) character description, unlimited text, and a date/time update stamp for initial entry and record changes.

Alarm Database

XThe system shall include an alarm database, maintainable by the dispatch staff, providing easy entry/access of alarm activations.

User Messaging facility

CThe system shall include the ability for an operator to send a message to another operator. Mobile Data Terminal operators shall also have this functionality. Logging of MDT messages shall be optional system wide.

Online medical expert system

XThe system shall provide online access to an EMD system, which prompts the operator with questions in a "tree structure" format to assist the operator in providing emergency medical information to callers.

Screen Printing

MThe operator must be able to print the contents of the workstation screen or status monitor at any time by function key request or command line.

MAn entire incident, which includes all appropriate screens, can be printed by a single command regardless of the screen currently displayed.

MWhenever a complete message is printed, it shall be reformatted to cause page numbering, page breaks, and column headers at the beginning of each printed page (typically 60 lines).

Message Control

Messages displayed in response to local or remote inquiries shall be displayed to the operator using a method to allow rapid and understandable review. These functions shall include:

MPage forward to next page
MPage backward to previous page Scroll upwards or downwards by single line
MScroll upwards or downwards via scroll bars Go directly to first page of message
MGo directly to last page of message
MAt least 12 lines of message text can be displayed at a single time.
MOutbound messages must contain requesting unit's ID and display in incoming return in order of time received.
MThe number of displayed lines must be able to be adjusted by the individual workstation operator. Any message page displayed can be permanently attached to an incident or unit history record.
MMessages must be displayed in sequential order of receipt.

Ease of Use

AMenus shall be supported as a training aid but shall not be required for system operation.

AEach workstation position must be capable of displaying at least 24 lines of information at one time. "Windows" shall be available for special functions, and can be scrolled up/down and left/right as needed.

AIn the event of concurrent update or display on the dispatcher's input screen, no data or keystrokes being entered by the operator must ever be lost or skipped.

AAt any time, the dispatcher must be able to redisplay any recent command entered on the workstation, and then alter and re-enter the command if needed.

AData entry into input forms at the dispatch workstation can be interrupted with a single keystroke or mouse action to allow entry of unit status change or information command (command line).

AAfter a command is entered, processing can resume at the original input form with another single keystroke or mouse action, with the input cursor at the original location in the data form.

Date and Time Display

CEach position's display screen should show the current date and time at all times.

Data Base Access

MAccess to ACIC/NCIC system may utilize fill-in-the-blanks input forms and/or command line query.

MCertain types of officer activity will generate a query to offline databases.

AThe format of input forms must be maintainable on-line without requiring programming experience.

AStandard message reformatting logic must be maintainable on-line without requiring programming experience.

AContext-sensitive "help" information may be available for each field in these input forms.

AHelp" information must be available at a high level, which provides general information about the transaction.

A“Help" information must be available by function key request.

AHelp" requests must not alter the input field.

AHelp" requests must list all valid data for edited fields.

AThe operator must be able to select the desired field data from the information displayed, with the field automatically updated.

A "Help" information must be maintainable on-line.

Provisions of NFPA 1221 and CALEA

Annex D Computer-Aided Dispatching (CAD) Systems

D.1 The CAD system should provide automated decision-support aids to telecommunicators by organizing and managing the real-time processing of informational items belonging to the following classes:

1. Alarms, including other requests for service
2. Incidents and events
3. Resources utilized by the communications center
4. Other classes, as directed by the authority having jurisdiction

D.1.1 Each item should have the following characteristics:

1. Unique identifier
2. Status
3. Location
4. Description
5. Relationship to other items
6. Other characteristics, as directed by the authority having jurisdiction

D.1.1.1 Alarm times should, as a minimum, also include the following characteristics:

1. Source
2. Priority
3. Type

D.1.1.2 Incident items should, as a minimum, also include the following characteristics:

1. Incident management structure
2. Evidentiary information

D.1.1.3 Resource items should, as a minimum, also include the following characteristics:

1. Capabilities
2. Authorizations
3. Assignments

4. Activities

D.2 The CAD system should archive items in a records management system for later retrieval, analysis, and reporting.

D.3 The CAD system should record a history (audit trail) of the following actions taken with the items:

1. Creation
2. Change, including modification, deletion, or supplementation
3. Disposition, including close-out, archiving, and transfer

D.3.1 Each entry in the history should include the following:

1. Coordinated universal time (UTC) of action
2. Identification of the individual performing the action
3. Effects of action on the characteristics of the items

D.4 The automated exchange of digital information related to alarm objects between the communications center and external systems should be accomplished in accordance with standards published by the National Emergency Numbering Association (NENA) and the Association of Law Enforcement Communications Officials, International (APCO).

The automated exchange of digital information between communications centers should be accomplished in accordance with standards published by APCO.

The automated exchange of information between communications center and transportation information systems should be accomplished in accordance with standards registered with the Intelligent Transportation Systems (ITS) Data Registry.

D.5 Reference Material

D.5.1 APCO Project 36 addresses standard format and content requirements that apply to information exchanged between CAD systems.

APCO International, Ind., World Headquarters, 351 N. Williamson Blvd., Daytona Beach, FL 32114-1112; (904) 322-2500, (888) 272-6911; Fax (904) 322-2501.

D.5.2 NENA Standard 02-010 addresses standard format and content requirements that apply to information exchanged with 9-1-1 databases.

National Emergency Number Association, 4350 North Fairfax Drive, Suite 750, Arlington, VA 22203-1695; (800) 332-3911; (614) 741-2080; Fax (614) 933-0911.

D.5.3 Intelligent Transportation Systems Data Registry includes standards with standard format and content requirements that apply to information exchanged with transportation information systems.

Institute of Electrical and Electronics Engineers, ITS Data Registrar, P.O. Box 1331, Piscataway, NJ 08855-1331; (732) 981-0060; Fax (732) 981-1721.

4. Documentation Provided

- FCC WTB
- Law Enforcement frequency bands
- Marana 200 demographics.pdf
- Town of Marana CATP coverage

3.1.3 Oro Valley Police Department

A. Current Environment

1. Operational

The police department built a new communications center in 2002. Currently, the center only dispatches for the Oro Valley Police Department.

The dispatch center is part of the Support Services Division of the Oro Valley Police Department. Nancy Anderson is the Communications Supervisor.

The dispatch center is staffed by eleven personnel in addition to the Communications Supervisor. Two of the eleven staff members are classified as Lead Dispatchers. The dispatch staff works ten hour shifts. The telecommunicators are on duty during the day shift. One is primarily responsible for radio, and the others handle the telephone. The other two shifts have only two telecommunicators on duty. The day shift is much busier than the other shifts. Currently, the center is fully staffed.

There is a very high washout rate for new dispatchers during training. Currently forty-five percent of the trainees fail to complete the training satisfactorily. Oro Valley has just begun to use the Critical System as part of the employee selection process. Training is on-the-job and classroom training is not provided.

2. Functional

Oro Valley is located in northern Pima County approximately six miles north of the Tucson city limits.

The Town sits at an elevation of 2,620 feet, covers over 34 square miles and has a current population of nearly 40,000. Oro Valley was incorporated in April, 1974.

Activity	2003	2004	2005
Wireline 911 Calls Received	**12900**	**12888**	**12078**
Wireless 911 Calls Received	**5530**	**6376**	**6899**
Total 911 Calls Received	**18430**	**19264**	**18977**
Wireless Call %	**30%**	**33%**	**36.3%**
Average 911 Answer Time	**6 sec**	**6 sec**	**6sec**
Other Emergency Calls Received			
Administrative/Non-Emergency Calls	**39145**	**51090**	**51851**
Total Incoming Calls	**57575**	**70354**	**70828**
Police Calls Dispatched	**11288**	**13726**	**13730**
Police Officer Initiated	**2466**	**2297**	**1918**
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers	**6015**	**6057**	**6307**
CJIS (SCIC/NCIC) Inquiries	**2000030**	**221000**	**252096**
CJIS File Maintenance (Entries, Mods, Cancels, etc	**3700**	**3800**	**4000**
Administrative Messages	**25**	**30**	**30**

3. Technical

The center is equipped with four full positions and one partial position. The 911 customer premise equipment (CPE) is Plant Equipment's VESTA system. Oro Valley uses the Pima County regional Spillman Data Systems Computer Aided Dispatch System (CAD). Motorola Command Star Lite radio consoles have been installed.

The equipment room is crowded and there is little room for future expansion. Also, there is a lack of storage space.

The Oro Valley Police Department uses four UHF conventional radio channels. Satellite receivers have been installed and they are currently using the Alltel network for mobile data.

There are some issues with the existing radio system. Coverage is a problem in some areas of the town. There are not enough channels. The department is adding seven to twelve officers per year. Currently, there are seven to fifteen officer patrol units as well as seven motorcycle officers on duty during the day in addition to investigators and other units. There are problems with some officers talking before they have keyed their microphone. Therefore, some of the radio traffic is lost.

Interoperability with the neighboring Marana Police Department is a problem since Marana installed its 800 MHz trunked system. Marana has no conventional channels to be able to communicate with Oro Valley.

B. Positive Attributes of Current Environment

1. Operational

Currently, the center is one of the few centers in the area that is fully staffed. Oro Valley has the second highest pay scale of the dispatch centers in the region. The dispatchers pay is tied to the police officers' pay scale. Dispatchers receive eighty-five percent of a police officers' salary.

2. Functional

The community is primarily a residential community. This results in a strong service orientation in the police department as well as the communications center.

3. Technical

The communications center was updated in 2002. The center is able to function efficiently.

C. Desired Attributes of Current and Future Environment

1. Operational

An improved employee selection process is needed. Currently a high number of trainees do not successfully complete their training.

2. Functional

The community hopes to be able to manage its growth through the use of master planning techniques.

3. Technical

Additional channels are needed to accommodate the anticipated growth. The police department is adding seven to twelve officers a year. At times, access to a radio channel is an issue, especially during the day shift. Improved coverage is also needed.

There is a need for additional space, especially in the equipment room. The current facility lacks storage space as well.

Improved interoperability is needed, especially with the Town of Marana who now use a different frequency band and different technology.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	Oro Valley Police Dispatch
File Name:	-	Oro Valley Dispatch Interview Record Final.doc
Date of Interview:	-	February 27, 2006
Location of Interview:	-	Oro Valley Police Department, 11000 N. La Canada Road
Persons Interviewed:	-	Nancy Anderson, Communications Supervisor
CTA Interviewers:	-	Nate McClure

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Town of Oro Valley has a population of approximately 40,000 residents.

2. The dispatch center is part of the Support Services Division of the Oro Valley Police Department.

3. Nancy Anderson is the Communications Supervisor. She has been with the police department for fifteen years and has been the Communications Supervisor since September 2005.

Present Situation

1. The police department built a new communications center in 2002. The center is equipped with four full positions and one partial position. The 911 customer premise equipment (CPE) is Plant Equipment's VESTA system. Oro Valley uses the Pima County regional Spillman Data Systems Computer Aided Dispatch System (CAD). Motorola Command Star Lite radio consoles have been installed. Currently, the center only dispatches for the Oro Valley Police Department.

2. The dispatch center is staffed by eleven personnel in addition to the Communications Supervisor. Two of the eleven staff members are classified as Lead Dispatchers. The dispatch staff works ten hour shifts. The telecommunicators are on duty during the day shift. One is primarily responsible for radio, and the others handle the telephone. The other two shifts have only two telecommunicators on duty. The day shift is much busier than the other shifts. Currently, the center is fully staffed. Oro Valley has the second highest pay scale of the dispatch centers in the region. The dispatchers pay is tied to the police officers' pay scale. Dispatchers receive eighty-five percent of a police officers' salary.

3. The Oro Valley Police Department uses four UHF conventional radio channels. Satellite receivers have been installed and they are currently using the Alltel network for mobile data.

Present Problems

1. There is a very high washout rate for new dispatchers during training. Currently forty-five percent of the trainees fail to compete the training satisfactorily. Oro Valley has just begun to use the Criticall System as part of the employee selection process. Training is on-the-job and classroom training is not provided.

2. There are some issues with the existing radio system. Coverage is a problem in some areas of the town. There are not enough channels. The department is adding seven to twelve officers per year. Currently, there are seven to fifteen officer patrol units as well as seven motorcycle officers on duty during the day in addition to investigators and other units. There are problems with some officers talking before they have keyed their microphone. Therefore, some of the radio traffic is lost.

3. The equipment room is crowded and there is little room for future expansion. Also, there is a lack of storage space.

4. Interoperability with the neighboring Marana Police Department is a problem since Marana installed its 800 MHz trunked system. Marana has no conventional channels to be able to communicate with Oro Valley.

The draft of this record was sent to Nancy Anderson on March 28, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address:
Nancy Anderson, ENP
Communications Supervisor
Oro Valley Police Department
11000 N. La Canada Drive
Oro Valley, AZ 85737

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2. Dispatch Center Survey

8/27

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Oro Valley Police Department

Contact Name: Nancy Anderson **Position:** Communications Supervisor

Phone: 520 229-4911 **Email:** nanderson@ovpd.org

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement 1 Combined Fire/EMS N/A

Fire only (paid/volunteer) N/A Emergency Medical Services (EMS) N/A

Other: _____

Please list the agencies and describe the geographic area served by your communications center

Oro Valley Police Dept.
34 square miles Suburban municipality in Northern Pima County, foothills of the Catalina mountains. pop 40,000

911 Services Provided:

Primary PSAP X Secondary PSAP ___

Basic 911 ___ Enhanced 911 X Wireless Phase I ___ Wireless Phase II X

VOIP 911 X

Page 1 of 6

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 4

How many positions does your PSAP have that can answer 911 calls but not dispatch? 1

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Activity	2003	2004	2005
Wireline 911 Calls Received	12900	12888	12078
Wireless 911 Calls Received	5530	6376	6899
Total 911 Calls Received	18430	19264	18977
Wireless Call %	30%	33%	36.3%
Average 911 Answer Time	0-6 seconds	0-6 seconds	0-6 seconds
Other Emergency Calls Received			
Administrative/Non-Emergency Calls	39145	51090	51851
Total Incoming Calls	57575	70354	70828
Police Calls Dispatched	11288	13726	12730
Police Officer Initiated	2466	2297	1918
Fire Events Dispatched	—	—	—
Emergency Medical Incidents	—	—	—
Medical Pre-Arrival Instructions Given	—	—	—
Number of 911 Transfers	6015	6057	6307
CJIS (SCIC/NCIC) Inquiries	200,030	221,000	252,096
CJIS File Maintenance (Entries, Mods, Cancels, etc	3700	3800	4000
Administrative Messages	25	30	30

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X

Call Answering (administrative) X

Call Answering (Other) (i.e. after hours, etc.) ____

Traffic Monitoring ____

Dispatch Police/Law Enforcement X

Dispatch Fire ____

Dispatch EMS ____

Dispatch City/County Services/DPW ____

Warrant/Article Entry/Confirm X

NCIC/state CIC checks X

Dispatch Animal Control _____

Other tasks performed:

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	Plant	Vesta Stand/Matrix		2002
Answering Position Equipment	Plant	Vesta	2.2	2002
Map	Plant	Orion Mapstar	5.1	2003
CAD	Spillman	Summit	4.5	2005
Radio Console	Motorola	Command Star Lite		2002
UPS	APS	Smart UPS 3000		2002
Instant Recall Recorder	Plant	Vesta	2.2	2002
Logging Recorder	Mercom Plant	Pyxis	3.0	2002
PBX				
Master Clock				

9-1-1 System

Number of 911 lines 8

Number of other lines 9

ANI & ALI printers – number & location 1 Comm Center

Abandoned call alarm 0

Single Button Transfers yes 6 keypad more with software program

Ring down circuits 5

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

Telephone Service Provider Qwest

911 Service Provider Qwest

ALI Database Provider Qwest

Is 9-1-1 Equipment 20 digit ANI capable YES NO

Can 9-1-1 Equipment "rebid" ALI (YES) NO

CAD System

Redundant processor Y/N? Yes

911 interface Y/N? Yes

RMS interface Y/N? yes

NCIC/State interface Y/N? Yes

Mobile Data & AVL Y/N? mobile yes, AVL no

Logging Recorder

Channel Capacity 24

Recording format (tape, DAT, VHS, etc.) DVD + hard drive

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift			3	1
Afternoon Shift			2	1
Night Shift			2	1

Page 4 of 6

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	9	2					1
Actual FT	9	2					1
Authorized Part Time	–						
Actual Part Time	–						

OTHER SYSTEMS

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

OV Main
Car to Car
SWAT
OV Backup

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Gateway
Spec Ops
Marana

What agencies do you need to communicate with but cannot?

_____ _____

_____ _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

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3. Documentation Provided

- Radio Frequencies
- Radio Station Licensee
- Law Enforcement frequency bands
- Oro Valley 2000 demographics.pdf
- Operations Division Chart

TABLE 3.1.3A
Oro Valley Police Department

	ATTRIBUTE	Oro Valley Police Dept.
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.1.4 Pascua Yaqui Police Departments and Pascua Pueblo Fire Department

A. Current Environment

1. Operational

The Pascua Yaqui Tribe of Arizona was officially recognized by the federal government in 1978. The Pascua Yaquis have a status similar to other Indian tribes of the United States. The Pascua Yaqui Tribe consists of more than 13,000 members and is self governed. The Pascua Yaqui Tribe has an 11 member Tribal Council including the Chairman. Slightly more than one-half of the members live in Pima County and about 3,700 members live in Pascua Pueblo.

The Pascua Yaqui Department of Public Safety is comprised of the Police Department and the Fire Department. Each of the two departments is headed by a Chief who reports to the Director of Public Safety. Tracy Nielsen is the Assistant Chief of Police. Robert Garcia is the Assistant Chief of the Fire Department. The police department has thirty sworn officers and a total staff of sixty. The fire department operates from a single station with twenty-five full-time employees. They currently have three first line apparatus.

The dispatch center is the responsibility of the police department. There are ten dispatchers and one supervisor.

2. Functional

When the tribe became federally recognized the Pascua Pueblo of the Pascua Yaqui Indian Reservation officially came "into being". The residential area of Pascua Pueblo is approximately two square miles. The entire pueblo is approximately ten square miles.

The tribe operates two casinos and a 4,400 seat outdoor conference venue.

The Pascua Yaqui uses a private jail in Florence for adults which is approximately two hours away for Pascua Pueblo. Juveniles are housed in the Pima County juvenile detention facility.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received	**1131**	**1177**	**1754**
Wireless Call %			
Average 911 Answer Time		**1 min**	**14 sec**
Other Emergency Calls Received	**2612**	**2501**	**2801**
Administrative/Non-Emergency Calls	**3534**	**4041**	**4340**
Total Incoming Calls	**7277**	**7719**	**8875**
Police Calls Dispatched	**4130**	**4874**	**7239**
Police Officer Initiated	**506**	**574**	**725**
Fire Events Dispatched	**1457**	**1445**	**1798**
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers	**1131**	**194**	**>20**
CJIS (SCIC/NCIC) Inquiries	**15708**	**16674**	**15504**
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

3. Technical

In June 2004, the fire department moved into a new fire station. The dispatch center moved into new quarters in the fire station in November 2004. The dispatch center has two full positions.

Plant Vesta 911 CPE is used as are Motorola Command Star Lite consoles. A Windows-based Spillman RMS system is in use although it is not connected to the Pima County regional system. There are four wireline 911 trunks and four administrative lines.

Wireless 911 calls are routed to the Tucson 911 center. 911 calls from the Casino Del Sol are routed to Tucson. Qwest is the 911 provider and they do not have mapping.

The police department has an 800 MHz conventional radio system. There are three repeated channels and three talk-around channels. Channel 1 is the primary channel. The repeater is located at Fire Station 1. Channel 2 is used for security and animal control and Channel 3 is used for long range communications. The Channel 3 repeater is located on Keystone Mountain. The police department has mobile data terminals. They can access CAD/RMS but not ACJIS. They have installed a wireless network that covers about one-half of the area. Pascua Yaqui PD officers have take home vehicles. Mobiles and portables are equipped with the Tohono O'odham police channels.

The Pascua Yaqui Fire Department uses conventional VHF channels. They also have UHF portables on the Drexel Heights Fire Department channels. All three front line apparatus are also ALS equipped.

The police department frequently has to work with the Pima County Sheriff's Department, but there is no direct communications. While they have access to the gateway system, they use it infrequently. They have poor coverage on their channels outside Pascua Pueblo.

The fire department experiences a number of dead spots especially in buildings. There is virtually no talk-back west of Camino Verde. They frequently hear the Chandler police department especially at night.

B. Positive Attributes of Current Environment

1. Operational

The Pascua Yaqui dispatch staff is able to provide a level of service consistent with the facilities and resources that they have.

2. Functional

The Pascua Yaqui Tribe is committed to both preserving their cultural beliefs and providing economic development at the same time. Its development and ownership of two successful casinos and the largest outdoor concert venue in southern Arizona bring increasing traffic into the area.

3. Technical

The communications center is well equipped and serviceable for the needs of the community.

C. Desired Attributes of Current and Future Environment

1. Operational

Continued improvement in the training made available to the staff is desirable.

The departments would like to establish a back-up dispatch center at the Information Technology Warehouse.

2. Functional

The community wants a vibrant economically viable community that is able to support its members.

3. Technical

There is a need for improved coverage especially in buildings and outside of the reservation. Both the police and fire departments want the ability to communicate with surrounding departments.

The fire department wants mobile data and they want to change their alert tones.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Pascua Yaqui Tribe**
File Name:	-	**Pascua Yaqui Tribe Dispatch Interview Record Final.doc**
Date of Interview:	-	**March 1, 2006**
Location of Interview:	-	**Pascua Pueblo Fire Station #1, 4631 W. Calle Torim**
Persons Interviewed:	-	**Traci Nielsen, Assistant Chief of Police** **Robert Garcia, Assistant Fire Chief** **Elizabeth Esparza, Lieutenant, Police Department** **Hector Olivo, Lieutenant, Police Department** **Patricia Ramirez, Communications Supervisor** **Bill Gates, Information Technology Department**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Pascua Yaqui Tribe of Arizona was officially recognized by the federal government in 1978. At that time the Pascua Pueblo of the Pascua Yaqui Indian Reservation officially came "into being". The Pascua Yaquis have a status similar to other Indian tribes of the United States. This status makes the Yaqui eligible for specific services due to trust responsibility that the United States offers Native American peoples who have suffered land loss. The Pascua Yaqui Tribe consists of more than 13,000 members and is self governed. The Pascua Yaqui Tribe has an 11 member Tribal Council including the Chairman. Slightly more than one-half of the members live in Pima County and about 3,700 members live in Pascua Pueblo. The residential area of Pascua Pueblo is approximately two square miles. The entire pueblo is approximately ten square miles. The tribe operates two casinos and a 4,400 seat outdoor conference venue.

2. The Pascua Yaqui Department of Public Safety is comprised of the Police Department and the Fire Department. Each of the two departments is headed by a Chief who reports to the Director of Public Safety. Tracy Nielsen is the Assistant Chief of Police. Robert Garcia is the Assistant Chief of the Fire Department. The police department has thirty sworn officers and a total staff of sixty. The fire department operates from a single station with twenty-five full-time employees. They currently have three first line apparatus.

3. In June 2004, the fire department moved into a new fire station. The dispatch center moved into new quarters in the fire station in November 2004.

Present Situation

1. The dispatch center has two full positions. Plant Vesta 911 CPE is used as are Motorola Command Star Lite consoles. A Windows-based Spillman RMS system is in use although it is not connected to the Pima County regional system.

2. There are four wireline 911 trunks and four administrative lines. Wireless 911 calls are routed to the Tucson 911 center. 911 calls from the Casino Del Sol are routed to Tucson. Qwest is the 911 provider and do not have mapping.

3. The police department has an 800 MHz conventional radio system. There are three repeated channels and three talk-around channels. Channel 1 is the primary channel. The repeater is located at Fire Station 1. Channel 2 is used for security and animal control and Channel 3 is used for long range communications. The Channel 3 repeater is located on Keystone Mountain. The police department has mobile data terminals. They can access CAD/RMS but not ACJIS. They have installed a wireless network that covers about one-half of the area. The Pascua Yaqui uses a private jail in Florence for adults which is approximately two hours away for Pascua Pueblo. Juveniles are housed in the Pima County juvenile detention facility. Pascua Yaqui PD officers have take home vehicles. Mobiles and portables are equipped with the Tohono O'odham police channels.

4. The Pascua Yaqui Fire Department uses conventional VHF channels. They also have UHF portables on the Drexel Heights Fire Department channels. All three front line apparatus are also ALS equipped.

5. The dispatch center is the responsibility of the police department. There are ten dispatchers and one supervisor.

6. They work eight hour shifts with a minimum of two dispatchers on duty at all times. While they are currently fully staffed, one dispatcher is on Family Medical Leave Act leave.

Present Problems

1. The police department frequently has to work with the Pima County Sheriff's Department, but there is no direct communications. While they have access to the gateway system, they use it infrequently. They have poor coverage on their channels outside Pascua Pueblo.

2. The fire department experiences a number of dead spots especially in buildings. There is virtually no talk-back west of Camino Verde. They frequently hear the Chandler police department especially at night.

Future Requirements

1. Both the police and fire departments want the ability to communicate with surrounding departments.

2. The fire department wants mobile data and they want to change their alert tones.

3. The departments would like to establish a back-up dispatch center at the Information Technology Warehouse.

Additional Comments

1. None.

The draft of this record was sent to Tracy Nielsen on March 28, 2006.
Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address:
Tracy E. Nielsen
Assistant Chief of Police
7474 S. Camino de Oeste
Tucson, AZ 85746

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2. Dispatch Center Survey

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: **Pascua Yaqui Police Department**

Contact Name: **Tracy E. Nielsen** **Position:** **Asst. Chief of Police**

Phone: **520-879-5638** **Email:** **tracy.nielsen@pascuayaqui-nsn.gov**

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement 1 Combined Fire/EMS 1

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) _____

Other: _____

Please list the agencies and describe the geographic area served by your communications center

Pascua Yaqui Police Department
Pascua Yaqui Pueblo Fire Department
_____
_____
_____

911 Services Provided:

Primary PSAP Yes Secondary PSAP Yes

Basic 911 _____ Enhanced 911 Yes Wireless Phase I _____ Wireless Phase II _____

VOIP 911 _____

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 2

How many positions does your PSAP have that can answer 911 calls but not dispatch? 0

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Activity	2003	2004	2005
Wireline 911 Calls Received		unk	unk
Wireless 911 Calls Received			
Total 911 Calls Received	1131	1177	1754
Wireless Call %			
Average 911 Answer Time		1min	14 sec
Other Emergency Calls Received	2612	2501	2801
Administrative/Non-Emergency Calls	3534	4041	4320
Total Incoming Calls	7277	7719	8875
Police Calls Dispatched	4130	4874	7239
Police Officer Initiated	506	574	725
Fire Events Dispatched	1457	1445	1798
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers	1131	194	>20
CJIS (SCIC/NCIC) Inquiries	15708	16674	15504
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X

Call Answering (administrative) X

Call Answering (Other) X
(i.e. after hours, etc.)

Traffic Monitoring X

Dispatch Police/Law Enforcement X

Dispatch Fire X

Dispatch EMS X

Dispatch City/County Services/DPW X

Warrant/Article Entry/Confirm X
Dispatch Animal Control X
NCIC/state CIC checks X
Other tasks performed: X

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	PLANT	VESTA	2.5	11-3-2004
Answering Position Equipment				
Map				
CAD	SPILLMAN	MILLENIUM	4.0	11-2002
Radio Console	Motorola	Star Command		11-1999
UPS				
Instant Recall Recorder				
Logging Recorder	NICE	MIRRA		
PBX	NEX			
Master Clock				

9-1-1 System

Number of 911 lines 4

Number of other lines 4

ANI & ALI printers – number & location 1 COMMUNICATION CENTER

Abandoned call alarm YES

Single Button Transfers NO

Ring down circuits 0

Telephone Service Provider QWEST

911 Service Provider QWEST

ALI Database Provider QWEST

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? YEW

911 interface Y/N?NO

RMS interface Y/N? YES

NCIC/State interface Y/N?NO

Mobile Data & AVL Y/N? NO

Logging Recorder

Channel Capacity 16 CHANNEL

Recording format (tape, DAT, VHS, etc.)DVD RAM

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift			2	1
Afternoon Shift			2	
Night Shift			2	

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	10	1					
Actual FT	10						
Authorized Part Time				1			
Actual Part Time				1			

OTHER SYSTEMS

MAXXESS ALARM COMPUTER

_____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

POLICE 1 POLICE 2

FIRE 1 _____

_____ _____

_____ _____

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

KEYSTONE TALKAROUND 6

_____ _____

_____ _____

_____ _____

What agencies do you need to communicate with but cannot?

TUCSON POLICE

PIMA COUNTY S.O

BORDER PATROL

CUSTOMS

MARANA POLICE DEPT

DREXEL HEIGHTS FIRE

PASCUA FIRE

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

PENETRATION INTO GOVERNMENT AND CASINO BUILDINGS

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

3. Documentation Provided

- Fire Rescue and Law Enforcement frequency bands
- PC Frequency list
- Pascua Yaqui 2000 demographics.pdf

TABLE 3.1.4A
Pascua Yaqui Police Department & Pascua Pueblo Fire Department

	ATTRIBUTE	Pascua Pueblo Fire Dept.	Pascua Yaqui Police Dept.
Sufficient Capacity			
1	Dispatch Center Size		
2	Dispatch Center Staff		
3	Technology		
Environment			
4	Light		
5	Temperature and Air Control		
6	Cleanliness		
7	Furniture		
8	Technical		
9	External Facilities		
10	Internal Facilities		
Effectiveness			
11	Radio System		
12	Console		
13	Computer Aided Dispatch (CAD)		
14	Telephone		
15	Interoperability with Other Agencies		
Technology			
16	Reliability		
17	Maintenance		
18	Back-Up		

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.1.5 Pima Community College

A. Current Environment

1. Operational

The Pima Community College Department of Public Safety was established as a fully certified law enforcement agency by Pima County Community College District Governing Board action on January 17, 1979. The Director of the Department of Public Safety reports to the Vice Chancellor for Finance and Administrative Services. In addition to the Director, the department is authorized under one commander, five sergeants, twenty-nine certified police officers, twelve non-certified community service officers, a communications center supervisor, five full time and six part-time dispatchers, and two administrative support specialists. Also employed are part-time student aides that assist with non-law enforcement tasks. In addition to College staff, the department is supplemented by contract security personnel who provide general security service during late evening and weekend hours.

The department has an authorized strength of twenty-nine sworn officers. They are several short of their authorized strength. The officers also work ten hour shifts. They are organized into four different squads (two days/ two nights). Typically there are ten to twelve officers and community service officers on each squad. From midnight until 6 am there are no sworn officers on duty. There is one roving Community Service Officer on duty from midnight until 6 am. They have an authorized staff of six full-time dispatchers and ten part-time dispatchers. In March 2006 there were four full-time and three part-time dispatchers. The dispatchers work ten hour shifts. They monitor numerous alarms and also enter reports into the records system.

The department is understaffed. According to the most recent Annual Report, the department was operating with only seventy-nine percent of its authorized staff. At the time of this interview, the dispatch center was functioning with only two-thirds of its authorized full-time staff and thirty percent of its part-time staff. The Department of Public Safety had been accredited by the Commission on Accreditation of Law Enforcement Agencies but had to relinquish the accreditation because of the lack of staff to maintain the process.

2. Functional

Pima Community College has sixteen primary facilities as well as a number of other facilities throughout eastern Pima County. There are six different campuses (Community Campus, Desert Vista Campus, Downtown Campus, East Campus, Northwest Campus, West Campus) five learning centers (Northeast Learning Center, Public Safety and Emergency Institute, Southeast Learning Center, Community Learning and Performing Arts Center in Green Valley, Davis-Monthan Air Force Base Learning Center) , three Community Campus Units (Center for Training and Development, Pima County Adult Basic Education, Center for Business Solutions) and four adult education centers. It is the seventh largest community college system in the country. The total enrollment is approximately 30,000 students.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received	**98**	**110**	**71**
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls	**11858**	**15006**	**18216**
Police Calls Dispatched	**4753**	**6050**	**6785**
Police Officer Initiated	**2712**	**2601**	**3044**

Activity	2003	2004	2005
Fire Events Dispatched	**3**	**3**	**3**
Emergency Medical Incidents	**79**	**80**	**85**
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries	**12567**	**16807**	**14351**
CJIS File Maintenance (Entries, Mods, Cancels, etc	**325**	**500**	**325**
Administrative Messages	**56**	**58**	**38**

3. Technical

The Pima Community College Department of Public Safety Dispatch Center is a two position center. There is also a partial position in the Supervisor's office and in the Sergeant's office. The department uses the Pima County Spillman CAD/RMS system. They also have "Read-Only" capability on the Tucson Police Department's records system. They have an authorized staff of six full-time dispatchers and ten part-time dispatchers. At the time of this interview, there were four full-time and three part-time dispatchers. The dispatchers work ten hour shifts. They monitor numerous alarms and also enter reports into the records system.

Because of the low volume of 911 calls received, all 911 calls are first routed to the Tucson Communications Center. Tucson then transfers the calls to the Pima College Dispatch Center. The caller information is faxed to the college.

The Physical Plant Department is buying UHF radios from the various campuses. They have no communication with the Department of Public Safety.

B. Positive Attributes of Current Environment

1. Operational

As the department notes in its Annual Report, the primary services provided by the Pima Community College Department of Public Safety are personal and generalized assistance, protection of persons and property, and first aid and emergency medical services. The DPS staff conducts workshops for faculty, staff, and students. They also conduct fire and safety inspections of college facilities.

2. Functional

Most of the college's facilities are in the City of Tucson. Pima College DPS supervisors have the capability to communicate on the Tucson Police Department channels.

3. Technical

The Department of Public Safety has installed an 800 MHz conventional, digital simulcast radio system which uses seven sites. Coverage, including in buildings, is described as good.

C. Desired Attributes of Current and Future Environment

1. Operational

Staffing both of the communications center and the department of public safety as a whole is desired. According to the most recent Annual Report, the department was operating with only seventy-nine percent of its authorized staff.

At the time of this interview, the dispatch center was functioning with only two-thirds of its authorized full-time staff and thirty percent of its part-time staff.

The Department of Public Safety had been accredited by the Commission on Accreditation of Law Enforcement Agencies but had to relinquish the accreditation because of the lack of staff to maintain the process.

2. Functional

Because of the differences in the various facilities, there are different issues at the different campuses.

3. Technical

While the Department of Public Safety has recently upgraded its system, the Physical Plant Department is buying UHF radios from the various campuses. They have no communication with the Department of Public Safety. There is a need for improved interoperability between the DPS and Physical Plant.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Pima Community College Dispatch**
File Name:	-	**Pima Community College Dispatch Interview Record Final.doc**
Date of Interview:	-	**February 28, 2006**
Location of Interview:	-	**6680 South Country Club Road**
Persons Interviewed:	-	**Cheryl Smart, Dispatch Supervisor** **Dan Simmons, Sergeant**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Pima Community College Department of Public Safety was established as a fully certified law enforcement agency by Pima County Community College District Governing Board action on January 17, 1979. The Director of the Department of Public Safety reports to the Vice Chancellor for Finance and Administrative Services. In addition to the Director, the department is authorized under one commander, five sergeants, twenty-nine certified police officers, twelve non-certified community service officers, a communications center supervisor, five full time and six part-time dispatchers, and two administrative support specialists. Also employed are part-time student aides that assist with non-law enforcement tasks. In addition to College staff, the department is supplemented by contract security personnel who provide general security service during late evening and weekend hours.

2. Pima Community College has sixteen primary facilities as well as a number of other facilities throughout eastern Pima County.

There are six different campuses (Community Campus, Desert Vista Campus, Downtown Campus, East Campus, Northwest Campus, West Campus) five learning centers (Northeast Learning Center, Public Safety and Emergency Institute, Southeast Learning Center, Community Learning and Performing Arts Center in Green Valley, Davis-Monthan Air Force Base Learning Center) , three Community Campus Units (Center for Training and Development, Pima County Adult Basic Education, Center for Business Solutions) and four adult education centers. It is the seventh largest community college system in the country. The total enrollment is approximately 30,000 students.

3. The Pima Community College Department of Public Safety headquarters and dispatch center is located in the colleges Maintenance and Security facility. Sergeant Simmons is in charge of the Administrative Services Division. The Communications Center is part of the Administrative Services Division. Cheryl Smart is the Communications Center Supervisor.

Present Situation

1. The Pima Community College Department of Public Safety Dispatch Center is a two position center. There is also a partial position in the Supervisor's office and in the Sergeant's office. The department uses the Pima County Spillman CAD/RMS system. They also have "Read-Only" capability on the Tucson Police Department's records system. They have an authorized staff of six full-time dispatchers and ten part-time dispatchers. At the time of this interview, there were four full-time and three part-time dispatchers. The dispatchers work ten hour shifts. They monitor numerous alarms and also enter reports into the records system.

2. The department has an authorized strength of twenty-nine sworn officers. They are several short of their authorized strength. The officers also work ten hour shifts. They are organized into four different squads (two days/ two nights). Typically there are ten to twelve officers and community service officers on each squad. From midnight until 6 am there are no sworn officers on duty. There is one roving Community Service Officer on duty from midnight until 6 am.

3. The Department of Public Safety has installed an 800 MHz conventional, digital simulcast radio system which uses seven sites. Coverage, including in buildings, is described as good.

4. Because of the low volume of 911 calls received, all 911 calls are first routed to the Tucson Communications Center. Tucson then transfers the calls to the Pima College Dispatch Center. The caller information is faxed to the college.

5. Most of the college's facilities are in the City of Tucson. Pima College DPS supervisors have the capability to communicate on the Tucson Police Department channels.

Present Problems

1. The department is understaffed. According to the most recent Annual Report, the department was operating with only seventy-nine percent of its authorized staff. At the time of this interview, the dispatch center was functioning with only two-thirds of its authorized full-time staff and thirty percent of its part-time staff. The Department of Public Safety had been accredited by the Commission on Accreditation of Law Enforcement Agencies but had to relinquish the accreditation because of the lack of staff to maintain the process.

2. Because of the differences in the various facilities, there are different issues at the different campuses.

3. The Physical Plant Department is buying UHF radios from the various campuses. They have no communication with the Department of Public Safety.

Additional Comments

1. By the nature of the college, the dispatch center is different from the typical public safety dispatch center.

The draft of this record was sent to Cheryl Smart on March 28, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address: Cheryl Smart
Pima College Department of Public Safety
6680 South Country Club Road
Tucson, AZ 85709-1740

M:\FILES\20099 Pima County, AZ\20099A - Business Architecture Planning\interview\Final\Pima Community College Dispatch Interview Final.doc

2. Dispatch Center Survey

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

8/24

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Pima College DPS

Contact Name: _____ **Position:** _____

Phone: _____ **Email:** _____

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement ✓ Combined Fire/EMS _____

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) _____

Other: _____

Please list the agencies and describe the geographic area served by your communications center

Pima Comm College - City wide locations & in Pima County

911 Services Provided:

Primary PSAP _____ Secondary PSAP ✓

Basic 911 _____ Enhanced 911 _____ Wireless Phase I _____ Wireless Phase II _____

VOIP 911 _____

Page 1 of 6

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 2

How many positions does your PSAP have that can answer 911 calls but not dispatch? N/A

How many positions does your PSAP have that can dispatch but not answer 911 calls? N/A

Activity	2003	2004	2005
Wireline 911 Calls Received	not counted	→	→
Wireless 911 Calls Received	" "	→	→
Total 911 Calls Received	98	110	71
Wireless Call %	" "	→	→
Average 911 Answer Time	" "	→	→
Other Emergency Calls Received	" "	→	→
Administrative/Non-Emergency Calls	not counted	→	→
* **Total Incoming Calls**	11,858	15,006	18,216
Police Calls Dispatched	4,753	6,050	6,785
Police Officer Initiated	2,412	2,601	3,044
Fire Events Dispatched	3	3	3
Emergency Medical Incidents	79	80	85
Medical Pre-Arrival Instructions Given	not counted	→	→
Number of 911 Transfers	not counted	→	→
CJIS (SCIC/NCIC) Inquiries	12,567	16,807	19,351
CJIS File Maintenance (Entries, Mods, Cancels, etc	approx, 325	500	325
Administrative Messages	56	58	38

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) ____

Call Answering (administrative) ✓

Call Answering (Other) (i.e. after hours, etc.) ✓

Traffic Monitoring ✓

Dispatch Police/Law Enforcement ✓

Dispatch Fire ____

Dispatch EMS ____

Dispatch City/County Services/DPW ____

COMMUNICATIONS

Pima County
Wireless Integrated Network

Warrant/Article Entry/Confirm ✓

NCIC/state CIC checks ✓

Dispatch Animal Control ✓

Other tasks performed: ✓ alarm monitoring

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	Ø	Communication Inc		
Answering Position Equipment	Continental ~~Dictaphone~~ ~~Nice~~ Fujitsu	Fujitsu ~~Guardian~~		
Map	Paper			
CAD	Spillman			
Radio Console	motorola	Centracom	Gold elite	June 200
UPS				
Instant Recall Recorder	Freedom Call Check	Dictaphone	1.1.105 API 1.0.25	
Logging Recorder	Dictaphone/Nice	Guardian		
PBX	Ø			
Master Clock	✓			

9-1-1 System

Number of 911 lines 2

Number of other lines 6

ANI & ALI printers – number & location Ø

Abandoned call alarm Ø

Single Button Transfers 2

Ring down circuits 25 red 5 / blue 20 to TPD 50 meds

911 ringdown

COMMUNICATIONS

Pima County Wireless Integrated Network

Telephone Service Provider Qwest

911 Service Provider TPD

ALI Database Provider S.O. - calls
TPD - Fax

Is 9-1-1 Equipment 20 digit ANI capable YES ☐ NO ☑

Can 9-1-1 Equipment "rebid" ALI YES ☐ NO ☑

CAD System

Redundant processor Y/N? Y

911 interface Y/N? N

RMS interface Y/N? Y

NCIC/State interface Y/N? Y

Mobile Data & AVL Y/N? N

Logging Recorder

Channel Capacity 12

Recording format (tape, DAT, VHS, etc.) digital

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	Ø	Ø	2	1
Afternoon Shift			1	
Night Shift			1	

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	6						
Actual FT	~~5~~ 4						
Authorized Part Time	10						
Actual Part Time	3						

OTHER SYSTEMS

Portable

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

What agencies do you need to communicate with but cannot?

_____ _____

_____ _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document5

3. Documentation Provided

- System design coverage maps (MOT)
- Summary of Current Communications System
- Law enforcement frequency bands
- Radio locations and frequencies
- Department organizational chart
- Law enforcement predicted growth
- Radio station licensee

TABLE 3.1.5A
Pima College Department of Public Safety

	ATTRIBUTE	Pima College Dept. of Public Safety
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.1.6 South Tucson DPS

A. Current Environment

1. Operational

The South Tucson Police Department dispatch center dispatches for the South Tucson Police and the Sahuarita Police Department. Dale King is the lead dispatcher for the South Tucson Police Department. The Administrative patrol Sergeant is in charge of communications.

The dispatch center has a staff of six. They work ten hour shifts (0700-1700, 1700-0300, 2100-0700). From 0300 until 2100 there is only one telecommunicator on duty, except on Fridays, which is the overlap day. The dispatcher on duty is responsible for confirming warrants. Staffing is an issue. Eighteen hours a day, six days a week there is only one dispatcher on duty.

The South Tucson Fire Department is dispatched by Rural Metro. Rural Metro provides EMS transport services.

2. Functional

South Tucson is a mile-square community just south of downtown Tucson and is completely surrounded by the City of Tucson. It was incorporated in 1936, disincorporated in 1938, and reincorporated in 1940.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received			
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received			

Activity	2003	2004	2005
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

3. Technical

The center is equipped with Plant Vesta 911 CPE, including the Orion mapping program, and Motorola Star Command Star Lite radio consoles. There are two full positions. The equipment was upgraded in 2004. They use the Tucson Police Department's CAD system.

Interoperability is a problem. South Tucson is completely surrounded by Tucson. There is no direct communications between the two departments, except for the Tucson Police Department helicopter. The gateway system requires a lot of coordination to use.

There are coverage problems from portables in buildings and in the south end of the community.

B. Positive Attributes of Current Environment

1. Operational

With the small geographical area covered and the relatively small population served, the police department is able to provide an acceptable level of service with a small staff.

2. Functional

In 2005, the South Tucson PD answered 15,000 9-1-1 calls.

3. Technical

By using the same 9-1-1 equipment, CAD, and Records systems as the City of Tucson, South Tucson is able to have a higher level of equipment and provide more service than they could on their own.

C. Desired Attributes of Current and Future Environment

1. Operational

Having only one dispatcher on duty eighteen hours a day can be problematic. It would be advantageous to have another person available in case there is a need for additional coverage.

2. Functional

While limited growth is anticipated in South Tucson because it is completely surrounded by Tucson, the Town of Sahuarita is expected to experience significant growth in the near term and well as long term as more of the land currently being used for agriculture is developed. This will increase the need for services.

3. Technical

Improved interoperability, especially with the Tucson Police Department is highly desirable. Improved coverage, especially in –buildings and in Sahuarita, is also needed.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	**-South Tucson Police Dispatch**
File Name:	**-South Tucson PD Dispatch Interview Record Final.doc**
Date of Interview:	**-February 24, 2006**
Location of Interview:	**- South Tucson Police Department**
Persons Interviewed:	**- Dale King**
CTA Interviewer:	**- Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. South Tucson is a mile-square community just south of downtown Tucson and is completely surrounded by the City of Tucson. Of its population which is approximately 5,500, 83% are Mexican-American and 10% are Native American. It was incorporated in 1936, disincorporated in 1938, and reincorporated in 1940.

2. Dale King is the lead dispatcher for the South Tucson Police Department. The Administrative patrol Sergeant is in charge of communications. The dispatch center dispatches for the South Tucson Police and the Sahuarita Police Department.

3. The dispatcher on duty is responsible for confirming warrants.

Present Situation

1. The dispatch center has a staff of six. They work ten hour shifts (0700-1700, 1700-0300, 2100-0700). From 0300 until 2100 there is only one telecommunicator on duty, except on Fridays, which is the overlap day.

2. The center is equipped with Plant Vesta 911 CPE, including the Orion mapping program and Motorola Star Command Star Lite radio consoles. There are two full positions. The equipment was upgraded in 2004. They use the Tucson Police Department's CAD system.

3. There are four 911 trunks, two administrative lines, and two PBX extensions. Because South Tucson is so geographically small, wireless calls are answered by Tucson and then transferred.

Present Problems

1. Staffing is an issue. Eighteen hours a day, six days a week there is only one dispatcher on duty.

2. Interoperability is a problem. South Tucson is completely surrounded by Tucson. There is no direct communications between the two departments, except for the Tucson Police Department helicopter. The gateway system requires a lot of coordination to use.

3. There are coverage problems from portables in buildings and in the south end of the community.

Future Requirements

1.

Additional Comments

1.

The draft of this record was sent to Dale King on March 20, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address:
Dale King
City of South Tucson
1601 S. 6th Avenue
South Tucson, AZ 85713

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2. Dispatch Center Survey

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

2/23

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: South Tucson PD

Contact Name: _____ **Position:** _____

Phone: _____ **Email:** _____

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement 8 Combined Fire/EMS 2

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) _____

Other: _____

Please list the agencies and describe the geographic area served by your communications center

_____
_____
_____
_____
_____

911 Services Provided:

Primary PSAP _____ Secondary PSAP X

Basic 911 _____ Enhanced 911 X Wireless Phase I X Wireless Phase II X

VOIP 911 _____

COMMUNICATIONS

Page 1 of 6

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 2

How many positions does your PSAP have that can answer 911 calls but not dispatch? 0

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received			
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) ✓

Call Answering (administrative) ✓

Call Answering (Other) (i.e. after hours, etc.) ✓

Traffic Monitoring ____

Dispatch Police/Law Enforcement ✓

Dispatch Fire ____

Dispatch EMS ____

Dispatch City/County Services/DPW ✓

Warrant/Article Entry/Confirm ✓

NCIC/state CIC checks ✓

Dispatch Animal Control ✓

Other tasks performed: ____

Facilities & Equipment

Item	Manufacturer	Model		Software Version	Install Date
ANI/ALI Controller (911 Switch					
Answering Position Equipment					
Map					
CAD					
Radio Console					
UPS					
Instant Recall Recorder					
Logging Recorder					
PBX					
Master Clock					

9-1-1 System

Number of 911 lines 4

Number of other lines 6

ANI & ALI printers – number & location 0

Abandoned call alarm____

Single Button Transfers 8

Ring down circuits 2

Telephone Service Provider ____

911 Service Provider QWEST

ALI Database Provider QWEST

Is 9-1-1 Equipment 20 digit ANI capable YES ☑ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☑ NO ☐

CAD System

Redundant processor Y/N? Y

911 interface Y/N? Y

RMS interface Y/N? Y

NCIC/State interface Y/N? Y

Mobile Data & AVL Y/N? N

Logging Recorder

Channel Capacity 20 ChL

Recording format (tape, DAT, VHS, etc.) TAPE

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift			1	
Afternoon Shift			2	
Night Shift			2	

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time							
Actual FT	6	0	0				
Authorized Part Time							
Actual Part Time							

OTHER SYSTEMS

_____

_____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

156.210 _____

_____ _____

_____ _____

_____ _____

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

_____ _____

_____ _____

_____ _____

_____ _____

What agencies do you need to communicate with but cannot?

_____ _____

_____ _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

3. Documentation Provided

- Law Enforcement Frequency bands
- Trunk and Line Overview

TABLE 3.1.6A
South Tucson Police Department

DESIGNATOR NO.	ATTRIBUTE	South Tucson Police Dept.	COMMENTS
Sufficient Capacity			
1	Dispatch Center Size	4.0	
2	Dispatch Center Staff	5.0	
3	Technology	4.0	
Environment			
4	Light	4.0	
5	Temperature and Air Control	3.0	
6	Cleanliness	4.0	
7	Furniture	4.0	
8	Technical	4.0	
9	External Facilities	4.0	
10	Internal Facilities	4.0	
Effectiveness			
11	Radio System	4.0	
12	Console	4.0	
13	Computer Aided Dispatch (CAD)	4.0	
14	Telephone	4.0	
15	Interoperability with Other Agencies	5.0	
Technology			
16	Reliability	4.0	
17	Maintenance	4.0	
18	Back-Up	4.0	

Ranking Scale:

0 - Attribute is NOT IMPORTANT to the user.

1 - Attribute is MINIMALLY IMPORTANT to the user.

2 - Attribute is NICE TO HAVE, could enhance operations.

3 - Attribute is USEFUL, will promote more efficient day to day operation.

4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.

5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.1.7 Tohono O'odham Fire & EMS Dispatch

A. Current Environment

1. Operational

The Sels Hospital provides dispatch service for the Tohono O'odham Fire Department as well as the Indian Health Service EMS. It is a secondary PSAP and 911 calls are either transferred or relayed to the Fire/EMS dispatch from the Tohono O'odham Police Department. The dispatchers also answer the hospital switchboard.

There are five dispatchers including the lead dispatcher. The dispatchers work twelve hour shifts (10:00 – 10:00) and there is one on duty at a time.

The current facility that is used for dispatch is in extremely bad condition. Grounding is not to standard, the linoleum is peeling from the floor and the security is very limited.

Most of the time, 911 calls are relayed rather than transferred by the police dispatch. As a result, the fire/EMS dispatcher does not have direct contact with the caller.

2. Functional

The Tohono O'odham Fire Department provides fire service coverage for the reservation. Emergency Medical Service is provided by the Indian Health Service EMS based at the Sels Hospital. There are four fire stations and four EMS stations. The departments use a shared radio system.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received			
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			
Total CJIS			

3. Technical

The dispatch center is located in a converted mobile home. It is a single position dispatch center and there is no computer aided dispatch system. A desk top remote control unit is used for the radio system. There is a non-functioning Orbacom console that is kept because it does have a working clock.

There are numerous areas where radio coverage is limited especially from portable radios.

B. Positive Attributes of Current Environment

1. Operational

The staff functions with extremely limited facilities and equipment.

2. Functional

The influx in illegal immigrants coming onto the reservation has severely strained the resources of the Tohono O'odham nation. Many of these illegal immigrants are in medical crisis due to the strain of the border crossing.

3. Technical

The facilities are very limited. The personnel are able to make due with very limited resources.

C. Desired Attributes of Current and Future Environment

1. Operational

Facilities that meet accepted standards are essential.

2. Functional

Adequate resources to deal with the problems being encountered are needed.

3. Technical

There is a critical need for improved interoperability and coverage in many areas of the reservation.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Indian Health Service, Sels, AZ**
File Name:	-	**Tohono O'odham Fire Ems Dispatch Interview Record Final.doc**
Date of Interview:	-	**March 3, 2006**
Location of Interview:	-	**Sels Hospital**
Persons Interviewed:	-	**Mark Adams, Chief Emergency Medical Services** **Mike Harris, Lead Medical Dispatcher**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Sels Hospital, which was built in 1961, is a 34-bed facility with JCAHO accreditation located in Sels, Arizona. The hospital is operated by the Indian Health Service of the Bureau of Indian Affairs of the U.S. Department of the Interior.

2. The Tohono O'odham Fire Department provides fire service coverage for the reservation.

3. Emergency Medical Service is provided by the Indian Health Service EMS based at the Sels Hospital.

Present Situation

1. The Sels Hospital provides dispatch service for the Tohono O'odham Fire Department as well as the Indian Health Service EMS. It is a secondary PSAP and 911 calls are either transferred or relayed to the Fire/EMS dispatch from the Tohono O'odham Police Department.

2. The dispatch center is located in a converted mobile home. It is a single position dispatch center and there is no computer aided dispatch system. A desk top remote control unit is used for the radio system. The dispatchers also answer the hospital switchboard. There is a non-functioning Orbacom console that is kept because it does have a working clock.

3. There are five dispatchers including the lead dispatcher. The dispatchers work twelve hour shifts (10:00 – 10:00) and there is one on duty at a time.

4. There are four fire stations and four EMS stations. The departments use a shared radio system.

Present Problems

1. The current facility that is used for dispatch is in extremely bad condition. Grounding is not to standard, the linoleum is peeling from the floor and the security is very limited.

2. Most of the time, 911 calls are relayed rather than transferred by the police dispatch. As a result, the fire/EMS dispatcher does not have direct contact with the caller.

3. There are numerous areas where radio coverage is limited especially from portable radios.

4. Getting helicopter ambulances dispatched is too slow of a process.

Future Requirements

1. None.

Additional Comments

1. None.

The draft of this record was sent to Mark Adams on March 31, 2006.
Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address:
Mark Adams
Indian Health Service, Sels, AZ

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2. Dispatch Center Survey

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Indian Health Service, Sels, AZ**
File Name:	-	**Tohono O'odham Fire Ems Dispatch Interview Record Final.doc**
Date of Interview:	-	**March 3, 2006**
Location of Interview:	-	**Sels Hospital**
Persons Interviewed:	-	**Mark Adams, Chief Emergency Medical Services** **Mike Harris, Lead Medical Dispatcher**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Sels Hospital, which was built in 1961, is a 34-bed facility with JCAHO accreditation located in Sels, Arizona. The hospital is operated by the Indian Health Service of the Bureau of Indian Affairs of the U.S. Department of the Interior.

2. The Tohono O'odham Fire Department provides fire service coverage for the reservation.

3. Emergency Medical Service is provided by the Indian Health Service EMS based at the Sels Hospital.

Present Situation

1. The Sels Hospital provides dispatch service for the Tohono O'odham Fire Department as well as the Indian Health Service EMS. It is a secondary PSAP and 911 calls are either transferred or relayed to the Fire/EMS dispatch from the Tohono O'odham Police Department.

2. The dispatch center is located in a converted mobile home. It is a single position dispatch center and there is no computer aided dispatch system. A desk top remote control unit is used for the radio system. The dispatchers also answer the hospital switchboard. There is a non-functioning Orbacom console that is kept because it does have a working clock.

3. There are five dispatchers including the lead dispatcher. The dispatchers work twelve hour shifts (10:00 – 10:00) and there is one on duty at a time.

4. There are four fire stations and four EMS stations. The departments use a shared radio system.

Present Problems

1. The current facility that is used for dispatch is in extremely bad condition. Grounding is not to standard, the linoleum is peeling from the floor and the security is very limited.

2. Most of the time, 911 calls are relayed rather than transferred by the police dispatch. As a result, the fire/EMS dispatcher does not have direct contact with the caller.

3. There are numerous areas where radio coverage is limited especially from portable radios.

4. Getting helicopter ambulances dispatched is too slow of a process.

Future Requirements

1. None.

Additional Comments

1. None.

The draft of this record was sent to Mark Adams on March 31, 2006.
Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address:
Mark Adams
Indian Health Service, Sels, AZ

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CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: **Tohono O'odham Nation Fire Department**

Contact Name: _____ **Position:** _____

Phone: _____ **Email:** _____

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement _____ Combined Fire/EMS _____

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) _____

Other: _____

Please list the agencies and describe the geographic area served by your communications center

_____
_____
_____
_____
_____

911 Services Provided:

Primary PSAP _____ Secondary PSAP _____

Basic 911 _____ Enhanced 911 _____ Wireless Phase I _____Wireless Phase II _____

VOIP 911 _____

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? _____

How many positions does your PSAP have that can answer 911 calls but not dispatch? _____

How many positions does your PSAP have that can dispatch but not answer 911 calls? _____

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received			
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1)	X	Dispatch Police/Law Enforcement	_____
Call Answering (administrative)	X	Dispatch Fire	X
Call Answering (Other) (i.e. after hours, etc.)	X	Dispatch EMS	X
Traffic Monitoring	X	Dispatch City/County Services/DPW	_____

Warrant/Article Entry/Confirm _____ Dispatch Animal Control _____

NCIC/state CIC checks _____ Other tasks performed: X

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch				
Answering Position Equipment				
Map				
CAD				
Radio Console				
UPS				
Instant Recall Recorder				
Logging Recorder				
PBX				
Master Clock				

9-1-1 System

Number of 911 lines_____

Number of other lines_____

ANI & ALI printers – number & location_____

Abandoned call alarm_____

Single Button Transfers _____

Ring down circuits _____

Telephone Service Provider TOUA

911 Service Provider _____

ALI Database Provider _____

Is 9-1-1 Equipment 20 digit ANI capable YES ☐ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☐ NO ☐

CAD System

Redundant processor Y/N? _____

911 interface Y/N?_____

RMS interface Y/N? _____

NCIC/State interface Y/N?_____

Mobile Data & AVL Y/N? _____

Logging Recorder

Channel Capacity_____

Recording format (tape, DAT, VHS, etc.)_____

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	0	0	1	1
Afternoon Shift	0	0	0	0
Night Shift	0	0	1	0

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	5	0	0	0	0	0	1
Actual FT	5	0	0	0	0	0	1
Authorized Part Time	0	0	0	0	0	0	0
Actual Part Time	0	0	0	0	0	0	0

OTHER SYSTEMS

_____

_____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

_____ _____

_____ _____

_____ _____

_____ _____

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

_____ _____

_____ _____

_____ _____

_____ _____

What agencies do you need to communicate with but cannot?

_____ _____

_____ _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

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3. Documentation Provided

- Fire Rescue Frequency Bands

TABLE 3.1.7A
Tohono O'odham Fire Department

	ATTRIBUTE	Tohono O'odham Fire Dept.
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:

0 - Attribute is NOT IMPORTANT to the user.

1 - Attribute is MINIMALLY IMPORTANT to the user.

2 - Attribute is NICE TO HAVE, could enhance operations.

3 - Attribute is USEFUL, will promote more efficient day to day operation.

4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.

5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.1.8 Tohono O'odham Tribal Police

A. Current Environment

1. Operational

The Tohono O'odham Police Department is headquartered in Sels, Arizona. The tribal officers are certified law enforcement officers in the State of Arizona. In addition to the police officers, there are also Rangers who patrol the desert areas. Most are not certified law enforcement officers and function as community service officers and enforce tribal laws.

The Tohono O'odham dispatch center is equipped with three positions. The 911 system is provided by 911 Inc. The level of 911 service is Basic 911 (no automatic location or number information is provided). Wireless 911 calls are Phase 0. The Tohono O'odham Utility Authority is the 911 service provider and they do not have mapping. Motorola Gold Elite radio consoles have been installed. A Spillman CAD/RMS system is in use, but it is not interfaced with the Pima County System. After normal business hours, the dispatchers also handle the front desk.

Current staffing is twelve telecommunicators and one dispatch supervisor. There are normally two dispatchers on duty during the day shift and three on the other shifts. Some dispatchers work ten hours shifts. Others work eight hour shifts.

The dispatch center, as well as the entire police department, does not have adequate space. The dispatcher supervisor's office also houses the department copy machine and is adjacent to the Chief's office. The room that houses the equipment is also being used as an office.

2. Functional

The Tohono O'odham Indian reservations are located within the Sonoran Desert in south central Arizona. There are four separate parcels consisting of 2,854,881 acres which is approximately the size of the State of Connecticut. The Tohono O'odham Reservation, which is the largest, consists of 2,774,370 acres located in Pima, Pinal, and Maricopa Counties. It is the second largest Indian reservation in the United States. San Xavier is the second largest land base and contains 71,095 acres just south of the City of Tucson. The smaller parcels include the 10,409-acre San Lucy District, located near the city of Gila Bend in Maricopa County and the 20-acre Florence Village, which is located near the city of Florence. The Tohono O'odham Nation consists of approximately 17,000 people. Approximately 11,000 live on the reservation. Within its land, the Nation has established an Industrial Park that is located near Tucson. Tenants of the Industrial Park include Caterpillar, the maker of heavy equipment; the Desert Diamond Casino, an enterprise of the Nation; and a twenty-three acre foreign trade zone. The largest community, Sels, functions as the Nation's capital.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received	**1983**	**1952**	**2092**
Wireless Call %	**20%**	**25%**	**30%**
Average 911 Answer Time	**5-8 secs**	**5-8 secs**	**5-8 secs**
Other Emergency Calls Received	**500**	**600**	**700**
Administrative/Non-Emergency Calls	**15-20000**		**30000-35000**
Total Incoming Calls	**40000-45000**	**45000-50000**	**50000-55000**
Police Calls Dispatched			
Police Officer Initiated	**25000-40000**	**30000-35000**	**35000-40000**
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers	**799**	**765**	**851**

Activity	2003	2004	2005
CJIS (SCIC/NCIC) Inquiries	**5000**	**5000**	**5000**
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages		**596**	
Total CJIS			

3. Technical

The police department has an eight channel radio system. Six of the channels are 800 MHz and two are UHF. The repeater for one channel is on Kitts Peak. The repeater for the second channel is on the Quijoata Range and covers the western part of the reservation. The third channel serves the San Xavier District. Channel 4 in the 800 MHz is not currently being utilized and the Uhf channels are not being utilized. The Uhf as well as Channels 3 and 4 in the 800 MHz band are not encryptable. There are typically seven units on duty during each shift.

There is no direct communication with officers working in the San Lucy District. Calls must be transferred to Maricopa County and then transferred again to the dispatch center serving the Gila Bend area.

Radio service takes a long time. If a radio can't be repaired in the field and has to be sent for service, it is a minimum of two weeks. They have installed secondary repeaters at each site.
The telephones are not serviced by the Tohono O'odham Utility Authority. There is no longer a company that services the phones located in Tucson. As a result, replacement cords and similar items that frequently break are difficult to obtain.

B. Positive Attributes of Current Environment

1. Operational

The staff functions with limited resources and space.

2. Functional

3. Technical

The radio system provides acceptable coverage in the main areas of the Tohono O'odham reservation.

C. Desired Attributes of Current and Future Environment

1. Operational

There is a significant need for improved interoperability with surrounding agencies and with the Boarder Patrol and other federal agencies.

2. Functional

There is a need for direct communications with officers working the San Lucie District in Maricopa County.

3. Technical

The dispatch center, as well as the entire police department, needs to be adequately sized. There is an urgent need for reliable internet service

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Tohono O'odham Nation Police Dispatch**
File Name:	-	**Tohono Oodham Nation Police Dispatch - Final.doc**
Date of Interview:	-	**March 3, 2006**
Location of Interview:	-	**Sels, Arizona**
Persons Interviewed:	-	**Carol Pablo, Dispatch Supervisor**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Tohono O'odham Indian reservations are located within the Sonoran Desert in south central Arizona. There are four separate parcels consisting of 2,854,881 acres which is approximately the size of the State of Connecticut. The Tohono O'odham Reservation, which is the largest, consists of 2,774,370 acres located in Pima, Pinal, and Maricopa Counties. It is the second largest Indian reservation in the United States. San Xavier is the second largest land base and contains 71,095 acres just south of the City of Tucson. The smaller parcels include the 10,409-acre San Lucy District, located near the city of Gila Bend in Maricopa County and the 20-acre Florence Village, which is located near the city of Florence. The Tohono O'odham Nation consists of approximately 17,000 people. Approximately 11,000 live on the reservation. Within its land, the Nation has established an Industrial Park that is located near Tucson. Tenants of the Industrial Park include Caterpillar, the maker of heavy equipment; the Desert Diamond Casino, an enterprise of the Nation; and a twenty-three acre foreign trade zone. The largest community, Sels, functions as the Nation's capital.

2. The Tohono O'odham Police Department is headquartered in Sels, Arizona. The tribal officers are certified law enforcement officers in the State of Arizona. In addition to the police officers, there are also thirty Rangers who patrol the desert areas.

Most are not certified law enforcement officers and function as community service officers and enforce tribal laws. There are two additional substations. The North station is approximately forty-seven miles north of Sels in the San Lucy District. The San Xavier substation is location in Tucson.

3. The Tohono O'odham Fire and EMS service is dispatched by the Indian Health Service in Sels. Fire and EMS dispatch for the San Xavier District is provided by Drexel Heights Fire Dispatch.

Present Situation

1. The Tohono O'odham dispatch center is equipped with three positions. The 911 system is provided by 911 Inc. The level of 911 service is Basic 911 (no automatic location or number information is provided). Wireless 911 calls are Phase 0. The Tohono O'odham Utility Authority is the 911 service provider and they do not have mapping. Motorola Gold Elite radio consoles have been installed. A Spillman CAD/RMS system is in use, but it is not interfaced with the Pima County System. After normal business hours, the dispatchers also handle the front desk.

2. Current staffing is twelve telecommunicators and one dispatch supervisor. There are normally two dispatchers on duty during the day shift and three on the other shifts. Some dispatchers work ten hours shifts. Others work eight hour shifts.

3. Carol Pablo has been the Public Safety Dispatch Supervisor for two years and she has been with the department for more than nine years.

4. The police department has an eight channel radio system. Six of the channels are 800 MHz and two are UHF. The repeater for one channel is on Kitts Peak. The repeater for the second channel is on the Quijoata Range and covers the western part of the reservation. The third channel serves the San Xavier District. There are typically seven units on duty during each shift.

Present Problems

1. The dispatch center, as well as the entire police department, does not have adequate space. The dispatcher supervisor's office also houses the department copy machine and is adjacent to the Chief's office. The room that houses the equipment is also an office.

2. The telephones are not serviced by the Tohono O'odham Utility Authority. There is no longer a company that services the phones located in Tucson. As a result, they can't get replacement cords and similar items that frequently break.

3. Radio service takes a long time. If a radio can't be repaired in the field and has to be sent for service, it is a minimum of two weeks. They have installed secondary repeaters at each site.

4. The internet service that is available is unreliable. In October 2005, ACJIS upgraded to an internet-based application. There have been ongoing issues ever since and technical support is very limited.

5. There is no direct communication with officers working in the San Lucy District. Calls must be transferred to Maricopa County and then transferred again to the dispatch center serving the Gila Bend area.

The draft of this record was sent to Carol Pablo on March 31, 2006.

Corrected draft was returned to CTA Communications on April 20, 2006.

Interviewee Name & Address: Carol Pablo
Dispatch Supervisor
Tohono O'odham Police Department
P.O. Box 189
Sells, AZ 85634

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2. Dispatch Center Survey

3/3

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: TOHONO O'ODHAM POLICE

Contact Name: CAROL PABLO **Position:** PUBLIC SAFETY DISPATCH SUPERVISOR

Phone: (520) 383-6412 **Email:** ____

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement 1 Combined Fire/EMS N/A

Fire only (paid/volunteer) N/A Emergency Medical Services (EMS) N/A

Other: N/A

Please list the agencies and describe the geographic area served by your communications center

TOHONO O'ODHAM POLICE
Tohono O'odhan Nation 3 million acres of land

911 Services Provided:

Primary PSAP ____ Secondary PSAP ____

Basic 911 ✓ Enhanced 911 ____ Wireless Phase I ____ Wireless Phase II ____

VOIP 911 ____

Page 1 of 6

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? N/A

How many positions does your PSAP have that can answer 911 calls but not dispatch? N/A

How many positions does your PSAP have that can dispatch but not answer 911 calls? N/A

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received	1983 +	1952 +	2092 +
Wireless Call %	20%	25%	30%
Average 911 Answer Time	5-8 sec	5-8 sec	5-8 sec
Other Emergency Calls Received	500 +	600 +	700 +
Administrative/Non-Emergency Calls	15,000-20,000		30,000-35,000
Total Incoming Calls	40,000-45,000	45,000-50,000	50,000-55,000
Police Calls Dispatched			
Police Officer Initiated	25,000-40,000	30,000-35,000	35,000-40,000
Fire Events Dispatched	N/A	N/A	N/A
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given	N/A	N/A	N/A
Number of 911 Transfers	799 +	765 +	851 +
CJIS (SCIC/NCIC) Inquiries	5000	5000 +	5000 +
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages		596	

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) ✓

Call Answering (administrative) ✓

Call Answering (Other) (i.e. after hours, etc.) ✓

Traffic Monitoring N/A

Dispatch Police/Law Enforcement ✓

Dispatch Fire N/A

Dispatch EMS N/A

Dispatch City/County Services/DPW N/A

COMMUNICATIONS

Pima County Wireless Integrated Network

Warrant/Article Entry/Confirm ✓

NCIC/state CIC checks ✓

Dispatch Animal Control N/A

Other tasks performed: N/A

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	Nine One One Inc.			
Answering Position Equipment	Nine One One Inc. & Intertel			
Map N/A				
CAD	Spillman		Summit 3.0	2001
Radio Console	Motorola			
UPS				
Instant Recall Recorder	Nine One One Inc.			
Logging Recorder	Intertel		marathon	2001
PBX				
Master Clock				

9-1-1 System

Number of 911 lines 2

Number of other lines 50+

ANI & ALI printers – number & location 1 / YES

Abandoned call alarm YES

Single Button Transfers N/A

Ring down circuits 1 / EMS

Telephone Service Provider TOUA - TOHONO O'ODHAM UTILITY AUTHORITY

911 Service Provider TOUA

ALI Database Provider TOUA

Is 9-1-1 Equipment 20 digit ANI capable YES ☐ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☑ NO ☐

CAD System

Redundant processor Y/N? N

911 interface Y/N? N

RMS interface Y/N? N

NCIC/State interface Y/N? N

Mobile Data & AVL Y/N? N

Logging Recorder

Channel Capacity 2

Recording format (tape, DAT, VHS, etc.) DVD RW

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift			4	
Afternoon Shift			4	
Night Shift			4	

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	12						
Actual FT	12						1
Authorized Part Time	N/A						
Actual Part Time	N/A						

OTHER SYSTEMS

____

____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

1 - Kitt ____

1 - Quitoa ____

1 - San Xavier ____

____ ____

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

2 - Kitt ____

2 Quitoa ____

1 - San Xavier ____

1 - Support ____

COMMUNICATIONS

Pima County
Wireless Integrated Network

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

What agencies do you need to communicate with but cannot?

___ Pima County S.O.-Comm ___ Fire-T.O.Nation (in field)
___ ADPS ___ Pinal Co. SO.
___ (U.S. Customs-Sector) ___ Pascua Yaqui Police-Comm
___ E.M.S.-T.O.Nation-in field___

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

- ACJIS technical trouble, maintenance); internet link trouble
- Radio coverage - dead spots
- Comm center space
- telephone maintenance)

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

Page 6 of 6

3. Documentation Provided

- Fire Rescue Frequency Bands

TABLE 3.1.8A
Tohono O'odham Tribal Police

	ATTRIBUTE	Tohono O'odham Tribal Police
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:

0 - Attribute is NOT IMPORTANT to the user.

1 - Attribute is MINIMALLY IMPORTANT to the user.

2 - Attribute is NICE TO HAVE, could enhance operations.

3 - Attribute is USEFUL, will promote more efficient day to day operation.

4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.

5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.1.9 Tucson Airport Authority

A. Current Environment

1. Operational

The Communications/Dispatch Department was formed in 1982 to provide public safety communications for the Tucson Airport Authority Department of Public Safety. It is now involved in other area of airport operations and serves all aspects of airport operations. Dan Morelos is the director of the department.

The communications center has an authorized staff of fourteen (director, three shift supervisors, and ten dispatchers). They are currently four dispatchers short of the authorized strength.

2. Functional

In addition to having responsibility for the Tucson International Airport, the Tucson Airport Authority is also responsible for the operation of Ryan Airport, a general aviation airport located thirteen miles west of TIA.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received	**159**	**189**	**248**
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received	**4311**	**4508**	**3617**
Administrative/Non-Emergency Calls		**2783**	**3365**
Total Incoming Calls			
Police Calls Dispatched	**4936**	**5829**	**4469**
Police Officer Initiated	**4034**	**4272**	**3430**

Activity	2003	2004	2005
Fire Events Dispatched	**1772**	**1409**	**831**
Emergency Medical Incidents	**327**	**287**	**334**
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries	**72398**	**75255**	**73691**
CJIS File Maintenance (Entries, Mods, Cancels, etc	**312**	**321**	**350**
Administrative Messages	**68**	**70**	**65**
Total CJIS			

3. Technical

The airport communications center has four positions – one of which is the supervisor's position. They use the Pima County Sheriff's Spillman CAD/RMS system. The police department uses an 800 MHZ conventional radio system. The airport fire department and airport operations use conventional UHF channels. They have Orbacom consoles.

9-1-1 calls originating on the airport are routed to the City of Tucson and then transferred back to the airport communications center. Because the airport has a low volume of 911 calls, they are not classified as a secondary PSAP. Instead they receive the voice call and the ANI/ALI information printed on a fax machine at the center. They have a Plant Electro-Key phone system.

The airport communications center receives only limited 911 caller information and they only get print-outs of the caller information.

They are able to see the call being sent to the Tucson 911 center on a monitor of their PBX system, but there is a delay until the call is transferred to them. They don't qualify for 911 funding through the state although Rural Metro, a private entity, does.

The communications center has an extensive video monitoring capability. They monitor the security and fire alarms at the airport as well as control access at key points.

B. Positive Attributes of Current Environment

1. Operational

The department received Communications Center Accreditation from the Commission on Law Enforcement Accreditation (CALEA) in 2003. They have recently completed the reaccredidation process. They are the first airport communications center to receive Communications Accreditation and the only communications center in Arizona to be accredited.

2. Functional

With the increase in passengers using the Tucson International Airport and the increased emphasis on security since September 11, 2001, the daily call volume has grown at a steady rate. Because of the unique nature of service an airport communications center provides as compared to the typical city or county, the traditional call volume statistics are not as relevant as they are for a 9-1-1 center.

3. Technical

The Airport Communications Center is located in the main terminal of the Tucson International Airport on the third level.

The Information Technology Department is expending its equipment room just below the communications center. This will allow for expansion of the equipment needed by the comm. center.

C. Desired Attributes of Current and Future Environment

1. Operational

The current communications center is outside the security envelope at the airport. Additional space is needed for both the dispatch positions and staff support.

2. Functional

With the additional security measures, increased number of police officers on duty, and addition of the role as the single point of contact for the Airport Authority, the workload has increased significantly.

3. Technical

Because of the nature of the airport's operations, there is a need to include more than the traditional public safety. In addition, improved interoperability with Federal agencies working at the airport is needed.
There is a need for improved 9-1-1 set-up. Because of the relatively low volume of 9-1-1 calls, 9-1-1 call information is faxed to the Airport Com center from Tucson 9-1-1. It does not automatically transfer to the CAD.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Tucson Airport Authority**
File Name:	-	**Tucson Airport Authority Dispatch Interview Record Final.doc**
Date of Interview:	-	**February 24, 2006**
Location of Interview:	-	**Tucson Airport Terminal**
Persons Interviewed:	-	**Dan Morelos** **Timothy Hoban**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Communications/Dispatch Department was formed in 1982 to provide public safety communications for the Tucson Airport Authority Department of Public Safety. It is now involved in other area of airport operations and serves all aspects of airport operations. Dan Morelos is the director of the department.

2. The department received Communications Center Accreditation from the Commission on Law Enforcement Accreditation (CALEA) in 2003. They have recently completed the reaccredidation process. They are the first airport communications center to receive Communications Accreditation and the only communications center in Arizona to be accredited.

3. In addition to having responsibility for the Tucson International Airport, the Tucson Airport Authority is also responsible for the operation of Ryan Airport, a general aviation airport located thirteen miles west of TIA.

Present Situation

1. The communications center has an authorized staff of fourteen (director, three shift supervisors, and ten dispatchers). They are currently four dispatchers short of the authorized strength.

2. The airport communications center has four positions – one of which is the supervisor's position. They use the Pima County Sheriff's Spillman CAD/RMS system. The police department uses an 800 MHZ conventional radio system. The airport fire department and airport operations use conventional UHF channels. They have Orbacom consoles.

3. 9-1-1 calls originating on the airport are routed to the City of Tucson and then transferred back to the airport communications center. Under the Arizona Administrative Code, the airport is classified a tertiary PSAP. The code stipulates that in order to qualify as a primary or secondary PSAP, the PSAP must receive a minimum of 300 9-1-1 emergency calls per month. Instead they receive the voice call and the ANI/ALI information printed on a fax machine at the center. As a result, they do not receive any 911 funding through the state. They have a Plant Electro-Key phone system.

4. The communications center has an extensive video monitoring capability. They monitor the security and fire alarms at the airport as well as control access at key points. One of the crash rescue trucks is equipped with the capability to send live video.

5. There are limited back-up facilities for the communications center in the bell room at the airport fire station.

6. The Communications Center communicates extensively with airport operations and links between the airlines and airport personnel.

Present Problems

1. The current location of the communications center is in the main terminal but outside of the security envelope. There is concern about the vulnerability of the center.

2. Interoperability is primarily through the telephone.

3. The airport communications center receives only limited 911 caller information and they only get print-outs of the caller information.

They are able to see the call being sent to the Tucson 911 center on a monitor of their PBX system, but there is a delay until the call is transferred to them. They don't qualify for 911 funding through the state although Rural Metro, a private entity, does.

Future Requirements

1. Because of the nature of airport operations, there is a need for more than public safety to be included in the PCWIN Project, especially in lieu of the heightened security emphasis following September 11, 2001.

Additional Comments

1. None.

The draft of this record was sent to Daniel Morelos on March 20, 2006.
Corrected draft was returned to CTA Communications on April 10, 2006.

Interviewee Name & Address: Daniel Morelos, Director
Tucson Airport Authority Communications
7005 South Plumer Avenue
Tucson, Arizona 85706

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2. Dispatch Center Survey

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Tucson Airport Authority - Communications/Dispatch

Contact Name: Daniel Morelos **Position:** Director of Communications/Dispatch

Phone: (520) 573-8016 **Email:** dmorelos@tucsonairport.org

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement __1__ Combined Fire/EMS _N/A__

Fire only (paid/volunteer) __1__ Emergency Medical Services (EMS) _N/A_

Other: _4_

Please list the agencies and describe the geographic area served by your communications center

_TAA Police Department - Airside and Landside (Tucson Int'l Airport & Ryan Airfield)
_TAA Fire Department - Airside and Landside (Tucson Int'l Airport & Ryan Airfield)
_TAA Airport Operations - Airside and Landside (Tucson Int'l Airport)
_TAA Planning & Development - (Tucson Int'l Airport & Ryan Airfield)
_TAA Crisis Response Team - Airside and Landside (Tucson Int'l Airport)
_Ryan Operations – Airside and Landside (Ryan Airfield)

911 Services Provided:

Primary PSAP _____ Secondary PSAP X

Basic 911 X Enhanced 911 _____ Wireless Phase I _____Wireless Phase II _____

VOIP 911 _____

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 4

How many positions does your PSAP have that can answer 911 calls but not dispatch? N/A

How many positions does your PSAP have that can dispatch but not answer 911 calls? N/A

Activity	2003	2004	2005
Wireline 911 Calls Received	Awaiting information City 9-1-1		
Wireless 911 Calls Received			
Total 911 Calls Received	159	189	248
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received	4311	4508	3617
Administrative/Non-Emergency Calls	N/A	2783	3365
Total Incoming Calls			
Police Calls Dispatched	4936	5829	4469
Police Officer Initiated	4034	4272	3430
Fire Events Dispatched	1772	1409	831
Emergency Medical Incidents	327	287	334
Medical Pre-Arrival Instructions Given	N/A	N/A	N/A
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries	72398	75255	73691
CJIS File Maintenance (Entries, Mods, Cancels, etc.	312	321	350
Administrative Messages	68	70	65

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X

Call Answering (administrative) X

Call Answering (Other) X
(i.e. after hours, etc.)

Traffic Monitoring _____

Dispatch Airport Police X

Dispatch Airport Fire X

Dispatch EMS _____

Dispatch TAA Services/DPW X

Warrant/Article Entry/Confirm X Dispatch Animal Control _____

NCIC/state ACIC checks X Other tasks performed: X

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch				
Answering Position Equipment	Plant Electronics	ElectroKey	N/A	1992
Map				
CAD	Spillman	Summit	4.5	2005
Radio Console	Orbacom	Resource	2.0	2002
UPS	APC	Silicon	?	2001
Instant Recall Recorder	Dictaphone	Call Check	1.0.121	2001
Logging Recorder	Dictaphone	Freedom	2.0.1.0	2001
PBX	Lucent	Definity	G3SI?	1999
Master Clock	Chrono-Log	K-Series	N/A	1992

9-1-1 System

Number of 911 lines: 2

Number of other lines: 14

ANI & ALI printers – number & location: 1 (fax machine located in Comm. Center)

Abandoned call alarm: N/A

Single Button Transfers: N/A

Ring down circuits: 19

Telephone Service Provider: Time Warner Comunications

911 Service Provider: QWest Communications

ALI Database Provider: Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☐ NO ☒

Can 9-1-1 Equipment "rebid" ALI YES ☐ NO ☒

CAD System - *The Departments CAD system is provided by the Pima County Sheriff Department. The software is called (Summit) and access to this system provides us with CAD functions. We have backdoor access to ACJIS, incident reports, radio logs, etc. Our CAD system is networked and accessed at all (4) positions. We pay a nominal usage fee and all hardware costs.*

Redundant processor Y/N? Y

911 interface Y/N? Y

RMS interface Y/N? Y

NCIC/State interface Y/N? Y

Mobile Data & AVL Y/N? N/A

Logging Recorder

Channel Capacity 32

Recording format (tape, DAT, VHS, etc.): Raid Array

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	N/A	N/A	4	1
Afternoon Shift	N/A	N/A	3	1
Night Shift	N/A	N/A	3	1

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	10	3					1
Actual FT	7	3					1
Authorized Part Time							
Actual Part Time							

OTHER SYSTEMS

Access Control System
Closed Circuit Television System
Fire Alarm Monitoring System
Emergency Notification System
Security Alarm Monitoring
Lighting Detection System

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

Channel 1 – PD Operations
Channel 4 – FD Operations
Channel 2 – PD TM
Freq. 3 – Airport Operations
Freq. 4 – Ryan Airfield Operations
Freq. 1 - TAA Planning & Development

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Channel 3 – PD/FD Tactical Operations
Channel 6 – FD TM
Freq. 4 - TAA Crisis Response Team

What agencies do you need to communicate with but cannot? Refer to Interoperability Matrix

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns, which you might have. Continue on a separate sheet of paper if you wish.

Please Refer to Needs Assessment Questionnaire

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

3. Documentation Provided

- Law Enforcement Frequency Bands
- 050603AZInterop Pima Matrix - Tucson Airport 022206.xls
- Channel Plan - Communications Needs Assessment Questionnaire 2/22/06

TABLE 3.1.9A
Tucson Airport Authority Police

	ATTRIBUTE	Tucson Airport Authority Police
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.1.10 University of Arizona Police Department

A. Current Environment

. Operational

The Communications Section is responsible for the radio dispatching of UAPD personnel to calls for service. The Communications Section is part of the Operations Support Division of the University of Arizona Police Department. Kevin Haywood is the Division Commander. The Operations Support Division is responsible for Communications Crime Prevention, Traffic Enforcement, Community Service Officers, Special Events, Training, Public Information and Accreditation. Luis Puig is the Operations Support Coordinator and is responsible for the various systems in use in the department as well as the Communications Section. Matt Ferguson is the Communications Supervisor and is responsible for the day-to-day operation for the dispatch center.

The Tucson Fire Department provides fire and emergency medical services to the campus. There is a ring down line between the U of A dispatch and the Tucson Fire Dispatch.

The Communications Section monitors almost 2,500 alarm points in University buildings. These alarms include robbery, panic, burglary and fire alarms. In addition to these alarms, Dispatchers also receive notice of other alarms through private and contracted companies who have alarm systems installed on University property.

2. Functional

The University of Arizona campus in Tucson consists of 378 acres and 174 buildings. There are approximately 34,000 students and 14,000 employees on campus.

The Tucson campus is approximately one square mile. The University of Arizona Police Department also has responsibility for providing law enforcement services to the campus of the University Arizona in Tucson. In addition, they have responsibility for providing services to the Mount Graham International Observatory (MGIO) in Safford, Arizona, approximately seventy-five miles from the Tucson campus. The MGIO Division provides law enforcement, initial fire suppression and medical services to the entire project site. The department's staffing compliment consists of 52 certified police officers, 15 police aides, 21 non-certified civilians, and 9 students. Typically there are a total of twenty to thirty units on duty. The University of Arizona Police Department is accredited by the Commission on Accreditation of Law Enforcement Agencies.

Activity	2003	2004	2005
Wireline 911 Calls Received	**7888**	**6906**	**6958**
Wireless 911 Calls Received		**342**	**469**
Total 911 Calls Received	**7888**	**7248**	**7427**
Wireless Call %			
Average 911 Answer Time	**4 Seconds**	**4 Seconds**	**3 Seconds**
Other Emergency Calls Received			
Administrative/Non-Emergency Calls	**72592**	**77904**	**64718**
Total Incoming Calls	**80480**	**85152**	**64718**
Police Calls Dispatched	**12912**	**13659**	**13087**
Police Officer Initiated	**8**	**192**	**324**
Fire Events Dispatched	**25**	**28**	**29**
Emergency Medical Incidents	**273**	**284**	**306**
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			
CJIS Total Messages	**71569**	**67350**	

3. Technical

The dispatch center is located in the police facility which was constructed in 2000. They have a three position dispatch center. Watson dispatch workstations have been installed and they also have Motorola Gold Elite radio consoles and Plant VESTA 911 Customer Premises Equipment. The department is using the City of Tucson's PRC CAD system. Two of the three radio consoles are equipped with touch screen. There are four 911 trunks and five administrative lines. All incoming calls for the department are answered by the dispatch center.

There is a problem with the roof of the building. The membrane has shifted and the roof leaks during heavy rains. The leak is directly over the dispatch equipment room and has caused outages.

From 1992 until 2000, the University of Arizona Police Department used the Pima County Spillman CAD and RMS system. In 2001, they switched to the City of Tucson's Northrop Grumman (PRC) system.

They still have access to the Spillman system. The PRC system is more dispatcher friendly. It requires fewer keystrokes, the ACJIS access is better, and the screens are easier to read quickly. With the Spillman system from the dispatch perspective, it was cumbersome to switch between windows. The Spillman records management system is better than the PRC RMS system. It does a better job of showing previous involvements and is linked to the jail management system.

Officers are able to enter flags into the system, but it doesn't do a good job of verifying the information.

The U of A Police Department is a three channel repeated UHF conventional radio system. They also have a car-to-car channel.

They use the same frequencies at Mt. Graham and tie the two locations together by Arizona Department of Public Safety microwave.

Tucson Fire and some Tucson Police Department units have the capability to talk on the University's channels. The department has some Tucson Police radios. The dispatch center has a portable that is programmed with the Tucson Police channels in order to monitor traffic in the vicinity of the campus. There is generally good coverage throughout the campus, even in buildings. There are some problem areas in building basements

The radios are equipped with identifiers. This causes lag time when the mic is keyed while the identifier information is transmitted. The causes the first part of an officer's transmission to be lost if they don't wait a second after keying the mic.

The department uses the Tucson Police Department's mobile data system. Not only does this give access to the CAD and records management systems, it also allows U of A PD officers to communicate with Tucson officers via their terminals.

B. Positive Attributes of Current Environment

1. Operational

With Tucson annually hosting 5 or 6 University of Arizona football games each with 50,000 people in attendance, twelve or more basketball games with an average attendance of more than 14,000 as well as numerous other campus events, what would be a major challenge for many locations is routine for the LECC and area public safety agencies. This carries over to other situations and leads to a high level of competency in dealing with major emergencies.

2. Functional

During football and basketball games as well as other special events, there may be as many as seventy to eighty officers on duty. The police department uses outside officers to compliment their staff. The various public safety agencies are well practiced at handling these kinds of events. This has led to a high degree of preparedness for handling other unusual occurrences.

3. Technical

From 1992 until 2000, the University of Arizona Police Department used the Pima County Spillman CAD and RMS system. In 2001 they switched to the City of Tucson's Northrop Grumman (PRC) system. They still have access to the Spillman system. The PRC system is more dispatcher friendly. It requires fewer keystrokes, the ACJIS access is better, and the screens are easier to read quickly.

With the Spillman system from the dispatch perspective, it was cumbersome to switch between windows. The Spillman records management system is better than the PRC RMS system. It does a better job of showing previous involvements and is linked to the jail management system.

C. Desired Attributes of Current and Future Environment

1. Operational

The U of A PD needs a suitable backup facility.

2. Functional

Additional room is needed in order for the dispatch center to expand to keep up with the increasing workload.

3. Technical

In addition to a non-leaking roof, improved interoperability with Tucson and other agencies is desired. The University's mobile command post is equipped with two radio consoles. It functions as the back-up for the dispatch center and is equipped with VHF, UHF, and 800 MHz radios. Improved telephone and CAD access are required.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	University of Arizona Police Dispatch
File Name:	-	University of Arizona Police Dispatch Interview Record Final.doc
Date of Interview:	-	February 28, 2006
Location of Interview:	-	Building, Address
Persons Interviewed:	-	Luis Puig, Operations Support Coordinator Matt Ferguson, Communications Supervisor Kevin Hammond, Operations Support Commander
CTA Interviewer:	-	Nate McClure

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The University of Arizona campus in Tucson consists of 378 acres and 174 buildings. There are approximately 34,000 students and 14,000 employees on campus. The Tucson campus is approximately one square mile.

2. The University of Arizona Police Department has responsibility for providing law enforcement services to the campus of the University Arizona in Tucson. In addition, they have responsibility for providing services to the Mount Graham International Observatory (MGIO) in Safford, Arizona, approximately seventy-five miles from the Tucson campus. The MGIO Division provides law enforcement, initial fire suppression and medical services to the entire project site. The department's staffing compliment consists of 52 certified police officers, 15 police aides, 21 non-certified civilians, and 9 students. Typically there are a total of twenty to thirty units on duty. During football and basketball games as well as other special events, there may be as many as seventy to eighty officers on duty. The police department uses outside officers to compliment their staff. The University of Arizona Police Department is accredited by the Commission on Accreditation of Law Enforcement Agencies.

3. The Communications Section is part of the Operations Support Division of the University of Arizona Police Department. Kevin Haywood is the Division Commander. The Operations Support Division is responsible for Communications Crime Prevention, Traffic Enforcement, Community Service Officers, Special Events, Training, Public Information and Accreditation. Luis Puig is the Operations Support Coordinator and is responsible for the various systems in use in the department as well as the Communications Section. Matt Ferguson is the Communications Supervisor and is responsible for the day-to-day operation for the dispatch center.

4. The Tucson Fire Department provides fire and emergency medical services to the campus. There is a ring down line between the U of A dispatch and the Tucson Fire Dispatch.

5. The Communications Section monitors almost 2,500 alarm points in University buildings. These alarms include robbery, panic, burglary and fire alarms. In addition to these alarms, Dispatchers also receive notice of other alarms through private and contracted companies who have alarm systems installed on University property.

Present Situation

1. The dispatch center is located in the police facility which was constructed in 2000. They have a three position dispatch center. Watson dispatch workstations have been installed and they also have Motorola Gold Elite radio consoles and Plant VESTA 911 Customer Premises Equipment. The department is using the City of Tucson's PRC CAD system. Two of the three radio consoles are equipped with touch screen.

2. The Communications Section has an authorized staff of eight full-time dispatchers, one part-time dispatcher, and a communications supervisor. Approximately sixty percent of the time, there are two dispatchers on duty. There is only one dispatcher on duty the remaining time. The staff works ten hour shifts.

3. The U of A Police Department is a three channel repeated UHF conventional radio system. They also have a car-to-car channel. They use the same frequencies at Mt. Graham and tie the two locations together by Arizona Department of Public Safety microwave. Tucson Fire and some Tucson Police Department units have the capability to talk on the University's channels. The department has some Tucson Police radios. The dispatch center has a portable that is programmed with the Tucson Police channels in order to monitor traffic in the vicinity of the campus.

There is generally good coverage throughout the campus, even in buildings. There are some problem areas in building basements

4. The University's mobile command post is equipped with two radio consoles. It functions as the back-up for the dispatch center and is equipped with VHF, UHF, and 800 MHz radios.

5. The department uses the Tucson Police Department's mobile data system. Not only does this give access to the CAD and records management systems, it also allows U of A PD officers to communicate with Tucson officers via their terminals.

6. There are four 911 trunks and five administrative lines. All incoming calls for the department are answered by the dispatch center.

Present Problems

1. There is a problem with the roof of the building. The membrane has shifted and the roof leaks during heavy rains. The leak is directly over the dispatch equipment room and has caused outages.

2. Officers are able to enter flags into the system, but don't do a good job of verifying the information.

3. The radios are equipped with identifiers. This causes lag time when the mic is keyed while the identifier information is transmitted. The causes the first part of an officer's transmission to be lost if they don't wait a second after keying the mic.

Additional Comments

1. From 1992 until 2000, the University of Arizona Police Department used the Pima County Spillman CAD and RMS system. In 2001 they switched to the City of Tucson's Northrop Grumman (PRC) system. They still have access to the Spillman system. The PRC system is more dispatcher friendly. It requires fewer keystrokes, the ACJIS access is better, and the screens are easier to read quickly. With the Spillman system from the dispatch perspective, it was cumbersome to switch between windows. The Spillman records management system is better than the PRC RMS system. It does a better job of showing previous involvements and is linked to the jail management system.

The draft of this record was sent to Captain Paul Wilson on March 28, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address:
Captain Paul Wilson
Sheriff
Pima County Sheriff's Department
1750 E. Benson Highway
Tucson, AZ 85714

M:\FILES\20099 Pima County, AZ\20099A - Business Architecture Planning\interview\Final\University of Arizona Police Dispatch Final.doc

2. Dispatch Center Survey

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

2/28

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: The University of Arizona Police Department

Contact Name: Luis Puig **Position:** Operations Support Coordinator

Phone: (520) 626-8256 **Email:** lpuig@uapd.arizona.edu

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement 1 Combined Fire/EMS _____

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) _____

Other: _____

Please list the agencies and describe the geographic area served by your communications center

UAPD
_____
_____
_____
_____

911 Services Provided:

Primary PSAP X Secondary PSAP _____

Basic 911 _____ Enhanced 911 _____ Wireless Phase I _____ Wireless Phase II X

VOIP 911 X

COMMUNICATIONS

Page 1 of 1

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 3

How many positions does your PSAP have that can answer 911 calls but not dispatch? 0

How many positions does your PSAP have that can dispatch but not answer 911 calls? 1

Activity	2003	2004	2005
Wireline 911 Calls Received	7888	6906	6958
Wireless 911 Calls Received	Not Available	342	469
Total 911 Calls Received	7888	7248	7427
Wireless Call %	Not Available	0.4%	0.7%
Average 911 Answer Time	4 Seconds	4 Seconds	3 Seconds
Other Emergency Calls Received	N/A	N/A	N/A
Administrative/Non-Emergency Calls	72592	77904	64,718
Total Incoming Calls	80480	85152	72,145
Police Calls Dispatched	12912	13659	13087
Police Officer Initiated	8-documented	192-documented	324-documented
Fire Events Dispatched	25	28	29
Emergency Medical Incidents	273	284	306
Medical Pre-Arrival Instructions Given	0	0	0
Number of 911 Transfers	Not Available	Not Available	Not Available
CJIS (SCIC/NCIC) Inquiries	See Below	See Below	See Below
CJIS File Maintenance (Entries, Mods, Cancels, etc	See Below	See Below	See Below
Administrative Messages	71,569 Total Trns	67,350 Total Trns	

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X — Dispatch Police/Law Enforcement X

Call Answering (administrative) X — Dispatch Fire — Initial Call

Call Answering (Other) (i.e. after hours, etc.) X — Dispatch EMS — Initial Call

Traffic Monitoring ____ — Dispatch City/County Services/DPW ____

Warrant/Article Entry/Confirm X

Dispatch Animal Control ____

NCIC/state CIC checks X

Other tasks performed: Monitor Fire Alarms
Disp General Maintenance Mechanic
Disp Residence Life Maintenance & Custodial

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch				
Answering Position Equipment	Plant Equipment	Vesta	2.20	3/2000 Upgrade 1/10/2005
Map	Plant Equipment	Orion Map Star	5.1	2004
CAD	Northrup Grumman			
Radio Console	Motorola	Centracom Elite	R08.05.05	3/2000
UPS	Libert	UPS Station 53		
Instant Recall Recorder	Plant Equipment	Vesta	2.20	3/2000
Logging Recorder	Dictaphone	Guardian		6/94
PBX				
Master Clock				

9-1-1 System

Number of 911 lines4

Number of other lines5

ANI & ALI printers – number & location1 / Communications Room

Abandoned call alarm_____

Single Button Transfers _____

Ring down circuits 1

Telephone Service Provider Qwest

911 Service Provider Qwest

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? _____

911 interface Y/N?Y

RMS interface Y/N? Y

NCIC/State interface Y/N?Y

Mobile Data & AVL Y/N? Mobile Data - YES / AVL - NO

Logging Recorder

Channel Capacity12

Recording format (tape, DAT, VHS, etc.)DAT

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift			1-2	1
Afternoon Shift			1-2	0
Night Shift			1-2	0

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	8	1					1
Actual FT	8	1					1
Authorized Part Time	1			1			
Actual Part Time	1			1			

OTHER SYSTEMS

_____

_____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

UAPD - 1 Daily

UAPD - 2 Daily

UAPD - 3 Daily

MGIO - 1 Daily

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Gateway For Testing Only

_____ _____

_____ _____

What agencies do you need to communicate with but cannot?

_____ _____

_____ _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Field Supervisors can communicate with the Tucson Police Department on portable radioes regarding routine calls; accidents crossing boundaries, assisting TPD on Part I and Part II crimes near campus, etc. Occassionally, TPD Commanders come up on UAPD-1 to ask for assistance. Tucson Fire can also transmit on UAPD-1. Usually done to clarify location and status of medical and fire calls on campus.

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

COMMUNICATIONS

3. Documentation Provided

- Mobile Command Post Radio Frequencies
- Law Enforcement Frequency bands
- Campus map
- Coplink project

TABLE 3.1.10A
University of Arizona Police

	ATTRIBUTE	University of Arizona Police
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.2 City of Tucson

3.2.1 Tucson Fire Department

A. Current Environment

1. Operational

Tucson has experienced significant, rapid growth. Over the past twenty years, the population of the city has increased by forty-four percent. That same rate of growth is expected to continue for the next twenty years. Fire department emergency responses have increased by 233% of the past thirty years.

The Communications Division is organized under the General Services Department of the City of Tucson. The Division is deployed in two general operations, the Primary PSAP functions for the City; and the Fire and EMS dispatch operation for the City.

The Division provides emergency call-taking and dispatching services for the City of Tucson. This includes answering 9-1-1 calls and transferring them to the appropriate jurisdiction. The Operations section provides dispatching services for the Tucson Fire Department and, on a contractual basis, dispatching services for five county fire districts; the Northwest Fire District, Golder Ranch Fire District, Avra Valley Fire District, Three Points Fire District and Picture Rocks Fire District. The Section also operates Tucson MEDS Control, a centralized medical dispatching service for Pima County and portions of Southern Arizona. In addition, the section also serves as the control point for non-emergency radio activity of other city divisions and departments. This function includes being an after-hour, weekend, and holiday contact point for citizens requesting city services.

The Division is staffed by 85 positions. Twenty are used in the Primary PSAP and 54 in the Secondary PSAP/Fire and EMS dispatch. Eleven personnel are supervisory, technical support, and management. Staffing – At the time of this interview there were seven unfilled dispatcher positions in the operations division. That is approximately 12.96 percent of the authorized staff.

The Communications Maintenance Section is responsible for the installation, and maintenance of the various communications systems used by the City.

The Information Technology Department supports the various information technology applications used by agencies of the City and provides strategic planning for information technology on a citywide basis.

Anita Velasco is the Administrator of the Communications Division. As such she is responsible for both the Radio Operations Section and the Communications Maintenance Section. She also is the Pima County 9-1-1 Coordinator for the regional 911 system. Jim Merten is the Communications Superintendent and David Jones is the Communications Coordinator for the Radio Operations Section. Rich Brace is the Superintendent of the Communications Maintenance Section. Christine O'Conner is the Deputy Director of the Department of Information Technology. Carl Dresher is an Information Technology Administrator and John Crosby is the Superintendent of Emergency Communications Data Services. Yvonne Morken is the Information Technology Manager for the Tucson Fire Department.

2. Functional

The Primary PSAP answers 9-1-1 calls for the City of Tucson (by the nature of 9-1-1 these could be law enforcement, fire, or medical calls).

The Secondary PSAP and Fire/EMS dispatch operation (adjacent to the Primary PSAP) dispatches and provides radio support for the City of Tucson Fire Department, NorthWest Fire, Golder Ranch Fire, Avra Valley Fire, Three Points Fire and Picture Rocks Fire Departments. This Section operates Tucson MEDS Control, the centralized medical dispatching service for the Pima County region. Wireless 9-1-1 calls located generally within the City boundaries are received at the Tucson Primary PSAP. These calls are then transferred to the Secondary PSAP's as required. The routing locations given by the providers seem fairly accurate.

Incoming 911 calls, both wireline and wireless, are answered by the Emergency 911 Operators. They determine the location and nature of the call, and then transfer the call to either the police or fire call takers or to another agency as appropriate. The call takers then get the necessary information and enter the call into the CAD system. In 2005, the Primary PSAP answered 621,372 911 calls with an average answer time of five seconds. In addition to the calls transferred to them, the secondary Fire/Medical PSAP received another 103,717 emergency calls by other means and also answered 336,183 administrative or non-emergency calls.

The personnel classification in the primary PSAP is the Emergency 9-1-1 Operator. This position is responsible for determining if a Police, Fire or Medical emergency exists. The protocol used to determine the primary agency responsible for a particular response was determined by Tucson Police and Tucson Fire. For example, a motor vehicle accident with injuries is transferred to the medical dispatcher. The medical dispatcher notifies police of the incident. Tucson has found by using this initial call screening procedure, fire and medical calls are not delayed due to the large call volumes within the Police Department.

In addition to providing dispatch service for the six departments noted above, the section provides the MEDS Control function for the region.

This involves patching the responding medical units with the emergency rooms of the area hospitals. They also arrange for medical helicopter response to the scene when request by field units. The dispatch operation also provides ground control, and landing zone control for the three helicopter ambulance/rescue services:

- Arizona Department of Public Safety
- LifeNet - from Oklahoma
- LifeLine - from Tucson

The operation is the dispatch and call taking facility for the City Water Department during non-office hours.

Certain jurisdictions within the geographic boundaries of the City provide limited dispatching and call handling operations. These entities are:

- Pima Community College – where law enforcement calls are transferred to them with an accompanying print-out of the ALI/ANI information. Tucson Fire provides fire services for the College.

- University of Arizona – provides full 9-1-1 and public safety services but Tucson Fire responds to the campus facilities.

- Davis Monthan Air Force Base – provides police and fire services but again the City Fire Department responds to the Base.

The operation handles medical calls via a ring down line to Rural Metro/South West Ambulance and Three Points Ambulance.

The following statistics are representative.

Activity	2003	2004	2005
Wireline 911 Calls Received	**343,791**	**336,817**	**293,104**
Wireless 911 Calls Received	**226,445**	**264,094**	**323,265**
Total 911 Calls Received	**570,236**	**600,911**	**621,372**
Wireless Call %	**39.7**	**43.9**	**52**
Average 911 Answer Time	**3**	**4**	**5**
Other Emergency Calls Received	**88,188***	**89,309***	**103,717***
911 Lines	66,894*	68,633*	79,885*
R.D. Lines	19,822*	19,397*	22,255*
Radio Initiated	1,427*	1,279*	1,031*
Administrative/Non-Emergency Calls	**304,487**	**1,012,461**	**1,060,726**
Total Incoming Calls	**962,911**	**1,012,461**	**1,060,726**
Police Calls Dispatched	**N/A**	**N/A**	**N/A**
Police Officer Initiated	**N/A**	**N/A**	**N/A**
Fire Events Dispatched	**17,122**	**16,938**	**19,509**
Emergency Medical Incidents	**71,066**	**72,371**	**83,662**
Medical Pre-Arrival Instructions Given	**1,611**	**1,678**	**1,776**
Number of 911 Transfers	**517,997**	**546,877**	**528,787**
CJIS (SCIC/NCIC) Inquiries	**N/A**	**N/A**	**N/A**
CJIS File Maintenance (Entries, Mods, Cancels, etc	**N/A**	**N/A**	**N/A**
Administrative Messages	**N/A**	**N/A**	**N/A**
Total CJIS	**N/A**	**N/A**	**N/A**

3. Technical

The operation is supported by an Application Data Systems, Inc. (ASDi) computer assisted dispatch system (CAD). The system was initiated in 12/91, however many upgrades and improvements have been implemented since that time.

Many of the programs have been tailored to the Tucson Fire and EMS operation; with features and functions that are unique to

Tucson and Tucson's operational environment. The ASDi CAD serves the Primary PSAP and the Fire and EMS dispatch operation. Reliability seems satisfactory. The last major upgrade was in 02/04. The CAD is interfaced to the Fire records management system (RMS) and is compliant with the NIFRS fire reporting system in use nationally. Previous events are displayed and approximately four months of call data is maintained on-line.

The Communications Division has made extensive modifications to the software in order to meet the needs of the department. The CAD system currently has ten defined response areas with sixty different jurisdictional divisions. Based on the location and jurisdiction, there are over 4,600 incident types. The system provides predefined responses for up to five alarm levels per incident type. Many of the Tucson Fire Department's units serve multiple functions. An engine company may also be a paramedic assessment unit, a hazardous materials engine, technical rescue unit and so forth. The CAD system is able to make unit recommendations based on the different functions. It prioritizes calls based on nine different priority levels. The CAD system dynamically makes unit recommendations based on the closest appropriate unit in terms of distance and jurisdiction. The system also has the ability to rotate assignments between multiple companies at a single fire house.

The CAD system controls fire station alerting and provides automatic paging through interfaces with commercial paging services.

The fire department mapping system uses quarter mile grids. On fire calls, the CAD system searches the grid that the call is in as well as eight surrounding grids for out of service fire hydrants. It provides premises alerts in the same way (primary and surrounding grids).

The fire stations have access to the CAD system. The CAD system interfaces to the records management system. Tucson uses a fire records management system also by ADSi. Northwest Fire District uses Firehouse's RMS. Dispatch has access to 120 days of closed incidents and two to three weeks of unit history records on line.

The Tucson Fire Department has had an Automatic Vehicle Location System (AVL) in operation since 1997. The system automatically updates each unit's location in CAD every 13 to 15 seconds. The information is not graphically displayed for the dispatcher. Instead it is displayed as coordinates (350S/1220E). The system is in the process of being updated.

Units are equipped with mobile terminals which run the ADSi mobile client. There are status buttons on the terminals which allow the units to change their status. The dispatchers can do this manually as well.

The system uses IBM's High Availability Cluster Multiprocessing (HACMP). There are two clusters – one for CAD and one for Tucson Fire's RMS. There is a stand-by dispatch computer at the Tucson Police Department's Headquarters downtown. All data files on the standby system are automatically updated every four hours. There is no scheduled system downtime. Very few outages occur.

The operation uses radio console provided by Kustom Consoles. Some of the equipment dates to the 1970's.

A City local area network (LAN) provides interconnectivity throughout the City and its operations. This is supported by over 41 microwave hops. These are largely being transferred to a fiber optic network in the near future.

The 9-1-1 equipment is a new Plant MAGIC system. The center uses 36 and 13 (49) 9-1-1 lines and 104 other telephone lines. The PBX is a Centrex system provided by Avaya. Qwest is the LEC, line exchange carrier for the Center.

The Center is fully supported by UPS systems and emergency generators.

The operation is supported by the City and County GIS Department. The mapping is MAP STAR and is currently based on latitude and longitude. AVL information is updated every 13 to 15 seconds. The data base in use is ESRI Shape files using digital orthophotography input.

Commercial alarms are received via telephone. The City building alarms are called straight to the Fire call taker positions.

The Zetron paging encoder is used for the outer Fire Departments. The CAD system makes recommendations, however the Zetron system is not connected to an automated paging function.

Tone outs to the City Fire and EMS stations are currently through the microwave but will be through the fiber network soon.

There are 10 hospitals in the Tucson area. The center is connected to each one through ring down circuits. Each Emergency Room is also equipped with a radio on the Med 9 frequency.

B. Positive Attributes of Current Environment

1. Operational

One of the striking characteristics of this operation is the quality and attitude of the staff and management. Everyone encountered was proud of their organization and the role that they have in the community.

All operators interviewed commented on the responsiveness and effort of the supervisory staff. The operation is able to carry out its tasks even in the face of some technical and other issues.

2. Functional

The dispatch environment is complicated with many differing jurisdictions involved.

The Center is able to handle the large volume of traffic that is generated by their complex community. The operation has been able to keep up with the growth and increase in calls in the community.

3. Technical

Many of the systems in use are getting older and vendor support has not always been as desired. The operation is overcoming this by the strong and effective effort of their support staff, and that of the IT Department.

In some cases the operators are using equipment that is older than they are themselves; yet the Divisions technical staff is keeping the equipment running and reliable.

C. Desired Attributes of Current and Future Environment

1. Operational

Many of the desired improvements for the operators had to do with the physical working environment:

- There is a desire to have surfaces, carpets and console designs to be easier to reach and keep clean.

- Air quality it could still be improved upon; more air movement is needed and eliminate of chemical smells when cleaning.
- Individual lighting controls at the positions.
- Noise reduction in the dispatch area.
- More visually soothing colors and have more supportive chairs.
- Wire management system to control and organize all of the wires and cables in and around the console positions.
- More security cameras for the parking lot area.
- Messaging in the CAD or consoles.
- Cleaner restrooms.
- Sufficient electrical plugs at the positions.
- Better control of room temperatures
- Quiet Room with a telephone and an exercise area.

2. Functional

The call volume is currently being handled; however with the expected increase in calls with community growth the staff will need to be brought up to full staffing.

3. Technical

A new radio console is required. The radio console equipment is at the end of the maintainability. Parts are difficult to obtain.

Radio coverage within the City is not complete and needs to be improved.

The system should have an improved interoperability technology. The current radio interoperability "Gateway" device is difficult to use

4. Attributes Matrix

Please refer to TABLE 3.2.1A, a summary of system attributes that may be emphasized in a PCWIN regional communications system.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	City of Tucson – Communications Division
File Name:	Pima County Tucson Fire Dispatch Interview Record FINAL.doc
Date of Interview:	February 23, 2006
Location of Interview:	City Communications Center 4004 S Park Ave
Primary Interviewee:	Anita C. Velasco Communications Administrator
CTA Interviewers:	JM Dye

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Communications Division is organized under the General Services Department of the City of Tucson. The Division is deployed in two general operations, the Primary PSAP functions for the City; and the Fire and EMS dispatch operation for the City.

2. Both operations are located in the S Park Avenue location as well as the Tucson Police Dispatch/PSAP center (discussed separately).

3. The Primary PSAP answers 9-1-1 calls for the City of Tucson (by the nature of 9-1-1 these could be law enforcement, fire, or medical calls). The Secondary PSAP and Fire/EMS dispatch operation (adjacent to the Primary PSAP) dispatches and provides radio support for the City of Tucson Fire Department, Northwest Fire, Golder Ranch Fire, Avra Valley Fire, Three Points Fire and Picture Rocks Fire Departments. This Section operates Tucson MEDS Control, the centralized medical dispatching service for the Pima County region, and other areas of Southern Arizona as needed.

4. The dispatch operation also dispatches, provides ground control, and landing zone control for four helicopter ambulance/rescue services:

   - Arivaca
   - Arizona Department of Public Safety
   - LifeNet - from Oklahoma
   - LifeLine - from Tucson

5. Certain jurisdictions within the geographic boundaries of the City provide limited dispatching and call handling operations. These entities are:

   - Pima Community College – where law enforcement calls are transferred to them with an accompanying print-out of the ALI/ANI information. Tucson Fire provides fire services for the College.

   - University of Arizona – provides full 9-1-1 and public safety services but Tucson Fire responds to the campus facilities.

   - Davis Monthan Air Force Base – provides police and fire services but again the City Fire Department responds to the Base.

   - The Native American lands that are within the City are dispatched as other areas of the City.

6. Contact with Rural Metro/South West Ambulance is via ring down line. Southwest Ambulance is under contract to provide all BLS ambulance transports within the City limits of Tucson.

7. Wireless 9-1-1 calls located generally within the City boundaries are received at the Tucson Primary PSAP. These calls are then transferred to the Secondary PSAP's as required. Wireless Phase 2 has been implemented and the routing locations given by the providers seem fairly accurate.

8. Also housed within the Primary PSAP operational area is the dispatch and call taking function for all City Departments. This position is active during normal business hours, and functions as an after-hour answering service for many City Departments.

Present Situation

1. The Division is staffed by 85 positions. Twenty are used in the Primary PSAP and 54 in the Secondary PSAP/Fire and EMS dispatch. Eleven personnel are supervisory, technical support, and management.

2. The operation is supported by an Application Data Systems, Inc. (ASDi) computer assisted dispatch system (CAD). The system was initiated in 12/91, however many upgrades and improvements have been implemented since that time. Many of the programs have been tailored to the Tucson Fire and EMS operation; with features and functions that are unique to Tucson and Tucson's operational environment. The ASDi CAD serves the Primary PSAP and the Fire and EMS dispatch operation for both Tucson Fire and the outlining districts. The system is highly reliable. The last major upgrade was in 02/04. The CAD is interfaced to the Tucson Fire records management system (RMS) and is compliant with the NIFRS fire reporting system in use nationally. Previous events are displayed and approximately four months of call data is maintained on-line, and years of data are available off-line. AVL information is updated every 13 to 15 seconds, and the data is used by CAD to determine the closest, appropriate unit for dispatching. CAD provides a unit recommendation when a call is brought up for dispatch.

3. The operation uses radio console provided by Kustom Consoles. Some of the equipment dates to the 1970's.

4. A City has a local area network (LAN) within the Communications Center that supports CAD. Firewalls provide the necessary security and a method to reach the City's wide area network (WAN). The WAN provides interconnectivity throughout the City and all its operations. This is supported by over 41 microwave hops. A new microwave system is currently being installed, and the new microwave will have connectivity to the City's extensive fiber network.

5. The 9-1-1 equipment is a new Plant Vesta system. The center uses 36 and 13 (49) 9-1-1 lines and 104 other telephone lines. The primary PSAP has 36 9-1-1 lines, 14 of which provide backup to the Pima County Sheriff's PSAP. The secondary PSAP has 13 9-1-1 lines, along with 104 other telephone lines. The PBX is a Centrex system provided by Avaya. Qwest is the local exchange carrier (LEC) for the Center.

6. The Center is fully supported by UPS systems and emergency generators.

7. The mapping is MAP STAR and is currently based on latitude and longitude. The base maps are provided by the City and County GIS Department. The data base in use is ESRI Shape files using digital orthophotography input. The City Communications Center provides updates to all maps used in all PSAP's in Pima County. Support staff downloads the new base maps from Pima County, processes the file and adds the cellular layer. The new maps are then pushed out to each PSAP.

8. Commercial alarms are received via telephone. The City building alarms are called straight to the Fire call taker positions by the commercial alarm company.

9. A Zetron paging encoder is used for the Fire Departments other than Tucson Fire. The CAD system makes recommendations, however the Zetron system is not connected to CAD and so fire house packages are not automatically opened. An automated paging function is included within CAD.

10. Tone outs to the City Fire and EMS stations are currently through the microwave but will be through the fiber network soon.

11. There are 10 hospitals in the Tucson area. The center is connected to each one through ring down circuits. Eight of ten of these ringdowns are supported by the City's microwave. Each Emergency Room is also equipped with a radio on the Med 9 frequency.

<u>Present Problems</u>

1. The radio console equipment is at the end of the maintainability. Parts are difficult to obtain.

2. There are some radio dead spots within the City operating area.

3. The radio interoperability "Gateway" device is difficult to use. While it is easily activated, field units often fail to remember it is available. Getting units to switch once it is activated it difficult.

Future Requirements

1. Various Call Takers and Dispatchers were interviewed with the following issues and statements:

- Many mentioned that management is very supportive and responds quickly to requests; however, many issues cannot be readily addressed.
- The design of the room and equipment is not easily cleaned. There is a desire to have surfaces, carpets and console designs to be easier to reach and keep clean.
- Although many attempts have been made to improve air quality it could still be improved upon; mention was made of more air movement needed and the elimination of chemical smells when cleaning.
- Would like to have individual lighting controls at the positions.
- Need steps for noise reduction in the dispatch area.
- Would like the room to have more visually soothing colors and have more supportive chairs.
- Would like to have a wire management system to control and organize all of the wires and cables in and around the console positions.
- There will always be a lot of verbal and visual communications in a center and would not want any design that restricted this or where monitors blocked everyone's view.
- There was apparently an event in the parking lot and would like more security cameras for that area.
- Communications between the Fire and Police Departments is difficult and would like some form of messaging in the CAD or consoles.
- Would like cleaner restrooms.
- There are insufficient electrical plugs at the positions.

- Room temperatures fluctuate and are difficult to control.
- Would like a 'Quiet Room' with a telephone and an exercise area.

The draft of this record was sent to Anita C. Velasco on March 20, 2006.

Corrected draft was returned to CTA Communications on May 12, 2006.

Anita C. Velasco
Communications Administrator
Tucson Communications Division
4004 S Park Ave
Tucson, Arizona 85714

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2. Dispatch Center Survey

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: **City of Tucson/Communications – 911 & Fire/Medical Dispatch**

Contact Name: **Anita Velasco** **Position:** **Communications Administrator**

Phone: **791-3112** **Email:** **Anita.Velasco@tucsonaz.gov**

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement _____ Combined Fire/EMS 6

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) 4

Other: _____

Please list the agencies and describe the geographic area served by your communications center

Fire & Medical
Tucson Fire Department services City Limits of Tucson,
Northwest Fire, Golder Ranch Fire, Avra Valley Fire, Picture Rocks Fire and Three Points Fire. Districts service northwest Pima County

EMS - Helicopters

911 Services Provided:

Primary PSAP X (911) Secondary PSAP X (Fire & Medical)

Basic 911 _____ Enhanced 911 X Wireless Phase I XWireless Phase II X

VOIP 911 X

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? Primary 0 / Secondary 8

How many positions does your PSAP have that can answer 911 calls but not dispatch? Primary 8 / Secondary 4

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Activity	2003	2004	2005
Wireline 911 Calls Received	**343,791**	**336,817**	**293,104**
Wireless 911 Calls Received	**226,445**	**264,094**	**323,265**
Total 911 Calls Received	**570,236**	**600,911**	**621,372**
Wireless Call %	**39.7**	**43.9**	**52**
Average 911 Answer Time	**3**	**4**	**5**
Other Emergency Calls Received	**88,188***	**89,309***	**103,717***
911 lines	**66,894*	**68,633*	**79,885*
R.D. Lines	**19,822*	**19,397*	**22,255*
Radio Initiated	**1,472*	**1,279*	**1,031*
Administrative/Non-Emergency Calls	**304,487**	**322,241**	**336,183**
Total Incoming Calls	**962,911**	**1,012,461**	**1,060,726**
Police Calls Dispatched	**N/A**	**N/A**	**N/A**
Police Officer Initiated	**N/A**	**N/A**	**N/A**
Fire Events Dispatched	**17,122**	**16,938**	**19,509**
Emergency Medical Incidents	**71,066**	**72,371**	**83,662**
Medical Pre-Arrival Instructions Given	**1,611**	**1,678**	**1,776**
Number of 911 Transfers	**517,997**	**546,877**	**528,787**
CJIS (SCIC/NCIC) Inquiries	**N/A**	**N/A**	**N/A**
CJIS File Maintenance (Entries, Mods, Cancels, etc	**N/A**	**N/A**	**N/A**
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X

Call Answering (administrative) X

Call Answering (Other) X
(i.e. after hours, etc.)

Dispatch Police/Law Enforcement N/A

Dispatch Fire X

Dispatch EMS X

Traffic Monitoring	N/A	Dispatch City/County Services/DPW	X
Warrant/Article Entry/Confirm	N/A	Dispatch Animal Control	N/A
NCIC/state CIC checks	N/A	Other tasks performed:	N/A

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	Plant	Vesta	2.2 Serv. Pk. 2	3/27/06
Answering Position Equipment	Plant	Vesta		3/27/06
Map	Plant	Mapstar	5.1	
CAD	Application Data Systems, Inc. (ADSi)	CADForce	N/A	12/07/91 – last major update 02/04
Radio Console	Kustom Console	-------	-------	1982
UPS	Powerware	9315-50/50 (Qty 2)	Po5003261200112	May 1998
Instant Recall Recorder	Dictaphone	5713	-------	04/17/89
Logging Recorder	CVDS Inc.	70117	06/13/05	06/30/02
PBX	Admin-Centrex			
Master Clock	Spectracom	8183	02/07	01/23/97

9-1-1 System

PRIMARY PSAP	SECONDARY PSAP
1. 36	1. 13
2. 2	2. 102

1. Number of 911 lines_____
2. Number of other lines_____
3. ANI & ALI printers – number & location 2 Locations: 911 room and Supv Ofv
4. Abandoned call alarm 2 - Locations: 1 in 911, and 1 in Vesta
5. Single Button Transfers 16

6. Ring down circuits PRIMARY 2 / SECONDARY 91

Telephone Service Provider Qwest

911 Service Provider Qwest

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? Y

911 interface Y/N?Y

RMS interface Y/N? Y

NCIC/State interface Y/N? N

Mobile Data & AVL Y/N? Y

Logging Recorder

Channel Capacity 96

Recording format (tape, DAT, VHS, etc.)Raid Array, DVD

Staffing

On-Duty Staff	9-1-1 CALL TAKER	FIRE/MEDS CALL TAKER	Shift Supervisor/Lead Dispatcher
0700-2300	4	12	1
2300-0700	4	11	1

Primary PSAP

	9-1-1 Call Taker
Authorized Full Time	20
Actual FT	18
Authorized Part Time	0
Actual Part Time	0

Secondary PSAP

	Call Taker Dispatcher	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt / Admin
Authorized Full Time	54	7	1*	0	1	0	2
Actual FT	42	6	1	0	1	0	2

***Database/GIS Support comes from a different Organization.**

OTHER SYSTEMS

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

TFD-F1, F2, F3, F4, F5, F6, F10 _____

County Fire-C1, C2, C3, C4 _____

Meds-CH10, Telem-Ch1, 4, 6, 8 _____

Gen Servc-GS1, GS2, GS4 TRAN, GS6 _____

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Mutual Aid CH5 _____

Gateway _____

_____ _____

GS-3 _____

What agencies do you need to communicate with but cannot?

Rural Metro FD _____ Drexel Heights FD

DM Fire _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Radio Coverage
To talk with other agencies requires a number of steps utilizing the Gateway frequency.
Console Equipment
Capacity for additional frequencies

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

3. Computer System Checklist – Dispatching Operations

Instructions for Dispatching Operations Checklist

The Pima County community is in the process of reviewing the current communications systems. We are asking that the Dispatch Operations Departments participate in an information gathering process to assist in obtaining information regarding the existing Computer Assisted Dispatch operating systems in use in the community. The intent of this review is to determine the size and capacity required now, and in the future, and elicit responses concerning operational features. The existing systems may require enhancement for size and capacity; as well as the addition of new features and functions. The existing systems should be applied to standards created by the National Fire Prevention Association in their NFPA 1221. The NFPA 1221 provisions have been adopted by the Commission on Accreditation for Law Enforcement Agencies (CALEA) for CAD systems. These NFPA 1221 requirements as they apply to CAD systems are included at the end of this document for your review.

The checklist contains functions found in many, modern CAD systems. The goal is to identify the functions desired by the dispatch operations community. The checklist contains entries that apply to law enforcement, fire, EMS, and call taking. You should respond to areas that affect your operation.

We ask you to read closely the following checklist. This checklist contains response areas, which we are asking that you complete. This section may be returned on the original forms provided. Each item in this response document should be marked with one of the following responses:

C - Function is completely supplied by existing system (s).

A- Function is desired and would be an add–on to the current system.

M - Function is desired and could be provided with modifications to the existing software package.

NA- Function does not apply to this agency.

X - Function is not required or desired.

This part of the checklist should include a response to each element marked as above for additional information. In the event that additional information is required it can be provided

on a separate sheet and further describe the the specific requirement. Additional information should indicate the element number to avoid any ambiguity and should identify any additional comments or explanation required.

If there are other features, functions, or concerns that you have, please write them out in free form and simply attach them to your checklist.

We thank you in advance for your efforts.

Call Taking Functions

Incident Entry

X_____There shall be single format for entering event data, i.e., law enforcement and fire/EMS events use the same format.

The initial entry and subsequent modification of an incident shall be logged into a file that includes:

C_____Date/Time stamp
C_____User ID
C_____Workstation location
X_____Information changed with before and after "image'

The system must accept the following data elements in a preformatted screen:

C_____Location of incident
C_____Additional location comments, independent from narrative information
C_____Incident type for each type of service to respond
X_____Incident type to create multiple types of service
C_____Ability to override priority by dispatcher
C_____Reporting party name
C_____Reporting party address
C_____Reporting party phone
X_____Vehicle description
X_____Suspect description
M_____Unlimited text information (via repetitive entry and field scrolling functions)

The following facilities must be supported:

C_____Address verification based on street name (Soundex) and street address number block range. Soundex can be activated/deactivated by system administrator.
C_____Addresses can be entered into the system by street intersection or common place names.
C_____Address verification produces appropriate Fire district; Law Enforcement beat, etc. and recommends most appropriate unit to dispatch based on:

C_____Type of call
C_____Unit availability
C_____Response zone proximity – **Real time closest unit**
C_____Dispatcher can override unit recommendations.
C_____Dispatcher can override response zones.
C_____Units can be relocated to appropriate stations.
UNK* Location verification occurs via function key prior to saving.
UNK* Response to location verification choices is not required prior to entry of additional event
C_____Ability to freely move directly to any field in input form.

*Don't understand description

Incident Type Codes

C_____Incident type codes must be validated during incident entry.

M_____There must be the ability to display selection list for incident types.

M_____There must be the ability to select incident type from a displayed list, with data automatically inserted in field.

The incident type code must automatically provide the following information:

C_____Description of incident type
C_____Priority level or requirement for manual specification
NA___Dispatch-to-on scene timeout value
NA___On scene-to-next status change timeout value specific or non-standard incident routing

NA___The above information must be modifiable on-line.

E-911 (ANI/ALI)

C_____The CAD system must interface directly to the telephone company E-911 system.

C_____Information from E-911 (calling number and service address) must appear automatically on the incident entry screen without specific operator action.

C_____The E-911 information must be accepted into the dispatch information by dispatcher pointing device or function key action.

C_____The E-911 information display must be able to capture all information as provided by the telephone company backup display.

C_____The E-911 location can be utilized without specific operator action, unless manually overridden.

C_____If the E-911 information is overridden, it must still be recorded in the incident record for later review.

C_____The E-911 location information must be validated using the geographic files on the CAD system, which are received from the Public Safety geo-database.

C_____The operator must be able to answer the E-911 telephone call prior to displaying an incident input form; the E-911 information must be automatically displayed when the entry form is displayed and continuously able to be recalled until a new call is answered or cleared by operator.

Geographic File Interface

C_____The system shall provide the capability to use longitude/latitude for designating geographic locations. This functionality shall provide an accuracy of +/- 125 meters according to the latest FCC Rules 94.102 and 98-245.

X_____All locations must be entered in "free form", without requiring the entry of data into specific data fields in the input form.

C_____The system must support the entry of apartment number, lot numbers and so forth as part of the "free form" location field.

M_____Partial ("half") addresses must be supported.

C_____Premise address modifiers must be supported (e.g., 432B MAPLE ST Apt XXX).

X_____Premise address entry must result in a display of both low and high cross streets.

C_____Intersection entry must result in a display of the premise addresses of both streets at the intersection.

C_____Common place name entry displays equivalent address or establishment number/Identifier.

C_____The system must have a "near match" capability in order to identify street or common place names for which no exact match is found in the geo-file.

C_____A minimum of two characters is needed to result in a street or place name selection list.

C_____The "near match" capability must be based on a dynamic algorithm to match names; it shall not require a predefined list of misspellings.

C_____The system must support an "alias" function to permit use of alternative names such as "10th" for "Tenth", "JFK Dr" for "John F. Kennedy Drive", etc.

C_____Street name choices for intersections must be presented only for streets, which physically intersect.

C_____The operator must be able to enter common place locations by specifying any word in the place name.

C_____The operator must be able to verify the address at any time during incident entry process by function key request. **No function key required – automatic verification**

X_____The operator must be able to override the information from the geographic file during incident entry.

NA____The system shall produce a report of all locations entered as operator overrides.

C_____The operator must be able to change any location entered and/or validated at any time prior to final incident acceptance by simply re-keying the location into the input form.

C_____Any call taker or dispatcher must be able to update an incident location at any time following incident acceptance.

M____Whenever a location is updated, a record of all prior locations, which have been entered, must be maintained in the incident record.

C____The system must automatically route the incident to the dispatcher responsible for the location entered but without interfering in any way with multiple dispatchers working the call simultaneously.

C____The dispatcher shall be notified of address jurisdiction.

Priority Incident Interrupt

X____The operator must be able to interrupt and suspend an incident that is being entered in order to service an incident, which has a higher urgency.

X____This interruption can be made at any time by function key.

X____An indication shall be displayed to the call taker to indicate the number of incidents suspended.

X____The system administrator can set the limit to the number of calls, which can be suspended.

X____Following the entry of the high priority incident, the system must automatically resume processing of the interrupted incident(s) when recalled by the operator.

Fast-Transfer Incident Entry

C____A critical incident can be entered at any time following the entry of location and type information. A fast-transfer incident can be entered with no more keystrokes than needed for normal entry.

X____Following a fast-transfer entry, the input screen must be prepared to allow immediate entry of additional information simultaneously by multiple operators.

M____The dispatcher must be notified that the call taker is entering additional information.

M____The fast-transfer function can be repeated any number of times during the entry or supplement of an incident.

Incident Transfer to Dispatch

C_____The system must automatically route a new incident to the appropriate dispatch workstation(s) depending upon the location of the incident and the call classification (Law Enforcement, Fire, or EMS).

C_____The operator must be able to override the automatic routing of incidents by location for routing to a specific dispatcher(s) depending upon type of incident.

C_____An incident can be automatically routed to a predefined dispatcher(s) for special incident types.

Duplicate Incident Detection

C_____During incident entry, the call taker shall be notified of any active incidents near the one being entered but this shall in no way interfere with the normal call-taking functions.

C_____The duplicate detection process shall be advisory only; the operator shall determine whether the new call is a duplicate, and whether to proceed with this transaction.

M_____The call taker must be able to display the complete record of any potential duplicate by function key without interrupting current data collection process.

X_____The duplicate incident can be supplemented with the new information by function key request but this shall in no way interfere with the normal call-taking functions.

C_____If an incident is entered which is later determined to be a duplicate of another incident, the dispatcher must be able to cancel the incident.

Premise and Hazard Information

C_____The system must contain a file containing data stored by location. This data can include information on threats against public safety officials, hazardous substances stored, locations of invalids, etc.

C_____The hazard file must be automatically checked during incident entry.

C_____A permanent notification of the presence of hazard information must be recorded in the incident history.

C_____The actual text of the hazard record shall be stored in the incident history record only for specific types of hazards.

C_____Hazard file records must have a purge cycle, which prevents access after a preset date or time period.

C_____Hazard file records can be entered for permanent retention.

C_____Multiple hazard records can be entered for a single location.

M_____The dispatcher must be able to display all hazard data within a specified distance from a unit or incident.

Prior Incident Information

M_____All prior incident activity on file at an incident's location must automatically be displayed.

M_____Prior incident recording must not require operator action and shall not interfere with the normal functions of the operator.

M_____A warning must be displayed for recent prior incidents within a time span designated by a user configuration.

M_____Detailed prior incident information must be accessible by function key.

Entry of Non-Dispatch Calls

C_____The system must have the ability to record incidents where no dispatch occurs.

C_____Non-dispatch calls must be entered in the incident history file, and shall be accessible via all standard incident access functions.

X_____An incident entered in this fashion can be later reopened and dispatched normally with a date/time stamp.

Entry of Completed Calls

C_____The system shall allow for the entry of calls that have been previously handled but not yet entered into the system, due to conditions such as system unavailability.

X_____Completed calls of this type can be activated for the purpose of unit assignment.

Multiple Types of Service

C_____The call taker must be able to enter a single call for service, specifying multiple types of service.

C_____Certain incident types must automatically generate the appropriate multiple types of service responses.

M_____This process must not require separate actions for each type of service.

C_____Any supplementary information that any call taker adds to any incident entered in this fashion shall be automatically added to each related incident.

Dispatching Functions

Pending Incident Display

C_____A list of pending incidents must be available for continuous display to the controlling dispatcher.

C_____Incidents shall be listed according to priority and entry time.

C_____The dispatcher must be warned whenever a new or updated incident is added to the pending incident display.

C_____Any position can display all pending incidents, or only those for one or more specific dispatch positions.

X_____The system must provide an indication in this display, which indicates which incident, is currently being reviewed by the dispatcher.

X_____At any position display of pending incidents shall show which ones are currently being reviewed by the responsible dispatchers but shall not interfere in any way with the normal function of any workstation.

The system must display, at a minimum, the following information for each incident in the pending incident display:

C_____Incident number
C_____Incident type code
X_____Description of incident code
X_____Priority level
C_____Number of minutes waiting
C_____Incident location
C_____Dispatch control area
X_____Law Enforcement beat or fire station as applicable
X_____Hazard warning and complete hazard information
X_____Preassigned unit identifier

The system must support a visual warning, set by the system administrator, for incidents in the pending list or while being viewed by dispatcher or call taker when any of the following special conditions occur:

X____Incident is being viewed by controlling dispatcher.
C____Wait time has exceeded allowable maximum (by priority).
M____Supplementary information has been added to incident.
X____Incident cancellation has been requested.
X____Incident location, type or priority has been changed.
X____Preassigned unit is unavailable for assignment to incident.
X____Pending incident timeout warning must be updateable by dispatcher.
C____None of the visual warnings listed above shall interfere in any way with the normal function of the workstation.

Incident Control

C____The dispatcher shall have the flexibility to process pending calls in any sequence.

C____An incident may be worked by multiple positions.

C____The dispatcher may select calls for dispatching by incident number or unit number.

M____The dispatcher may select calls for dispatching by mouse reference.

C____The system must automatically present calls for dispatch in priority sequence, sorted by time

C____The dispatcher must be able to quickly request the display and unit recommendation for any specific call at any time.

M____The dispatcher may request the display of a pending call by pointing to it with a mouse or pointing device.

C____The dispatcher must be able to share the control of any pending incident with another dispatcher at anytime.

C____Any dispatcher can dispatch units to another dispatcher's incident.

X____An incident can be dispatched directly from the pending incident monitor without redisplay after initial review.

X____A unit may be assigned to a pending incident by pointing to the unit and the incident with a mouse.

X____The dispatcher must be able to place any call on "hold" with a unique visual indicator to show hold status, placing it back in the pending queue, so that the next call in sequence can be displayed.

Incident Review

The system must provide a mechanism whereby the dispatcher can review a pending incident prior to dispatch. This review must show critical incident information, including:

C____Jurisdiction
C____Incident number
C____Incident type or nature code
C____Description of incident type
X____Initial incident location
C____Current reported location
X____Any prior reported location
C____Name, address and telephone of reporting party
C____Hazard information associated with incident location
M____Summary of prior incidents at the same location
M____Warning of recent vs. old prior call
X____Warning that incident is in a different area of control
NA___Suspect name and vehicle information
X____Law Enforcement beat, fire station, EMS post as applicable
C____Recommended unit(s) for dispatch
C____Incident narrative information
C____All prior unit assignments and status changes
UNK__Times of all previous status changes *(don't understand)*

NA___Automatic scrolling must be utilized in cases where the entire event cannot be completely displayed, showing the most recent information.

C_____Manual line-level scrolling must be supported in addition to paging of displayed incident.

M_____The displayed incident must notify viewing party of update information while the incident is displayed.

X_____Viewing party should have ability to update incident with new information with a single keystroke.

X_____A pending incident must be able to be displayed by command or by pointing device (e.g., mouse, and trackball).

Law Enforcement Unit Recommendation

Units must be recommended dynamically using, at a minimum, the following criteria:

_____Jurisdiction
_____Incident location
_____Incident type
_____Incident priority
_____Type of units required
_____Number of units required
_____Current unit status
_____Beat assignment
_____Nearest adjacent beat

_____Up to four Law Enforcement units shall be recommended but not required, in order of decreasing suitability, based upon the above criteria.

_____"Adjacent beat" shall be determined by incident location within the primary beat.

_____The system must indicate the recommended number of units to respond according to the type of incident.

_____The dispatcher must be able to override the recommended units at any time.

_____Unit recommendation criteria must be user-definable by incident type and priority.

_____Unit recommendation criteria must be modifiable on-line at any time.

_____A unit's type must be able to be changed during its shift, with appropriate change to unit recommendation (e.g., from a one-person to a two-person unit).

_____Unit recommendation plans must be able to be changed dynamically.

_____Unit beat assignment must be able to be designated when a unit comes on-duty.

Fire Unit Recommendation

Units must be recommended dynamically using a fire "run card" using, at a minimum, the following criteria:

C_____Jurisdiction
C_____Incident location
C_____Incident type
C_____Current unit status
C_____Number of units required
C_____Type of units needed
X_____Fire station location

C_____Any number of units can be recommended at a time.

C_____Units shall be recommended according to current fire station assignment, considering current unit cover and move-up assignments (unlimited).

C_____In the event of greater alarms, unit recommendation must take into account units already assigned, providing the necessary equipment to satisfy the greater alarm requirements.

C_____Unit recommendation criteria must be modifiable on-line at any time.

M_____Standard move-ups must be displayed upon request.

M_____Multiple move-ups can be entered via a single command.

EMS Unit Recommendation

Units must be recommended dynamically using a EMS "run card" using, at a minimum, the following criteria:

C_____Jurisdiction
C_____Incident location
C_____Incident type
C_____Current unit status
C_____Number of units required
C_____Type of units needed
X_____EMS station location

C_____Any number of units can be recommended at a time.

C_____Units shall be recommended according to current EMS station assignment, considering current unit cover and move-up assignments (unlimited).

C_____Fire units that have EMS capacity will be utilized in accordance with their availability and EMS classification.

C_____Unit recommendation criteria must be modifiable on-line at any time.

Dispatch and Control of Units

C_____Recommended units must be dispatchable with a single keystroke.

C_____QThe dispatcher can alter recommended units.

M_____Recommended units can be selected by mouse reference.

X_____Units must be able to be assigned to a pending incident directly on the pending incident list, without requesting detailed incident display.

C_____Units cannot be assigned without initial detailed incident display and review.

C_____There must be no limit to the number of units, which can be assigned to single incident.

M_____Any number of incidents must be able to be preassigned to a single unit.

M____A unit or units may be assigned via pointing device without keyboard entry.

Status history maintained for each unit must include:

C____All status changes
C____Current Unit location
M____Date/time of all unit status changes, recorded to the nearest second with
U____Alarms specified by default or by each dispatcher if desired.

M____Timers can be set by type of call or by dispatcher discretion. Officer numbers for each unit assigned

M____Officer names for each unit assigned

M____Workstation identifier making each status change

M____Operator identifier making each status change

X____Operator name making each status change

X____Each dispatcher can select units displayed.

Required Status Keeping Functions

C____Unit status changes shall be entered as single transactions, specifying new status and one or more units.

M____Unit status change may be entered by mouse or keystroke, selecting unit and desired status.

C____Unit status changes must not require the display of an incident record.

C____Comments can be added to any unit status change, and will be recorded with the incident's and unit's permanent record.

X____Previous status change commands can be displayed for review and/or correction and reentry by function key request.

M____The unit identifier can be entered prior to the status code.

M____Status may be able to be entered by referencing the unit display and a status code via pointing device or keyboard.

_____The system must support the following incident control and unit status command functions.

C_____Dispatch one or more units to an incident

NA___Assign backup units to an incident

C_____Replace one unit with one or more other units

C_____Preempt a unit to service a higher priority call

C_____Place one or more units onscene

C_____Place a unit available-on-scene (onscene but available for unit recommendation and assignment)

C_____Place a fire unit available-on-radio or pager

C_____Place a fire unit available-in-quarters

C_____Place an EMS unit available-on-radio or pager

C_____Place an EMS unit available-in-quarters

C_____Add information to an incident

M____Add information to a unit's history record, whether available or assigned to an incident

NA___Enter pursuit information from several workstations concurrently

C_____Clear a unit back to service

X_____Change unit location while still on call

C_____New unit location may be validated against on-line geofiles

C_____Reset unit back to incident location without requiring reentry of original location

NA___Initiate a traffic stop or onview, resulting in an automatic license plate inquiry by the system

NA___Unit location at a traffic stop is validated against on-line geofiles

NA___Initiate a subject stop

NA___Indicate that the personnel are out of vehicle and must be contacted via hand-held radio or other means

NA___Request initial case number for an incident

NA___Request additional case numbers for a single incident

NA___Specify a unit timeout-warning interval

NA___Change the beat responsibility of a unit

C_____Place a unit on duty and available for dispatch

C_____Enter final disposition or incident type

M_____List all nearby hazards within a specified distance

Unit Definition and Control

C_____Any combination of up to 5 letters and numbers can be used as unit identifiers. *(2 lettters/3numbers*

X_____Unit type, shift, patrol area or other similar information need not be encoded as part of the structure of the unit ID.

X_____An on-duty unit's identifier can be changed while keeping a continuous unit history record (does not require units to be logged off duty).

X_____An on-duty unit's recommendation rules can be changed without requiring unit log off.

Transfer of Unit and Incident Control

C_____System must have a command allowing designation of a new primary unit on an active call.

C_____The control of any on-duty unit can be passed from one dispatch position to another, regardless of unit status.

C_____Any incident can be transferred from one dispatch position to another, regardless of incident status.

C_____Any dispatcher must be able to "take over" the dispatching and control of any incident at any time from any workstation without interrupting the original dispatcher.

C_____The dispatcher must be able to assign another dispatcher's unit(s) to any incident.

C_____In the above case, current unit status information shall be displayed on both the original unit's dispatcher's and the requesting dispatcher's displays.

Out of District Display

C_____Any dispatcher must be able to display dynamic unit and incident status for any dispatch control area in addition to the areas controlled.

Available and Active Law Enforcement Unit Displays

A dynamic display shall be provided for all units that are available for dispatch, which shows:

NA___Jurisdiction
NA___Unit identifier
NA___Unit assigned but available for dispatch
NA___Special unit type or classification
NA___Officers out-of-vehicle (on portable radio)
NA___Unit scheduled on-duty prior to confirmation of status
NA___MDT equipment status

A dynamic display shall be provided for all units assigned to incidents, which shows:

NA___Unit identifier
NA___Current unit status
NA___MDT equipment status
NA___Time since last unit status change
NA___Incident number
NA___Incident type and priority
NA___Incident type description
NA___Unit beat
NA___Unit control area
NA___An indication if the unit is operating out of its normal area
NA___An indication if the unit was assigned as a backup unit

NA___A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

NA___A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented. This warning shall be differentiated from the warning in the previous item.

NA___Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

NA___Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active Fire Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

M____Jurisdiction
C____Unit identifier
C____Unit status
X____Unit station
X____Unit MDT equipment
X____Units are ordered by associated station.
C____Units can be ordered by equipment type.

X____The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

C____Jurisdiction
C____Incident number
C____Incident type
C____Current alarm level
C____Incident working time
C____Firebox number [or appropriate geographic data]
C____Incident location

With each active incident, the status monitor must list assigned units, in sequence by alarm level, showing:

C____Jurisdiction
C____Unit identifier
C____Unit status
X____Time since assignment
X____Time since last unit status change
X____Any covering unit
X____Unit location if different from incident

M____Notes or comments associated with a unit

X____Units shall be grouped by priority level at time of assignment.

C____Unit status monitor displays must be useable by color-blind dispatch operators.

C____A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

X____A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

C____Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

C____Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active EMS Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

M____Jurisdiction
C____Unit identifier
C____Unit type
C____Unit status
X____Unit station
X____Unit MDT equipment
X____Units are ordered by associated station.
C____Units can be ordered by equipment type.

X____The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

C_____Jurisdiction
C_____Incident number
C_____Incident type
C_____Incident working time
C_____Incident location

With each active incident, the status monitor must list assigned units, in sequence by priority level, showing:

C_____Jurisdiction
C_____Unit identifier
C_____Unit status
X_____Time since assignment
X_____Time since last unit status change
X_____Any covering unit
X_____Unit location if different from incident
M_____Notes or comments associated with a unit

X_____Units shall be grouped by priority level at time of assignment.

C_____Unit status monitor displays must be useable by color-blind dispatch operators.

C_____A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

X_____A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

C_____Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

C_____Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Incident Record Keeping Requirements

The system must keep date/time stamped records of all incidents passing through the dispatch process. These records shall contain:

C_____Jurisdiction
C_____Incident number
C_____Case number(s)
C_____Incident location
C_____Initial and final incident type
C_____Final disposition
C_____Time of initiation (time of phone call)
C_____Time of incident entry
C_____For each assigned unit, the time of dispatch and all status changes
C_____All data taken by the call taker
C_____All information subsequently added
M_____Name and ID number of personnel in each unit assigned
C_____Name and ID number of each workstation operator who enters any information or status concerning the incident.

C_____The system must allow the entry of an unlimited amount of supplementary data about an incident.

C_____A permanent audit trail must be maintained for all information recorded with an incident, whether or not that information is later modified or deleted.

Assignment of Case Numbers

C_____A sequence of "case" numbers must be kept independently from the number assigned to each incident and jurisdiction.

X_____Each agency can have multiple series of case numbers, case number format being determined for each agency by system administrator but case numbers can be automatically assigned by agency and incident type.

X_____Case numbers shall be assigned to an incident by dispatcher request.

C_____A single incident can have multiple case numbers.

Incident Record Access

Incident history information shall be displayed or printed in chronological order upon command, based on a search of the file. This search will not interfere in any way with the normal function of the workstation. It must be possible to search the file on any combination of the following criteria:

C____Jurisdiction
M____Incident number
M____Primary case number
X____Any secondary case number
C____Date and time range
C____Incident type
NA___Incident priority
NA___Reporting district or box number
NA___Law Enforcement beat/fire station/EMS district as applicable
NA___Dispatch control area
NA___Jurisdiction within an agency
C____Initial incident location
M____Final incident location
X____Any intermediate incident location
NA___Type of location reported (premise, intersection, place, etc.)
C____Primary unit assigned
NA___Final disposition
M____Existence of any case number
X____Call entry or dispatch workstation identifier
X____Call entry or dispatch operator identifier
M____Any telephone number recorded with incident
NA___Any name recorded with incident
NA___Any personal distinguishing identifier entered with the incident
NA___Any vehicle license number recorded with incident
NA___Any vehicle color or descriptive code recorded with incident

Any operator-selected time range between:

X____Incident initiation
X____Incident entry
X____Initial dispatch
X____First unit arrival
X____Incident closing

C_____Incident history inquiries must access pending, active and closed incidents using identical facilities for selection and display.

NA___All prior calls on file at the specified location can be requested for immediate display.

M____All operators who had entered or updated an incident record shall be listed as part of the standard incident display by both operator name and ID.

M____All officers who respond to an incident shall be listed as part of the standard incident display.

Unit Record Keeping Requirements

C_____Jurisdiction

M____Officer name and badge number at time of incident.

M____The system must maintain all activity by unit identifier, agency, officer name, and badge number at the time of the incident.

C_____The system shall be able to display a complete sequence of unit activity for any selected shift or time period, regardless of whether such activity was associated with an incident.

X____The unit identification can be changed during a unit's shift without affecting the unit's history record.

X____The unit's history record must be accessible by the current or any previous unit identification used during the shift.

M____The unit's history record must be accessible by the current or any previous officer number assigned.

Closed Incidents

X____No incident shall be closed until a call-taker, dispatcher, or supervisor has issued a command to do so. **Closes when last unit comes in service**

X____Any closed incident can be reopened for further activity, without assigning a new incident number.

Supervisory Status Display

C____Dynamic status information from one or more dispatch workstations can be displayed at a supervisory workstation position upon request without affecting the status monitor of that workstation or of any other workstation.

C____Supervisory status displays must show the same warnings and indications, such as a unit overdue, incident updated, and so forth, as are displayed on the responsible dispatch workstation.

Street Closure Information

C____The system must have the ability to display street closure information upon operator request.

Fire Hydrant Information

M____The system shall display a list of fire hydrants near any specified incident or unit upon request; the list shall be in order by distance from the specified incident or unit.

M____The fire hydrant list must show the location, current status, flow and other relevant information.

Mobile Data Terminal (MDT) Interface Functions

The system must allow the following types of transactions to and from Mobile Data Terminals:

M____MDT logon with unit number and ID numbers of occupants.

X____Auto unit entry into CAD system as in service but not yet available until unit dispatcher places unit in available status.

X____MDT logoff and unit removal from CAD system only if a unit is in "available" status.

C____Send dispatch orders to MDT.

Accept MDT responses for:

C____Acknowledge dispatch order receipt
C____En route to dispatch
C____At scene
C Available at scene (with comment)
C____In service
X____Busy (with comment)
C____Out of service (with comment)
C____Change status of the unit to any valid CAD status

C____Accept MDT request for report number on current dispatch and transmit number to MDT.

NA___Allow MDT to initiate onview and traffic stop. Information on a vehicle to submit auto queries to ACIC/NCIC system.

NA___Allow MDT to attach responses from ACIC/NCIC system to incident displayed.

NA___Allow MDT to run full ACIC/NCIC queries through formatted screens.

C____Allow MDT to send messages to dispatcher or other MDT's.

C_____Support MDT emergency button to notify the dispatcher of a peril via a single keystroke.

Notify MDT of changes in dispatch including:

C____Change in dispatch data, status, or comments
C____Cancel from dispatch

C_____Send premise data, HazMat information, hydrant locations, and officer safety alerts to MDT along with dispatch orders, based on user-defined criteria and type of unit.

C_____Allow MDT to request static status of individual or group of units via command. supervisory function.

M_____Differentiate a unit with MDT from non-MDT unit on dispatcher status monitor and working screen.

X_____Allow MDT to add comment to working CAD incident.

C_____Allow MDT to enter disposition for current dispatch.

C_____Allow commands to resend MDT dispatch to terminal without updating time stamps in the event the unit did not get clean data the first time.

C_____Have system automatically send MDT dispatch orders through standard dispatch command without requiring a dispatcher to know if a unit has a MDT or use different command to dispatch to it.

C_____Allow MDT to make CAD history inquiries such as unit history, dispatch history, address history, and any other standard online query to CAD system such as premise data, notes file, etc.

C_____System must automatically format data sent to MDT to fit the screen on MDT.

X_____System must allow a CAD command, which will resync MDT availability (Logon status) after prolonged down time. Such command should poll the MDT controller to find out which units are logged in.

C_____System must provide MDT security whereby user and/or MDT terminal ID may restrict specific commands.

C_____System must disallow MDT commands from any MDT, which is not correctly logged into dispatch system.

General System Functional Requirements

This sub-section addresses certain general functional requirements, which are not conveniently grouped as Call Taking or Dispatching functions above.

Multiple Agencies

For both present requirements and future flexibility, the system shall support multiple jurisdictions and multiple agencies. This means that the system must accommodate at least the following facilities:

C_____Routing of calls to appropriate dispatcher according to jurisdiction and agency.
C_____Duplicate street names, distinguished by city name and/or postdirection and/or jurisdiction.
C_____Independent incident numbering systems by jurisdiction and agency
C_____Summary and management reporting by jurisdiction and agency

Security

X_____System shall provide method for dispatcher to change assignment (such as shift change, etc) without logging out.

C_____Operator sign-on shall require the entry of both an operator identification code and a private password.

C_____The password must not appear when entered.

M_____A record of invalid password attempts shall be recorded after a preset number of allowable retries.

C_____Transaction security can be limited by workstation type or location, in addition to operator password.

X_____The acceptance of user sign-on must result in the screen being displayed with the user-selected colors and layout.

On-Line Help

C_____The system must support on-line "help" for every field in every formatted input transaction. This must include local incident entry, update and database transactions, and remote system interface transactions.

C_____Help" information must be available for dispatcher commands.

C_____The request for "help" information shall be entered by function key without affecting the contents of the field for which the information is requested.

C_____The "help" information must be maintainable on-line.

System Notepad

C_____A system-wide notepad shall be provided which all operators can access. The function of this notepad is to provide quick access to information such as telephone numbers and addresses. The format should include a forty- (40) character description, unlimited text, and a date/time update stamp for initial entry and record changes.

Alarm Database

NA___The system shall include an alarm database, maintainable by the dispatch staff, providing easy entry/access of alarm activations.

User Messaging facility

C_____The system shall include the ability for an operator to send a message to another operator. Mobile Data Terminal operators shall also have this functionality. Logging of MDT messages shall be optional system wide.

Online medical expert system

A_____The system shall provide online access to an EMD system, which prompts the operator with questions in a "tree structure" format to assist the operator in providing emergency medical information to callers.

Screen Printing

C_____The operator must be able to print the contents of the workstation screen or status monitor at any time by function key request or command line.

C_____An entire incident, which includes all appropriate screens, can be printed by a single command regardless of the screen currently displayed.

M_____Whenever a complete message is printed, it shall be reformatted to cause page numbering, page breaks, and column headers at the beginning of each printed page (typically 60 lines).

Message Control

Messages displayed in response to local or remote inquiries shall be displayed to the operator using a method to allow rapid and understandable review. These functions shall include:

C_____Page forward to next page
C_____Page backward to previous page Scroll upwards or downwards by single line
C_____Scroll upwards or downwards via scroll bars Go directly to first page of message
X_____Go directly to last page of message
M_____At least 12 lines of message text can be displayed at a single time.
UNK__Outbound messages must contain requesting unit's ID and display in incoming return in order of time received. **Don't understand**
X_____The number of displayed lines must be able to be adjusted by the individual workstation operator. Any message page displayed can be permanently attached to an incident or unit history record.
C_____Messages must be displayed in sequential order of receipt.

Ease of Use

C_____Menus shall be supported as a training aid but shall not be required for system operation.

C_____Each workstation position must be capable of displaying at least 24 lines of information at one time. "Windows" shall be available for special functions, and can be scrolled up/down and left/right as needed.

C_____In the event of concurrent update or display on the dispatcher's input screen, no data or keystrokes being entered by the operator must ever be lost or skipped.

X_____At any time, the dispatcher must be able to redisplay any recent command entered on the workstation, and then alter and re-enter the command if needed.

X_____Data entry into input forms at the dispatch workstation can be interrupted with a single keystroke or mouse action to allow entry of unit status change or information command (command line).

X_____After a command is entered, processing can resume at the original input form with another single keystroke or mouse action, with the input cursor at the original location in the data form.

Date and Time Display

C_____Each position's display screen should show the current date and time at all times.

Data Base Access

NA___Access to ACIC/NCIC system may utilize fill-in-the-blanks input forms and/or command line query.

NA___Certain types of officer activity will generate a query to offline databases.

X_____The format of input forms must be maintainable on-line without requiring programming experience.

X_____Standard message reformatting logic must be maintainable on-line without requiring programming experience.

C_____Context-sensitive "help" information may be available for each field in these input forms.

C_____Help" information must be available at a high level, which provides general information about the transaction.

C_____"Help" information must be available by function key request.

C_____Help" requests must not alter the input field.

C_____Help" requests must list all valid data for edited fields.

C_____The operator must be able to select the desired field data from the information displayed, with the field automatically updated.

C_____"Help" information must be maintainable on-line.

Provisions of NFPA 1221 and CALEA

Annex D Computer-Aided Dispatching (CAD) Systems

D.1 The CAD system should provide automated decision-support aids to telecommunicators by organizing and managing the real-time processing of informational items belonging to the following classes:

1. Alarms, including other requests for service
2. Incidents and events
3. Resources utilized by the communications center
4. Other classes, as directed by the authority having jurisdiction

D.1.1 Each item should have the following characteristics:

1. Unique identifier
2. Status
3. Location
4. Description
5. Relationship to other items
6. Other characteristics, as directed by the authority having jurisdiction

D.1.1.1 Alarm times should, as a minimum, also include the following characteristics:

1. Source
2. Priority
3. Type

D.1.1.2 Incident items should, as a minimum, also include the following characteristics:

1. Incident management structure
2. Evidentiary information

D.1.1.3 Resource items should, as a minimum, also include the following characteristics:

1. Capabilities
2. Authorizations
3. Assignments

4. Activities

D.2 The CAD system should archive items in a records management system for later retrieval, analysis, and reporting.

D.3 The CAD system should record a history (audit trail) of the following actions taken with the items:

1. Creation
2. Change, including modification, deletion, or supplementation
3. Disposition, including close-out, archiving, and transfer

D.3.1 Each entry in the history should include the following:

1. Coordinated universal time (UTC) of action
2. Identification of the individual performing the action
3. Effects of action on the characteristics of the items

D.4 The automated exchange of digital information related to alarm objects between the communications center and external systems should be accomplished in accordance with standards published by the National Emergency Numbering Association (NENA) and the Association of Law Enforcement Communications Officials, International (APCO).

The automated exchange of digital information between communications centers should be accomplished in accordance with standards published by APCO.

The automated exchange of information between communications center and transportation information systems should be accomplished in accordance with standards registered with the Intelligent Transportation Systems (ITS) Data Registry.

D.5 Reference Material

D.5.1 APCO Project 36 addresses standard format and content requirements that apply to information exchanged between CAD systems.

APCO International, Ind., World Headquarters, 351 N. Williamson Blvd., Daytona Beach, FL 32114-1112; (904) 322-2500, (888) 272-6911; Fax (904) 322-2501.

D.5.2 NENA Standard 02-010 addresses standard format and content requirements that apply to information exchanged with 9-1-1 databases.

National Emergency Number Association, 4350 North Fairfax Drive, Suite 750, Arlington, VA 22203-1695; (800) 332-3911; (614) 741-2080; Fax (614) 933-0911.

D.5.3 Intelligent Transportation Systems Data Registry includes standards with standard format and content requirements that apply to information exchanged with transportation information systems.

Institute of Electrical and Electronics Engineers, ITS Data Registrar, P.O. Box 1331, Piscataway, NJ 08855-1331; (732) 981-0060; Fax (732) 981-1721.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	City of Tucson – Communications Division
File Name:	Pima County Tucson Fire Dispatch Interview Record FINAL.doc
Date of Interview:	February 23, 2006
Location of Interview:	City Communications Center 4004 S Park Ave
Primary Interviewee:	Anita C. Velasco Communications Administrator
CTA Interviewers:	JM Dye

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Communications Division is organized under the General Services Department of the City of Tucson. The Division is deployed in two general operations, the Primary PSAP functions for the City; and the Fire and EMS dispatch operation for the City.

2. Both operations are located in the S Park Avenue location as well as the Tucson Police Dispatch/PSAP center (discussed separately).

3. The Primary PSAP answers 9-1-1 calls for the City of Tucson (by the nature of 9-1-1 these could be law enforcement, fire, or medical calls). The Secondary PSAP and Fire/EMS dispatch operation (adjacent to the Primary PSAP) dispatches and provides radio support for the City of Tucson Fire Department, Northwest Fire, Golder Ranch Fire, Avra Valley Fire, Three Points Fire and Picture Rocks Fire Departments. This Section operates Tucson MEDS Control, the centralized medical dispatching service for the Pima County region, and other areas of Southern Arizona as needed.

4. The dispatch operation also dispatches, provides ground control, and landing zone control for four helicopter ambulance/rescue services:

   - Arivaca
   - Arizona Department of Public Safety
   - LifeNet - from Oklahoma
   - LifeLine - from Tucson

5. Certain jurisdictions within the geographic boundaries of the City provide limited dispatching and call handling operations. These entities are:

   - Pima Community College – where law enforcement calls are transferred to them with an accompanying print-out of the ALI/ANI information. Tucson Fire provides fire services for the College.

   - University of Arizona – provides full 9-1-1 and public safety services but Tucson Fire responds to the campus facilities.

   - Davis Monthan Air Force Base – provides police and fire services but again the City Fire Department responds to the Base.

   - The Native American lands that are within the City are dispatched as other areas of the City.

6. Contact with Rural Metro/South West Ambulance is via ring down line. Southwest Ambulance is under contract to provide all BLS ambulance transports within the City limits of Tucson.

7. Wireless 9-1-1 calls located generally within the City boundaries are received at the Tucson Primary PSAP. These calls are then transferred to the Secondary PSAP's as required. Wireless Phase 2 has been implemented and the routing locations given by the providers seem fairly accurate.

8. Also housed within the Primary PSAP operational area is the dispatch and call taking function for all City Departments. This position is active during normal business hours, and functions as an after-hour answering service for many City Departments.

Present Situation

1. The Division is staffed by 85 positions. Twenty are used in the Primary PSAP and 54 in the Secondary PSAP/Fire and EMS dispatch. Eleven personnel are supervisory, technical support, and management.

2. The operation is supported by an Application Data Systems, Inc. (ASDi) computer assisted dispatch system (CAD). The system was initiated in 12/91, however many upgrades and improvements have been implemented since that time. Many of the programs have been tailored to the Tucson Fire and EMS operation; with features and functions that are unique to Tucson and Tucson's operational environment. The ASDi CAD serves the Primary PSAP and the Fire and EMS dispatch operation for both Tucson Fire and the outlining districts. The system is highly reliable. The last major upgrade was in 02/04. The CAD is interfaced to the Tucson Fire records management system (RMS) and is compliant with the NIFRS fire reporting system in use nationally. Previous events are displayed and approximately four months of call data is maintained on-line, and years of data are available off-line. AVL information is updated every 13 to 15 seconds, and the data is used by CAD to determine the closest, appropriate unit for dispatching. CAD provides a unit recommendation when a call is brought up for dispatch.

3. The operation uses radio console provided by Kustom Consoles. Some of the equipment dates to the 1970's.

4. A City has a local area network (LAN) within the Communications Center that supports CAD. Firewalls provide the necessary security and a method to reach the City's wide area network (WAN). The WAN provides interconnectivity throughout the City and all its operations. This is supported by over 41 microwave hops. A new microwave system is currently being installed, and the new microwave will have connectivity to the City's extensive fiber network.

5. The 9-1-1 equipment is a new Plant Vesta system. The center uses 36 and 13 (49) 9-1-1 lines and 104 other telephone lines. The primary PSAP has 36 9-1-1 lines, 14 of which provide backup to the Pima County Sheriff's PSAP. The secondary PSAP has 13 9-1-1 lines, along with 104 other telephone lines. The PBX is a Centrex system provided by Avaya. Qwest is the local exchange carrier (LEC) for the Center.

6. The Center is fully supported by UPS systems and emergency generators.

7. The mapping is MAP STAR and is currently based on latitude and longitude. The base maps are provided by the City and County GIS Department. The data base in use is ESRI Shape files using digital orthophotography input. The City Communications Center provides updates to all maps used in all PSAP's in Pima County. Support staff downloads the new base maps from Pima County, processes the file and adds the cellular layer. The new maps are then pushed out to each PSAP.

8. Commercial alarms are received via telephone. The City building alarms are called straight to the Fire call taker positions by the commercial alarm company.

9. A Zetron paging encoder is used for the Fire Departments other than Tucson Fire. The CAD system makes recommendations, however the Zetron system is not connected to CAD and so fire house packages are not automatically opened. An automated paging function is included within CAD.

10. Tone outs to the City Fire and EMS stations are currently through the microwave but will be through the fiber network soon.

11. There are 10 hospitals in the Tucson area. The center is connected to each one through ring down circuits. Eight of ten of these ringdowns are supported by the City's microwave. Each Emergency Room is also equipped with a radio on the Med 9 frequency.

<u>Present Problems</u>

1. The radio console equipment is at the end of the maintainability. Parts are difficult to obtain.

2. There are some radio dead spots within the City operating area.

3. The radio interoperability "Gateway" device is difficult to use. While it is easily activated, field units often fail to remember it is available. Getting units to switch once it is activated it difficult.

Future Requirements

1. Various Call Takers and Dispatchers were interviewed with the following issues and statements:

    - Many mentioned that management is very supportive and responds quickly to requests; however, many issues cannot be readily addressed.
    - The design of the room and equipment is not easily cleaned. There is a desire to have surfaces, carpets and console designs to be easier to reach and keep clean.
    - Although many attempts have been made to improve air quality it could still be improved upon; mention was made of more air movement needed and the elimination of chemical smells when cleaning.
    - Would like to have individual lighting controls at the positions.
    - Need steps for noise reduction in the dispatch area.
    - Would like the room to have more visually soothing colors and have more supportive chairs.
    - Would like to have a wire management system to control and organize all of the wires and cables in and around the console positions.
    - There will always be a lot of verbal and visual communications in a center and would not want any design that restricted this or where monitors blocked everyone's view.
    - There was apparently an event in the parking lot and would like more security cameras for that area.
    - Communications between the Fire and Police Departments is difficult and would like some form of messaging in the CAD or consoles.
    - Would like cleaner restrooms.
    - There are insufficient electrical plugs at the positions.

- Room temperatures fluctuate and are difficult to control.
- Would like a 'Quiet Room' with a telephone and an exercise area.

The draft of this record was sent to Anita C. Velasco on March 20, 2006.

Corrected draft was returned to CTA Communications on May 12, 2006.

Anita C. Velasco
Communications Administrator
Tucson Communications Division
4004 S Park Ave
Tucson, Arizona 85714

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2. Dispatch Center Survey

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: **City of Tucson/Communications – 911 & Fire/Medical Dispatch**

Contact Name: **Anita Velasco** **Position:** **Communications Administrator**

Phone: **791-3112** **Email:** **Anita.Velasco@tucsonaz.gov**

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement _____ Combined Fire/EMS 6

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) 4

Other: _____

Please list the agencies and describe the geographic area served by your communications center

Fire & Medical
Tucson Fire Department services City Limits of Tucson,
Northwest Fire, Golder Ranch Fire, Avra Valley Fire, Picture Rocks Fire and Three Points Fire.
Districts service northwest Pima County

EMS - Helicopters

911 Services Provided:

Primary PSAP X (911) Secondary PSAP X (Fire & Medical)

Basic 911 _____ Enhanced 911 X Wireless Phase I XWireless Phase II X

VOIP 911 X

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? Primary 0 / Secondary 8

How many positions does your PSAP have that can answer 911 calls but not dispatch? Primary 8 / Secondary 4

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Activity	2003	2004	2005
Wireline 911 Calls Received	**343,791**	**336,817**	**293,104**
Wireless 911 Calls Received	**226,445**	**264,094**	**323,265**
Total 911 Calls Received	**570,236**	**600,911**	**621,372**
Wireless Call %	**39.7**	**43.9**	**52**
Average 911 Answer Time	**3**	**4**	**5**
Other Emergency Calls Received	**88,188***	**89,309***	**103,717***
911 lines	**66,894*	**68,633*	**79,885*
R.D. Lines	**19,822*	**19,397*	**22,255*
Radio Initiated	**1,472*	**1,279*	**1,031*
Administrative/Non-Emergency Calls	**304,487**	**322,241**	**336,183**
Total Incoming Calls	**962,911**	**1,012,461**	**1,060,726**
Police Calls Dispatched	**N/A**	**N/A**	**N/A**
Police Officer Initiated	**N/A**	**N/A**	**N/A**
Fire Events Dispatched	**17,122**	**16,938**	**19,509**
Emergency Medical Incidents	**71,066**	**72,371**	**83,662**
Medical Pre-Arrival Instructions Given	**1,611**	**1,678**	**1,776**
Number of 911 Transfers	**517,997**	**546,877**	**528,787**
CJIS (SCIC/NCIC) Inquiries	**N/A**	**N/A**	**N/A**
CJIS File Maintenance (Entries, Mods, Cancels, etc	**N/A**	**N/A**	**N/A**
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X

Call Answering (administrative) X

Call Answering (Other) X
(i.e. after hours, etc.)

Dispatch Police/Law Enforcement N/A

Dispatch Fire X

Dispatch EMS X

Traffic Monitoring N/A
Dispatch City/County Services/DPW X
Warrant/Article Entry/Confirm N/A
Dispatch Animal Control N/A
NCIC/state CIC checks N/A
Other tasks performed: N/A

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	Plant	Vesta	2.2 Serv. Pk. 2	3/27/06
Answering Position Equipment	Plant	Vesta		3/27/06
Map	Plant	Mapstar	5.1	
CAD	Application Data Systems, Inc. (ADSi)	CADForce	N/A	12/07/91 – last major update 02/04
Radio Console	Kustom Console	-------	-------	1982
UPS	Powerware	9315-50/50 (Qty 2)	Po5003261200112	May 1998
Instant Recall Recorder	Dictaphone	5713	-------	04/17/89
Logging Recorder	CVDS Inc.	70117	06/13/05	06/30/02
PBX	Admin-Centrex			
Master Clock	Spectracom	8183	02/07	01/23/97

9-1-1 System

PRIMARY PSAP	SECONDARY PSAP
1. 36	1. 13
2. 2	2. 102

1. Number of 911 lines_____
2. Number of other lines_____
3. ANI & ALI printers – number & location 2 Locations: 911 room and Supv Ofv
4. Abandoned call alarm 2 - Locations: 1 in 911, and 1 in Vesta
5. Single Button Transfers 16

6. Ring down circuits PRIMARY 2 / SECONDARY 91

Telephone Service Provider Qwest

911 Service Provider Qwest

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? Y

911 interface Y/N?Y

RMS interface Y/N? Y

NCIC/State interface Y/N? N

Mobile Data & AVL Y/N? Y

Logging Recorder

Channel Capacity 96

Recording format (tape, DAT, VHS, etc.)Raid Array, DVD

Staffing

On-Duty Staff	9-1-1 CALL TAKER	FIRE/MEDS CALL TAKER	Shift Supervisor/Lead Dispatcher
0700-2300	4	12	1
2300-0700	4	11	1

Primary PSAP

	9-1-1 Call Taker
Authorized Full Time	20
Actual FT	18
Authorized Part Time	0
Actual Part Time	0

Secondary PSAP

	Call Taker Dispatcher	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt / Admin
Authorized Full Time	54	7	1*	0	1	0	2
Actual FT	42	6	1	0	1	0	2

***Database/GIS Support comes from a different Organization.**

OTHER SYSTEMS

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

TFD-F1, F2, F3, F4, F5, F6, F10 _____

County Fire-C1, C2, C3, C4 _____

Meds-CH10, Telem-Ch1, 4, 6, 8 _____

Gen Servc-GS1, GS2, GS4 TRAN, GS6 _____

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Mutual Aid CH5 _____

Gateway _____

_____ _____

GS-3 _____

What agencies do you need to communicate with but cannot?

Rural Metro FD _____ Drexel Heights FD

DM Fire _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Radio Coverage
To talk with other agencies requires a number of steps utilizing the Gateway frequency.
Console Equipment
Capacity for additional frequencies

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

3. Computer System Checklist – Dispatching Operations

Instructions for Dispatching Operations Checklist

The Pima County community is in the process of reviewing the current communications systems. We are asking that the Dispatch Operations Departments participate in an information gathering process to assist in obtaining information regarding the existing Computer Assisted Dispatch operating systems in use in the community. The intent of this review is to determine the size and capacity required now, and in the future, and elicit responses concerning operational features. The existing systems may require enhancement for size and capacity; as well as the addition of new features and functions. The existing systems should be applied to standards created by the National Fire Prevention Association in their NFPA 1221. The NFPA 1221 provisions have been adopted by the Commission on Accreditation for Law Enforcement Agencies (CALEA) for CAD systems. These NFPA 1221 requirements as they apply to CAD systems are included at the end of this document for your review.

The checklist contains functions found in many, modern CAD systems. The goal is to identify the functions desired by the dispatch operations community. The checklist contains entries that apply to law enforcement, fire, EMS, and call taking. You should respond to areas that affect your operation.

We ask you to read closely the following checklist. This checklist contains response areas, which we are asking that you complete. This section may be returned on the original forms provided. Each item in this response document should be marked with one of the following responses:

C - Function is completely supplied by existing system (s).

A- Function is desired and would be an add–on to the current system.

M - Function is desired and could be provided with modifications to the existing software package.

NA- Function does not apply to this agency.

X - Function is not required or desired.

This part of the checklist should include a response to each element marked as above for additional information. In the event that additional information is required it can be provided

on a separate sheet and further describe the the specific requirement. Additional information should indicate the element number to avoid any ambiguity and should identify any additional comments or explanation required.

If there are other features, functions, or concerns that you have, please write them out in free form and simply attach them to your checklist.

We thank you in advance for your efforts.

Call Taking Functions

Incident Entry

X_____There shall be single format for entering event data, i.e., law enforcement and fire/EMS events use the same format.

The initial entry and subsequent modification of an incident shall be logged into a file that includes:

C_____Date/Time stamp
C_____User ID
C_____Workstation location
X_____Information changed with before and after "image'

The system must accept the following data elements in a preformatted screen:

C_____Location of incident
C_____Additional location comments, independent from narrative information
C_____Incident type for each type of service to respond
X_____Incident type to create multiple types of service
C_____Ability to override priority by dispatcher
C_____Reporting party name
C_____Reporting party address
C_____Reporting party phone
X_____Vehicle description
X_____Suspect description
M_____Unlimited text information (via repetitive entry and field scrolling functions)

The following facilities must be supported:

C_____Address verification based on street name (Soundex) and street address number block range. Soundex can be activated/deactivated by system administrator.
C_____Addresses can be entered into the system by street intersection or common place names.
C_____Address verification produces appropriate Fire district; Law Enforcement beat, etc. and recommends most appropriate unit to dispatch based on:

C_____Type of call
C_____Unit availability
C_____Response zone proximity – **Real time closest unit**
C_____Dispatcher can override unit recommendations.
C_____Dispatcher can override response zones.
C_____Units can be relocated to appropriate stations.
UNK* Location verification occurs via function key prior to saving.
UNK* Response to location verification choices is not required prior to entry of additional event
C_____Ability to freely move directly to any field in input form.

*Don't understand description

Incident Type Codes

C_____Incident type codes must be validated during incident entry.

M_____There must be the ability to display selection list for incident types.

M_____There must be the ability to select incident type from a displayed list, with data automatically inserted in field.

The incident type code must automatically provide the following information:

C_____Description of incident type
C_____Priority level or requirement for manual specification
NA____Dispatch-to-on scene timeout value
NA____On scene-to-next status change timeout value specific or non-standard incident routing

NA____The above information must be modifiable on-line.

E-911 (ANI/ALI)

C_____The CAD system must interface directly to the telephone company E-911 system.

C_____Information from E-911 (calling number and service address) must appear automatically on the incident entry screen without specific operator action.

C_____The E-911 information must be accepted into the dispatch information by dispatcher pointing device or function key action.

C_____The E-911 information display must be able to capture all information as provided by the telephone company backup display.

C_____The E-911 location can be utilized without specific operator action, unless manually overridden.

C_____If the E-911 information is overridden, it must still be recorded in the incident record for later review.

C_____The E-911 location information must be validated using the geographic files on the CAD system, which are received from the Public Safety geo-database.

C_____The operator must be able to answer the E-911 telephone call prior to displaying an incident input form; the E-911 information must be automatically displayed when the entry form is displayed and continuously able to be recalled until a new call is answered or cleared by operator.

Geographic File Interface

C_____The system shall provide the capability to use longitude/latitude for designating geographic locations. This functionality shall provide an accuracy of +/- 125 meters according to the latest FCC Rules 94.102 and 98-245.

X_____All locations must be entered in "free form", without requiring the entry of data into specific data fields in the input form.

C_____The system must support the entry of apartment number, lot numbers and so forth as part of the "free form" location field.

M_____Partial ("half") addresses must be supported.

C_____Premise address modifiers must be supported (e.g., 432B MAPLE ST Apt XXX).

X_____Premise address entry must result in a display of both low and high cross streets.

C_____Intersection entry must result in a display of the premise addresses of both streets at the intersection.

C_____Common place name entry displays equivalent address or establishment number/Identifier.

C_____The system must have a "near match" capability in order to identify street or common place names for which no exact match is found in the geo-file.

C_____A minimum of two characters is needed to result in a street or place name selection list.

C_____The "near match" capability must be based on a dynamic algorithm to match names; it shall not require a predefined list of misspellings.

C_____The system must support an "alias" function to permit use of alternative names such as "10th" for "Tenth", "JFK Dr" for "John F. Kennedy Drive", etc.

C_____Street name choices for intersections must be presented only for streets, which physically intersect.

C_____The operator must be able to enter common place locations by specifying any word in the place name.

C_____The operator must be able to verify the address at any time during incident entry process by function key request. **No function key required – automatic verification**

X_____The operator must be able to override the information from the geographic file during incident entry.

NA___The system shall produce a report of all locations entered as operator overrides.

C_____The operator must be able to change any location entered and/or validated at any time prior to final incident acceptance by simply re-keying the location into the input form.

C_____Any call taker or dispatcher must be able to update an incident location at any time following incident acceptance.

M____Whenever a location is updated, a record of all prior locations, which have been entered, must be maintained in the incident record.

C____The system must automatically route the incident to the dispatcher responsible for the location entered but without interfering in any way with multiple dispatchers working the call simultaneously.

C____The dispatcher shall be notified of address jurisdiction.

Priority Incident Interrupt

X____The operator must be able to interrupt and suspend an incident that is being entered in order to service an incident, which has a higher urgency.

X____This interruption can be made at any time by function key.

X____An indication shall be displayed to the call taker to indicate the number of incidents suspended.

X____The system administrator can set the limit to the number of calls, which can be suspended.

X____Following the entry of the high priority incident, the system must automatically resume processing of the interrupted incident(s) when recalled by the operator.

Fast-Transfer Incident Entry

C____A critical incident can be entered at any time following the entry of location and type information. A fast-transfer incident can be entered with no more keystrokes than needed for normal entry.

X____Following a fast-transfer entry, the input screen must be prepared to allow immediate entry of additional information simultaneously by multiple operators.

M____The dispatcher must be notified that the call taker is entering additional information.

M____The fast-transfer function can be repeated any number of times during the entry or supplement of an incident.

Incident Transfer to Dispatch

C_____The system must automatically route a new incident to the appropriate dispatch workstation(s) depending upon the location of the incident and the call classification (Law Enforcement, Fire, or EMS).

C_____The operator must be able to override the automatic routing of incidents by location for routing to a specific dispatcher(s) depending upon type of incident.

C_____An incident can be automatically routed to a predefined dispatcher(s) for special incident types.

Duplicate Incident Detection

C_____During incident entry, the call taker shall be notified of any active incidents near the one being entered but this shall in no way interfere with the normal call-taking functions.

C_____The duplicate detection process shall be advisory only; the operator shall determine whether the new call is a duplicate, and whether to proceed with this transaction.

M_____The call taker must be able to display the complete record of any potential duplicate by function key without interrupting current data collection process.

X_____The duplicate incident can be supplemented with the new information by function key request but this shall in no way interfere with the normal call-taking functions.

C_____If an incident is entered which is later determined to be a duplicate of another incident, the dispatcher must be able to cancel the incident.

Premise and Hazard Information

C_____The system must contain a file containing data stored by location. This data can include information on threats against public safety officials, hazardous substances stored, locations of invalids, etc.

C_____The hazard file must be automatically checked during incident entry.

C_____A permanent notification of the presence of hazard information must be recorded in the incident history.

C_____The actual text of the hazard record shall be stored in the incident history record only for specific types of hazards.

C_____Hazard file records must have a purge cycle, which prevents access after a preset date or time period.

C_____Hazard file records can be entered for permanent retention.

C_____Multiple hazard records can be entered for a single location.

M_____The dispatcher must be able to display all hazard data within a specified distance from a unit or incident.

Prior Incident Information

M_____All prior incident activity on file at an incident's location must automatically be displayed.

M_____Prior incident recording must not require operator action and shall not interfere with the normal functions of the operator.

M_____A warning must be displayed for recent prior incidents within a time span designated by a user configuration.

M_____Detailed prior incident information must be accessible by function key.

Entry of Non-Dispatch Calls

C_____The system must have the ability to record incidents where no dispatch occurs.

C_____Non-dispatch calls must be entered in the incident history file, and shall be accessible via all standard incident access functions.

X_____An incident entered in this fashion can be later reopened and dispatched normally with a date/time stamp.

Entry of Completed Calls

C_____The system shall allow for the entry of calls that have been previously handled but not yet entered into the system, due to conditions such as system unavailability.

X_____Completed calls of this type can be activated for the purpose of unit assignment.

Multiple Types of Service

C_____The call taker must be able to enter a single call for service, specifying multiple types of service.

C_____Certain incident types must automatically generate the appropriate multiple types of service responses.

M_____This process must not require separate actions for each type of service.

C_____Any supplementary information that any call taker adds to any incident entered in this fashion shall be automatically added to each related incident.

Dispatching Functions

Pending Incident Display

C_____A list of pending incidents must be available for continuous display to the controlling dispatcher.

C_____Incidents shall be listed according to priority and entry time.

C_____The dispatcher must be warned whenever a new or updated incident is added to the pending incident display.

C_____Any position can display all pending incidents, or only those for one or more specific dispatch positions.

X_____The system must provide an indication in this display, which indicates which incident, is currently being reviewed by the dispatcher.

X_____At any position display of pending incidents shall show which ones are currently being reviewed by the responsible dispatchers but shall not interfere in any way with the normal function of any workstation.

The system must display, at a minimum, the following information for each incident in the pending incident display:

C_____Incident number
C_____Incident type code
X_____Description of incident code
X_____Priority level
C_____Number of minutes waiting
C_____Incident location
C_____Dispatch control area
X_____Law Enforcement beat or fire station as applicable
X_____Hazard warning and complete hazard information
X_____Preassigned unit identifier

The system must support a visual warning, set by the system administrator, for incidents in the pending list or while being viewed by dispatcher or call taker when any of the following special conditions occur:

X_____Incident is being viewed by controlling dispatcher.
C_____Wait time has exceeded allowable maximum (by priority).
M_____Supplementary information has been added to incident.
X_____Incident cancellation has been requested.
X_____Incident location, type or priority has been changed.
X_____Preassigned unit is unavailable for assignment to incident.
X_____Pending incident timeout warning must be updateable by dispatcher.
C_____None of the visual warnings listed above shall interfere in any way with the normal function of the workstation.

Incident Control

C_____The dispatcher shall have the flexibility to process pending calls in any sequence.

C_____An incident may be worked by multiple positions.

C_____The dispatcher may select calls for dispatching by incident number or unit number.

M_____The dispatcher may select calls for dispatching by mouse reference.

C_____The system must automatically present calls for dispatch in priority sequence, sorted by time

C_____The dispatcher must be able to quickly request the display and unit recommendation for any specific call at any time.

M_____The dispatcher may request the display of a pending call by pointing to it with a mouse or pointing device.

C_____The dispatcher must be able to share the control of any pending incident with another dispatcher at anytime.

C_____Any dispatcher can dispatch units to another dispatcher's incident.

X____An incident can be dispatched directly from the pending incident monitor without redisplay after initial review.

X____A unit may be assigned to a pending incident by pointing to the unit and the incident with a mouse.

X____The dispatcher must be able to place any call on "hold" with a unique visual indicator to show hold status, placing it back in the pending queue, so that the next call in sequence can be displayed.

Incident Review

The system must provide a mechanism whereby the dispatcher can review a pending incident prior to dispatch. This review must show critical incident information, including:

C____Jurisdiction
C____Incident number
C____Incident type or nature code
C____Description of incident type
X____Initial incident location
C____Current reported location
X____Any prior reported location
C____Name, address and telephone of reporting party
C____Hazard information associated with incident location
M____Summary of prior incidents at the same location
M____Warning of recent vs. old prior call
X____Warning that incident is in a different area of control
NA___Suspect name and vehicle information
X____Law Enforcement beat, fire station, EMS post as applicable
C____Recommended unit(s) for dispatch
C____Incident narrative information
C____All prior unit assignments and status changes
UNK__Times of all previous status changes *(don't understand)*

NA___Automatic scrolling must be utilized in cases where the entire event cannot be completely displayed, showing the most recent information.

C_____Manual line-level scrolling must be supported in addition to paging of displayed incident.

M_____The displayed incident must notify viewing party of update information while the incident is displayed.

X_____Viewing party should have ability to update incident with new information with a single keystroke.

X_____A pending incident must be able to be displayed by command or by pointing device (e.g., mouse, and trackball).

Law Enforcement Unit Recommendation

Units must be recommended dynamically using, at a minimum, the following criteria:

_____Jurisdiction
_____Incident location
_____Incident type
_____Incident priority
_____Type of units required
_____Number of units required
_____Current unit status
_____Beat assignment
_____Nearest adjacent beat

_____Up to four Law Enforcement units shall be recommended but not required, in order of decreasing suitability, based upon the above criteria.

_____"Adjacent beat" shall be determined by incident location within the primary beat.

_____The system must indicate the recommended number of units to respond according to the type of incident.

_____The dispatcher must be able to override the recommended units at any time.

_____Unit recommendation criteria must be user-definable by incident type and priority.

_____Unit recommendation criteria must be modifiable on-line at any time.

_____A unit's type must be able to be changed during its shift, with appropriate change to unit recommendation (e.g., from a one-person to a two-person unit).

_____Unit recommendation plans must be able to be changed dynamically.

_____Unit beat assignment must be able to be designated when a unit comes on-duty.

Fire Unit Recommendation

Units must be recommended dynamically using a fire "run card" using, at a minimum, the following criteria:

C_____Jurisdiction
C_____Incident location
C_____Incident type
C_____Current unit status
C_____Number of units required
C_____Type of units needed
X_____Fire station location

C_____Any number of units can be recommended at a time.

C_____Units shall be recommended according to current fire station assignment, considering current unit cover and move-up assignments (unlimited).

C_____In the event of greater alarms, unit recommendation must take into account units already assigned, providing the necessary equipment to satisfy the greater alarm requirements.

C_____Unit recommendation criteria must be modifiable on-line at any time.

M_____Standard move-ups must be displayed upon request.

M_____Multiple move-ups can be entered via a single command.

EMS Unit Recommendation

Units must be recommended dynamically using a EMS "run card" using, at a minimum, the following criteria:

C_____Jurisdiction
C_____Incident location
C_____Incident type
C_____Current unit status
C_____Number of units required
C_____Type of units needed
X_____EMS station location

C_____Any number of units can be recommended at a time.

C_____Units shall be recommended according to current EMS station assignment, considering current unit cover and move-up assignments (unlimited).

C_____Fire units that have EMS capacity will be utilized in accordance with their availability and EMS classification.

C_____Unit recommendation criteria must be modifiable on-line at any time.

Dispatch and Control of Units

C_____Recommended units must be dispatchable with a single keystroke.

C_____QThe dispatcher can alter recommended units.

M_____Recommended units can be selected by mouse reference.

X_____Units must be able to be assigned to a pending incident directly on the pending incident list, without requesting detailed incident display.

C_____Units cannot be assigned without initial detailed incident display and review.

C_____There must be no limit to the number of units, which can be assigned to single incident.

M_____Any number of incidents must be able to be preassigned to a single unit.

M____A unit or units may be assigned via pointing device without keyboard entry.

Status history maintained for each unit must include:

C____All status changes
C____Current Unit location
M____Date/time of all unit status changes, recorded to the nearest second with
U____Alarms specified by default or by each dispatcher if desired.

M____Timers can be set by type of call or by dispatcher discretion. Officer numbers for each unit assigned

M____Officer names for each unit assigned

M____Workstation identifier making each status change

M____Operator identifier making each status change

X____Operator name making each status change

X____Each dispatcher can select units displayed.

Required Status Keeping Functions

C____Unit status changes shall be entered as single transactions, specifying new status and one or more units.

M____Unit status change may be entered by mouse or keystroke, selecting unit and desired status.

C____Unit status changes must not require the display of an incident record.

C____Comments can be added to any unit status change, and will be recorded with the incident's and unit's permanent record.

X____Previous status change commands can be displayed for review and/or correction and reentry by function key request.

M____The unit identifier can be entered prior to the status code.

M____Status may be able to be entered by referencing the unit display and a status code via pointing device or keyboard.

_____The system must support the following incident control and unit status command functions.

C____Dispatch one or more units to an incident

NA___Assign backup units to an incident

C____Replace one unit with one or more other units

C____Preempt a unit to service a higher priority call

C____Place one or more units onscene

C____Place a unit available-on-scene (onscene but available for unit recommendation and assignment)

C____Place a fire unit available-on-radio or pager

C____Place a fire unit available-in-quarters

C____Place an EMS unit available-on-radio or pager

C____Place an EMS unit available-in-quarters

C____Add information to an incident

M____Add information to a unit's history record, whether available or assigned to an incident

NA___Enter pursuit information from several workstations concurrently

C____Clear a unit back to service

X____Change unit location while still on call

C_____New unit location may be validated against on-line geofiles

C_____Reset unit back to incident location without requiring reentry of original location

NA___Initiate a traffic stop or onview, resulting in an automatic license plate inquiry by the system

NA___Unit location at a traffic stop is validated against on-line geofiles

NA___Initiate a subject stop

NA___Indicate that the personnel are out of vehicle and must be contacted via hand-held radio or other means

NA___Request initial case number for an incident

NA___Request additional case numbers for a single incident

NA___Specify a unit timeout-warning interval

NA___Change the beat responsibility of a unit

C_____Place a unit on duty and available for dispatch

C_____Enter final disposition or incident type

M_____List all nearby hazards within a specified distance

Unit Definition and Control

C_____Any combination of up to 5 letters and numbers can be used as unit identifiers. *(2 lettters/3numbers*

X_____Unit type, shift, patrol area or other similar information need not be encoded as part of the structure of the unit ID.

X_____An on-duty unit's identifier can be changed while keeping a continuous unit history record (does not require units to be logged off duty).

X_____An on-duty unit's recommendation rules can be changed without requiring unit log off.

Transfer of Unit and Incident Control

C_____System must have a command allowing designation of a new primary unit on an active call.

C_____The control of any on-duty unit can be passed from one dispatch position to another, regardless of unit status.

C_____Any incident can be transferred from one dispatch position to another, regardless of incident status.

C_____Any dispatcher must be able to "take over" the dispatching and control of any incident at any time from any workstation without interrupting the original dispatcher.

C_____The dispatcher must be able to assign another dispatcher's unit(s) to any incident.

C_____In the above case, current unit status information shall be displayed on both the original unit's dispatcher's and the requesting dispatcher's displays.

Out of District Display

C_____Any dispatcher must be able to display dynamic unit and incident status for any dispatch control area in addition to the areas controlled.

Available and Active Law Enforcement Unit Displays

A dynamic display shall be provided for all units that are available for dispatch, which shows:

NA___Jurisdiction
NA___Unit identifier
NA___Unit assigned but available for dispatch
NA___Special unit type or classification
NA___Officers out-of-vehicle (on portable radio)
NA___Unit scheduled on-duty prior to confirmation of status
NA___MDT equipment status

A dynamic display shall be provided for all units assigned to incidents, which shows:

NA___Unit identifier
NA___Current unit status
NA___MDT equipment status
NA___Time since last unit status change
NA___Incident number
NA___Incident type and priority
NA___Incident type description
NA___Unit beat
NA___Unit control area
NA___An indication if the unit is operating out of its normal area
NA___An indication if the unit was assigned as a backup unit

NA___A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

NA___A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented. This warning shall be differentiated from the warning in the previous item.

NA___Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

NA___Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active Fire Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

M____Jurisdiction
C____Unit identifier
C____Unit status
X____Unit station
X____Unit MDT equipment
X____Units are ordered by associated station.
C____Units can be ordered by equipment type.

X____The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

C____Jurisdiction
C____Incident number
C____Incident type
C____Current alarm level
C____Incident working time
C____Firebox number [or appropriate geographic data]
C____Incident location

With each active incident, the status monitor must list assigned units, in sequence by alarm level, showing:

C____Jurisdiction
C____Unit identifier
C____Unit status
X____Time since assignment
X____Time since last unit status change
X____Any covering unit
X____Unit location if different from incident

M____Notes or comments associated with a unit

X____Units shall be grouped by priority level at time of assignment.

C____Unit status monitor displays must be useable by color-blind dispatch operators.

C____A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

X____A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

C____Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

C____Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active EMS Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

M____Jurisdiction
C____Unit identifier
C____Unit type
C____Unit status
X____Unit station
X____Unit MDT equipment
X____Units are ordered by associated station.
C____Units can be ordered by equipment type.

X____The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

C_____Jurisdiction
C_____Incident number
C_____Incident type
C_____Incident working time
C_____Incident location

With each active incident, the status monitor must list assigned units, in sequence by priority level, showing:

C_____Jurisdiction
C_____Unit identifier
C_____Unit status
X_____Time since assignment
X_____Time since last unit status change
X_____Any covering unit
X_____Unit location if different from incident
M_____Notes or comments associated with a unit

X_____Units shall be grouped by priority level at time of assignment.

C_____Unit status monitor displays must be useable by color-blind dispatch operators.

C_____A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

X_____A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

C_____Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

C_____Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Incident Record Keeping Requirements

The system must keep date/time stamped records of all incidents passing through the dispatch process. These records shall contain:

C_____Jurisdiction
C_____Incident number
C_____Case number(s)
C_____Incident location
C_____Initial and final incident type
C_____Final disposition
C_____Time of initiation (time of phone call)
C_____Time of incident entry
C_____For each assigned unit, the time of dispatch and all status changes
C_____All data taken by the call taker
C_____All information subsequently added
M_____Name and ID number of personnel in each unit assigned
C_____Name and ID number of each workstation operator who enters any information or status concerning the incident.

C_____The system must allow the entry of an unlimited amount of supplementary data about an incident.

C_____A permanent audit trail must be maintained for all information recorded with an incident, whether or not that information is later modified or deleted.

Assignment of Case Numbers

C_____A sequence of "case" numbers must be kept independently from the number assigned to each incident and jurisdiction.

X_____Each agency can have multiple series of case numbers, case number format being determined for each agency by system administrator but case numbers can be automatically assigned by agency and incident type.

X_____Case numbers shall be assigned to an incident by dispatcher request.

C_____A single incident can have multiple case numbers.

Incident Record Access

Incident history information shall be displayed or printed in chronological order upon command, based on a search of the file. This search will not interfere in any way with the normal function of the workstation. It must be possible to search the file on any combination of the following criteria:

C____Jurisdiction
M____Incident number
M____Primary case number
X____Any secondary case number
C____Date and time range
C____Incident type
NA___Incident priority
NA___Reporting district or box number
NA___Law Enforcement beat/fire station/EMS district as applicable
NA___Dispatch control area
NA___Jurisdiction within an agency
C____Initial incident location
M____Final incident location
X____Any intermediate incident location
NA___Type of location reported (premise, intersection, place, etc.)
C____Primary unit assigned
NA___Final disposition
M____Existence of any case number
X____Call entry or dispatch workstation identifier
X____Call entry or dispatch operator identifier
M____Any telephone number recorded with incident
NA___Any name recorded with incident
NA___Any personal distinguishing identifier entered with the incident
NA___Any vehicle license number recorded with incident
NA___Any vehicle color or descriptive code recorded with incident

Any operator-selected time range between:

X____Incident initiation
X____Incident entry
X____Initial dispatch
X____First unit arrival
X____Incident closing

C____Incident history inquiries must access pending, active and closed incidents using identical facilities for selection and display.

NA___All prior calls on file at the specified location can be requested for immediate display.

M____All operators who had entered or updated an incident record shall be listed as part of the standard incident display by both operator name and ID.

M____All officers who respond to an incident shall be listed as part of the standard incident display.

Unit Record Keeping Requirements

C____Jurisdiction

M____Officer name and badge number at time of incident.

M____The system must maintain all activity by unit identifier, agency, officer name, and badge number at the time of the incident.

C____The system shall be able to display a complete sequence of unit activity for any selected shift or time period, regardless of whether such activity was associated with an incident.

X____The unit identification can be changed during a unit's shift without affecting the unit's history record.

X____The unit's history record must be accessible by the current or any previous unit identification used during the shift.

M_____The unit's history record must be accessible by the current or any previous officer number assigned.

Closed Incidents

X_____No incident shall be closed until a call-taker, dispatcher, or supervisor has issued a command to do so. **Closes when last unit comes in service**

X_____Any closed incident can be reopened for further activity, without assigning a new incident number.

Supervisory Status Display

C_____Dynamic status information from one or more dispatch workstations can be displayed at a supervisory workstation position upon request without affecting the status monitor of that workstation or of any other workstation.

C_____Supervisory status displays must show the same warnings and indications, such as a unit overdue, incident updated, and so forth, as are displayed on the responsible dispatch workstation.

Street Closure Information

C_____The system must have the ability to display street closure information upon operator request.

Fire Hydrant Information

M_____The system shall display a list of fire hydrants near any specified incident or unit upon request; the list shall be in order by distance from the specified incident or unit.

M_____The fire hydrant list must show the location, current status, flow and other relevant information.

Mobile Data Terminal (MDT) Interface Functions

The system must allow the following types of transactions to and from Mobile Data Terminals:

M____MDT logon with unit number and ID numbers of occupants.

X____Auto unit entry into CAD system as in service but not yet available until unit dispatcher places unit in available status.

X____MDT logoff and unit removal from CAD system only if a unit is in "available" status.

C____Send dispatch orders to MDT.

Accept MDT responses for:

C____Acknowledge dispatch order receipt
C____En route to dispatch
C____At scene
C Available at scene (with comment)
C____In service
X____Busy (with comment)
C____Out of service (with comment)
C____Change status of the unit to any valid CAD status

C____Accept MDT request for report number on current dispatch and transmit number to MDT.

NA___Allow MDT to initiate onview and traffic stop. Information on a vehicle to submit auto queries to ACIC/NCIC system.

NA___Allow MDT to attach responses from ACIC/NCIC system to incident displayed.

NA___Allow MDT to run full ACIC/NCIC queries through formatted screens.

C____Allow MDT to send messages to dispatcher or other MDT's.

C_____Support MDT emergency button to notify the dispatcher of a peril via a single keystroke.

Notify MDT of changes in dispatch including:

C____Change in dispatch data, status, or comments
C____Cancel from dispatch

C_____Send premise data, HazMat information, hydrant locations, and officer safety alerts to MDT along with dispatch orders, based on user-defined criteria and type of unit.

C_____Allow MDT to request static status of individual or group of units via command. supervisory function.

M_____Differentiate a unit with MDT from non-MDT unit on dispatcher status monitor and working screen.

X_____Allow MDT to add comment to working CAD incident.

C_____Allow MDT to enter disposition for current dispatch.

C_____Allow commands to resend MDT dispatch to terminal without updating time stamps in the event the unit did not get clean data the first time.

C_____Have system automatically send MDT dispatch orders through standard dispatch command without requiring a dispatcher to know if a unit has a MDT or use different command to dispatch to it.

C_____Allow MDT to make CAD history inquiries such as unit history, dispatch history, address history, and any other standard online query to CAD system such as premise data, notes file, etc.

C_____System must automatically format data sent to MDT to fit the screen on MDT.

X_____System must allow a CAD command, which will resync MDT availability (Logon status) after prolonged down time. Such command should poll the MDT controller to find out which units are logged in.

C_____System must provide MDT security whereby user and/or MDT terminal ID may restrict specific commands.

C_____System must disallow MDT commands from any MDT, which is not correctly logged into dispatch system.

General System Functional Requirements

This sub-section addresses certain general functional requirements, which are not conveniently grouped as Call Taking or Dispatching functions above.

Multiple Agencies

For both present requirements and future flexibility, the system shall support multiple jurisdictions and multiple agencies. This means that the system must accommodate at least the following facilities:

C_____Routing of calls to appropriate dispatcher according to jurisdiction and agency.
C_____Duplicate street names, distinguished by city name and/or postdirection and/or jurisdiction.
C_____Independent incident numbering systems by jurisdiction and agency
C_____Summary and management reporting by jurisdiction and agency

Security

X_____System shall provide method for dispatcher to change assignment (such as shift change, etc) without logging out.

C_____Operator sign-on shall require the entry of both an operator identification code and a private password.

C_____The password must not appear when entered.

M_____A record of invalid password attempts shall be recorded after a preset number of allowable retries.

C_____Transaction security can be limited by workstation type or location, in addition to operator password.

X_____The acceptance of user sign-on must result in the screen being displayed with the user-selected colors and layout.

On-Line Help

C_____The system must support on-line "help" for every field in every formatted input transaction. This must include local incident entry, update and database transactions, and remote system interface transactions.

C_____Help" information must be available for dispatcher commands.

C_____The request for "help" information shall be entered by function key without affecting the contents of the field for which the information is requested.

C_____The "help" information must be maintainable on-line.

System Notepad

C_____A system-wide notepad shall be provided which all operators can access. The function of this notepad is to provide quick access to information such as telephone numbers and addresses. The format should include a forty- (40) character description, unlimited text, and a date/time update stamp for initial entry and record changes.

Alarm Database

NA___The system shall include an alarm database, maintainable by the dispatch staff, providing easy entry/access of alarm activations.

User Messaging facility

C_____The system shall include the ability for an operator to send a message to another operator. Mobile Data Terminal operators shall also have this functionality. Logging of MDT messages shall be optional system wide.

Online medical expert system

A_____The system shall provide online access to an EMD system, which prompts the operator with questions in a "tree structure" format to assist the operator in providing emergency medical information to callers.

Screen Printing

C_____The operator must be able to print the contents of the workstation screen or status monitor at any time by function key request or command line.

C_____An entire incident, which includes all appropriate screens, can be printed by a single command regardless of the screen currently displayed.

M_____Whenever a complete message is printed, it shall be reformatted to cause page numbering, page breaks, and column headers at the beginning of each printed page (typically 60 lines).

Message Control

Messages displayed in response to local or remote inquiries shall be displayed to the operator using a method to allow rapid and understandable review. These functions shall include:

C_____Page forward to next page
C_____Page backward to previous page Scroll upwards or downwards by single line
C_____Scroll upwards or downwards via scroll bars Go directly to first page of message
X_____Go directly to last page of message
M_____At least 12 lines of message text can be displayed at a single time.
UNK__Outbound messages must contain requesting unit's ID and display in incoming return in order of time received. **Don't understand**
X_____The number of displayed lines must be able to be adjusted by the individual workstation operator. Any message page displayed can be permanently attached to an incident or unit history record.
C_____Messages must be displayed in sequential order of receipt.

Ease of Use

C_____Menus shall be supported as a training aid but shall not be required for system operation.

C_____Each workstation position must be capable of displaying at least 24 lines of information at one time. "Windows" shall be available for special functions, and can be scrolled up/down and left/right as needed.

C_____In the event of concurrent update or display on the dispatcher's input screen, no data or keystrokes being entered by the operator must ever be lost or skipped.

X_____At any time, the dispatcher must be able to redisplay any recent command entered on the workstation, and then alter and re-enter the command if needed.

X_____Data entry into input forms at the dispatch workstation can be interrupted with a single keystroke or mouse action to allow entry of unit status change or information command (command line).

X_____After a command is entered, processing can resume at the original input form with another single keystroke or mouse action, with the input cursor at the original location in the data form.

Date and Time Display

C_____Each position's display screen should show the current date and time at all times.

Data Base Access

NA____Access to ACIC/NCIC system may utilize fill-in-the-blanks input forms and/or command line query.

NA____Certain types of officer activity will generate a query to offline databases.

X_____The format of input forms must be maintainable on-line without requiring programming experience.

X_____Standard message reformatting logic must be maintainable on-line without requiring programming experience.

C_____Context-sensitive "help" information may be available for each field in these input forms.

C_____Help" information must be available at a high level, which provides general information about the transaction.

C_____“Help" information must be available by function key request.

C_____Help" requests must not alter the input field.

C_____Help" requests must list all valid data for edited fields.

C_____The operator must be able to select the desired field data from the information displayed, with the field automatically updated.

C_____"Help" information must be maintainable on-line.

Provisions of NFPA 1221 and CALEA

Annex D Computer-Aided Dispatching (CAD) Systems

D.1 The CAD system should provide automated decision-support aids to telecommunicators by organizing and managing the real-time processing of informational items belonging to the following classes:

1. Alarms, including other requests for service
2. Incidents and events
3. Resources utilized by the communications center
4. Other classes, as directed by the authority having jurisdiction

D.1.1 Each item should have the following characteristics:

1. Unique identifier
2. Status
3. Location
4. Description
5. Relationship to other items
6. Other characteristics, as directed by the authority having jurisdiction

D.1.1.1 Alarm times should, as a minimum, also include the following characteristics:

1. Source
2. Priority
3. Type

D.1.1.2 Incident items should, as a minimum, also include the following characteristics:

1. Incident management structure
2. Evidentiary information

D.1.1.3 Resource items should, as a minimum, also include the following characteristics:

1. Capabilities
2. Authorizations
3. Assignments

4. Activities

D.2 The CAD system should archive items in a records management system for later retrieval, analysis, and reporting.

D.3 The CAD system should record a history (audit trail) of the following actions taken with the items:

1. Creation
2. Change, including modification, deletion, or supplementation
3. Disposition, including close-out, archiving, and transfer

D.3.1 Each entry in the history should include the following:

1. Coordinated universal time (UTC) of action
2. Identification of the individual performing the action
3. Effects of action on the characteristics of the items

D.4 The automated exchange of digital information related to alarm objects between the communications center and external systems should be accomplished in accordance with standards published by the National Emergency Numbering Association (NENA) and the Association of Law Enforcement Communications Officials, International (APCO).

The automated exchange of digital information between communications centers should be accomplished in accordance with standards published by APCO.

The automated exchange of information between communications center and transportation information systems should be accomplished in accordance with standards registered with the Intelligent Transportation Systems (ITS) Data Registry.

D.5 Reference Material

D.5.1 APCO Project 36 addresses standard format and content requirements that apply to information exchanged between CAD systems.

APCO International, Ind., World Headquarters, 351 N. Williamson Blvd., Daytona Beach, FL 32114-1112; (904) 322-2500, (888) 272-6911; Fax (904) 322-2501.

D.5.2 NENA Standard 02-010 addresses standard format and content requirements that apply to information exchanged with 9-1-1 databases.

National Emergency Number Association, 4350 North Fairfax Drive, Suite 750, Arlington, VA 22203-1695; (800) 332-3911; (614) 741-2080; Fax (614) 933-0911.

D.5.3 Intelligent Transportation Systems Data Registry includes standards with standard format and content requirements that apply to information exchanged with transportation information systems.

Institute of Electrical and Electronics Engineers, ITS Data Registrar, P.O. Box 1331, Piscataway, NJ 08855-1331; (732) 981-0060; Fax (732) 981-1721.

4. Documentation Provided

- TFD portables and mobiles list 3/8/06
- Radio Coverage map
- Tower locations
- Fire Rescue Frequency Bands
- Radio antenna frequencies
- Radio Channel Unit Inventory
- Annual Report
- Activity Report
- Organizational Structure
- Organizational Chart
- TucsonPropsA1.pdf
- System Data TPD folder of documents
- FCC Lic Update 2-28-06.pdf
- 911 Call Volume Comparison
- City of Tucson Update.pdf

TABLE 3.2.1A
Tucson Fire Department

	ATTRIBUTE	Tucson Fire Dept.
Sufficient Capacity		
1	Dispatch Center Size	5.0
2	Dispatch Center Staff	5.0
3	Technology	5.0
Environment		
4	Light	5.0
5	Temperature and Air Control	5.0
6	Cleanliness	5.0
7	Furniture	5.0
8	Technical	5.0
9	External Facilities	2.0
10	Internal Facilities	5.0
Effectiveness		
11	Radio System	5.0
12	Console	5.0
13	Computer Aided Dispatch (CAD)	5.0
14	Telephone	5.0
15	Interoperability with Other Agencies	5.0
Technology		
16	Reliability	5.0
17	Maintenance	5.0
18	Back-Up	5.0

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.2.2 Tucson Police Department

A. Current Environment

1. Operational

The Communications Division is organized under the Tucson Police Department, Operations Bureau - 1. The Division provides call taking and dispatching services for the Tucson Police Department.

The Division receives 9-1-1 calls from the Primary PSAP and prepares them for dispatch; the Division answers other seven digit lines and prepares them for dispatch as required.

The Division has an authorized strength of 104 personnel including management and technical positions. The Division is currently performing its tasks with 80 personnel. Generally the work shift is designed around four – ten hour shifts; however, the schedule is fairly complex and addresses the varying call volumes experienced during the different times of the day.

2. Functional

The Division dispatches and controls, via radio monitoring, all activities of the Tucson Police Department.

The operational area is generally the City limits of Tucson; however some Officers do travel outside the City limits when going to a certain Hospital and/or writing reports.

The Department is divided into 5 dispatch groups, which drives the organization of the dispatchers.

The Division provides ACJIS and NCIC services for the Department.

The Division also monitors several special activities; such as the 'Bait Cars', monitoring of the 'Gateway' during interoperability operations, initiates call out and monitors the traffic during major incidents and investigations.

The following statistics are representative.

Activity	2003	2004	2005
Wireline 911 Calls Received	**311,152**	**462,023**	**390,072**
Wireless 911 Calls Received	**80,885**	**130,199**	**203,545**
Total 911 Calls Received	**392,037**	**592,222**	**592,607**
Wireless Call %	**13.4**	**14.7**	**23.1**
Average 911 Answer Time	**10**	**11**	**14**
Other Emergency Calls Received **911 Lines** **R.D. Lines** **Radio Initiated**	**N/A**	**Admin-99,999** **Ring Down - 104,100**	**Admin – 124,300** **Ring Down – 102,400**
Administrative/Non-Emergency Calls	**122,568**	**Approximately 124,000**	**Approximately 124,300**
Total Incoming Calls	**514,605**	**920,321**	**827,530**
Police Calls Dispatched	**426,294**	**357,772**	**344,183**
Police Officer Initiated	**37,130**	**35,689**	**33,522**
Fire Events Dispatched	**N/A**	**N/A**	**N/A**
Emergency Medical Incidents	**N/A**	**N/A**	**N/A**
Medical Pre-Arrival Instructions Given	**N/A**	**N/A**	**N/A**
Number of 911 Transfers	**N/A**	**N/A**	**N/A**
CJIS (SCIC/NCIC) Inquiries	**N/A**	**N/A**	**Field – 1,333,345** **Communications**

Activity	2003	2004	2005
			– 1,971,000
CJIS File Maintenance (Entries, Mods, Cancels, etc	**N/A**	**N/A**	**N/A**
Administrative Messages	**N/A**	**N/A**	**2,550,000**
Total CJIS	**N/A**	**N/A**	**5,854,345**

3. Technical

The Division's 9-1-1 customer premise equipment is a Plant Vesta. Qwest is the 9-1-1 routing provider, the network has fifteen (15) 9-1-1 trunks; the database is managed by Intrado. The equipment meets all FCC 94-102 requirements. The PBX services are provided by a Meridian system with twenty-five (25) other lines.

The radio consoles are Motorola Gold Elite units with a central electronics system.

The computer assisted dispatch (CAD) system is provided by Northrup-Gruman (previously known as PRC).

The system has been updated regularly over the several years it has been in service. Many features are specifically designed to assist the unique Tucson Police operating environment. It is designed with a redundant processor. The existing CAD is capable of running "10/28's and 29's" through the CAD. The process is not automatic at this time.

Recording equipment is being provided by Dictaphone at the instant replay locations and by CVDS as the main recorder. Many recordings are requested and issued to the police Department for evidentiary purposes.

B. Positive Attributes of Current Environment

1. Operational

All stressed that management is very supportive and responds quickly to requests; however, many issues cannot be readily addressed. This operation is characterized by a strong sense of team work, as is evidenced by their in-house designation of work "teams".

Everyone encountered was proud of their organization and the role that they have in the community. The operation is able to carry out its tasks even in the face of some technical and other issues.

2. Functional

The Center is able to handle the large volume of traffic that is generated by their complex community. The operation has been able to keep up with the growth and increase in calls in the community even though they are somewhat short staffed. Supervision and line staff seemed to have the same goals and direction.

3. Technical

The CAD system is liked and the upgrades are appreciated by the staff. This has been a largely in-house effort. The system has been made particularly adapted to the Tucson environment.

C. Desired Attributes of Current and Future Environment

1. Operational

Many of the desired improvements for the operators had to do with the physical working environment:

- The air quality needs improvement.
- The design should be conducive to proper cleaning.
- The joint use kitchen should be kept cleaner.
- Would like an attractive break and quiet room.
- Would like to have natural lighting and individual lighting controls.
- Would like individual heating and air controls
- Have flat screen monitors
- Better chairs. The chairs need position adjustments.
- The noise level should be reduced
- All felt that it is important that the ability to see each other and interact visually be kept.

2. Functional

There will be a requirement for additional consoles and possibly telephone positions; because two more dispatch teams are being added soon. The adding of these "Teams" indicates the dynamic growth being experienced by the community and the Department.

The call volume is currently being handled; however with the expected increase in calls with community growth the staff will need to be brought up to full staffing.

3. Technical

The radio coverage problems areas in the City need to be improved. The areas are the Houghton Corridor, A – Mountain, west of Cat Mountain, and the west end of 36th Street. In building coverage is very spotty and inconsistent. Radio interference has been a problem.

All local agencies need to have common or interoperability frequencies.

The system should have an improved interoperability technology. The current radio interoperability "Gateway" device is difficult to use

4. Attributes Matrix

Please refer to TABLE 3.2.2A, a summary of system attributes that may be emphasized in a PCWIN regional communications system.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	Tucson Police Communications Division
File Name:	Pima County Tucson Police Dispatch Interview Record Final.doc
Date of Interview:	February 23, 2006
Location of Interview:	Police PSAP/Dispatch Center 270 S Stone Avenue Tucson, Arizona
Primary Interviewee:	Linda Basham-Gilbert Communications Superintendent
CTA Interviewers:	JM Dye

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Communications Division is organized under the Tucson Police Department, Operations Bureau - 1. The Division provides call taking and dispatching services for the Tucson Police Department.

2. The Division receives 9-1-1 calls from the Primary PSAP and prepares them for dispatch; the Division answers other seven digit lines and prepares them for dispatch as required.

3. The Division dispatches and controls, via radio monitoring, all activities of the Tucson Police Department.

4. The operational area is generally the City limits of Tucson; however some Officers do travel outside the City limits when going to a certain Hospital and/or writing reports.

5. The Department is divided into 5 dispatch groups, which drives the organization of the dispatchers. Two more dispatch and police 'Teams" will be added in the next two years – indicating the dynamic growth being experienced by the community and the Department.

6. The Division provides ACJIS and NCIC services for the Department.

7. The Division also monitors several special activities; such as the 'Bait Cars', monitoring of the 'Gateway' during interoperability operations, initiates call out and monitors the traffic during major incidents and investigations.

8. The Division has an authorized strength of 104 personnel including management and technical positions. The Division is currently performing its tasks with 80 personnel. Generally the work shift is designed around four – ten hour shifts; however, the schedule is fairly complex and addresses the varying call volumes experienced during the different times of the day.

Present Situation

1. The Division's 9-1-1 customer premise equipment is a Plant Vesta. Qwest is the 9-1-1 routing provider, the network has fifteen (15) 9-1-1 trunks; the database is managed by Intrado. The equipment meets all FCC 94-102 requirements. The PBX services are provided by a Meridian system with twenty-five (25) other lines.

2. The radio consoles are Motorola Gold Elite units with a central electronics system.

3. The computer assisted dispatch (CAD) system is provided by Northrup-Gruman (previously known as PRC). The system has been updated regularly over the several years it has been in service. Many features are specifically designed to assist the unique Tucson Police operating environment. It is designed with a redundant processor. The existing CAD is capable of running "10/28's and 29's" through the CAD. The process is not automatic at this time.

4. Recording equipment is being provided by Dictaphone at the instant replay locations and by CVDS as the main recorder. Many recordings are requested and issued to the police Department for evidentiary purposes.

5. "Hits" responses are confirmed through the records section.

Present Problems

1. There are radio coverage problems in several areas of the City. These include the Houghton Corridor, A – Mountain, west of Cat Mountain, and the west end of 36th Street. In building coverage is very spotty and inconsistent. Radio interference has been a problem.

2. Several local agencies do not have the City frequencies and vice versa.

3. The 'Gateway' device is difficult to use.

Future Requirements

1. Various PSO's and Dispatchers were interviewed with the following issues and statements:

    - The CAD system is liked and the upgrades are appreciated by the staff.
    - All stressed that management is very supportive and responds quickly to requests, however, many issues cannot be readily addressed.
    - The air quality needs improvement. Some felt that this was causing some sickness while at work.
    - The entire structure has cleanliness issues – the design is not conducive to proper cleaning. Some surfaces and areas cannot be accessed and are thus not cleaned regularly.
    - The joint use kitchen seems to be sometimes unkempt.
    - Would very much like an attractive break and quiet room.
    - The existing lighting (overhead fluorescent) is sometimes very harsh; would very much like to have natural lighting and individual lighting controls.
    - The temperature is difficult to control, would like individual heating and air controls.

- The use of flat screen monitors would reduce desk top clutter.
- There have been some problems with chairs and better chairs would serve. The chairs need to rise to higher positions.
- The confined space of the center creates a noise problem sometimes (normally the people in the room are causing the problem). A design that reduced noise would be better.
- All felt that it is important that the ability to see each other and interact visually be kept.

The draft of this record was sent to Superintendent Linda Basham-Gilbert on March 21, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address:
Communications Superintendent
Linda Basham – Gilbert
270 S Stone Avenue
Tucson, Arizona 85701-1917

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CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Tucson Communications & IT**
File Name:	-	**Tucson Communications & IT - Final.doc**
Date of Interview:	-	**February 28, 2006**
Location of Interview:	-	**Price Service Center**
Persons Interviewed:	-	**Anita Velasco, Communications Administrator** **David Jones, Fire/MEDS Coordinator** **Carl Drescher, City Information Technology** **John Crosby, Communications Superintendent** **Yvonne Morken, Fire IT Manager** **Christine O'Conner, Deputy Director, Dept of Information Technology** **Jim Merten, Communications Superintendent** **Rich Brace, Communications Superintendent**
CTA Interviewer:	-	**Nate McClure, Jon Farrar**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Communications Division of the Department of General Services, Radio Operations Section provides emergency call-taking and dispatching services for the City of Tucson. This includes answering 9-1-1 calls and transferring them to the appropriate jurisdiction. The Operations section provides dispatching services for the Tucson Fire Department and, on a contractual basis, dispatching services for five county fire districts; the Northwest Fire District, Golder Ranch Fire District, Avra Valley Fire District, Three Points Fire District and Picture Rocks Fire District. The Section also operates Tucson MEDS Control, a centralized medical dispatching service for Pima County and portions of Southern Arizona.

In addition, the section also serves as the control point for non-emergency radio activity of other city divisions and departments. This function includes being an after-hour, weekend, and holiday contact point for citizens requesting city services.

2. The Communications Maintenance Section of the Communications Division is responsible for the installation, and maintenance of the various communications systems used by the City of Tucson.

3. The Information Technology Department supports the various information technology applications used by agencies of the City of Tucson and provides strategic planning for information technology on a citywide basis.

4. While the Communications Division provides dispatch service to the Tucson Fire Department, dispatch operations for the Tucson Police Department are provided by the police department.

5. Anita Velasco is the Administrator of the Communications Division. As such she is responsible for both the Radio Operations Section and the Communications Maintenance Section. She also is the Pima County 9-1-1 Coordinator for the regional 911 system. Jim Merten is the Communications Superintendent and David Jones is the Communications Coordinator for the Radio Operations Section. Rich Brace is the Superintendent of the Communications Maintenance Section. Christine O'Conner is the Deputy Director of the Department of Information Technology. Carl Dresher is an Information Technology Administrator and John Crosby is the Superintendent of Emergency Communications Data Services. Yvonne Morken is the Information Technology Manager for the Tucson Fire Department.

Present Situation

1. Incoming 911 calls, both wireline and wireless, are answered by the Emergency 911 Operators. They determine the location and nature of the call, and then transfer the call to either the police or fire call takers or to another agency as appropriate. The call takers then get the necessary information and enter the call into the CAD system. In 2005, the Primary PSAP answered 621,372 911 calls with an average answer time of five seconds. In addition to the calls transferred to them, the secondary Fire/Medical PSAP received another 103,717 emergency calls by other means and also answered 336,183 administrative or non-emergency calls.

The classification in the primary PSAP is Emergency 9-1-1 Operator with an annual pay range of $23,026 - $35,797. This position is responsible for determining if a Police, Fire or Medical emergency exists. The protocol used to determine the primary agency responsible for a particular response was determined by Tucson Police and Tucson Fire. For example, a motor vehicle accident with injuries is transferred to the medical dispatcher. The medical dispatcher notifies police of the incident. Tucson has found by using this initial call screening procedure, fire and medical calls are not delayed due to the large call volumes within the Police Department. The salary for a Public Safety Dispatcher is $28,995 - $45,094.

2. In addition to providing dispatch service for the six departments noted above, the section provides the MEDS Control function for the region. This involves patching the responding medical units with the emergency rooms of the area hospitals. They also arrange for medical helicopter response to the scene when request by field units.

3. The Communications Division installed a Computer Aided Dispatch (CAD) system from Application Data Systems Inc. (ADSi) in 1991. They have made extensive modifications to the software in order to meet the needs of the department. The CAD system currently has ten defined response areas with sixty different jurisdictional divisions. Based on the location and jurisdiction, there are over 4,600 incident types. The system provides predefined responses for up to five alarm levels per incident type. Many of the Tucson Fire Department's units serve multiple functions. An engine company may also be a paramedic assessment unit, a hazardous materials engine, technical rescue unit and so forth. The CAD system is able to make unit recommendations based on the different functions. It prioritizes calls based on nine different priority levels. The CAD system dynamically makes unit recommendations based on the closest appropriate unit in terms of distance and jurisdiction. The system also has the ability to rotate assignments between multiple companies at a single fire house. The CAD system controls fire station alerting and provides automatic paging through interfaces with commercial paging services.

The fire department mapping system uses quarter mile grids. On fire calls, the CAD system searches the grid that the call is in as well as eight surrounding grids for out of service fire hydrants. It provides premises alerts in the same way (primary and surrounding grids).

The fire stations have access to the CAD system. The CAD system interfaces to the records management system. Tucson uses a fire records management system also by ADSi. Northwest Fire District uses Firehouse's RMS. Dispatch has access to 120 days of closed incidents and two to three weeks of unit history records on line.

The Tucson Fire Department has had an Automatic Vehicle Location System (AVL) in operation since 1997. The system automatically updates each unit's location in CAD every 13 to 15 seconds. The information is not graphically displayed for the dispatcher. Instead it is displayed as coordinates (350S/1220E). The system is in the process of being updated.

Units are equipped with mobile terminals which run the ADSi mobile client. There are status buttons on the terminals which allow the units to change their status. The dispatchers can do this manually as well.

The system uses IBM's High Availability Cluster Multiprocessing (HACMP). There are two clusters – one for CAD and one for Tucson Fire's RMS. There is a stand-by dispatch computer at the Tucson Police Department's Headquarters downtown. All data files on the standby system are automatically updated every four hours. There is no scheduled system downtime. Very few outages occur.

Present Problems

1. Staffing – At the time of this interview there were seven unfilled dispatcher positions in the operations division. That is approximately 12.96 percent of the authorized staff.

2. Radio coverage is an issue. More details will be provided during radio system interviews.

3. Interoperability via the Gateway system is cumbersome for field units. They either forget to request the system be activated, and it is difficult to get units to switch frequencies.

4. The console equipment is at the end of its lifecycle.

Future Requirements

1. None.

Additional Comments

1. Tucson has experienced significant, rapid growth. Over the past twenty years, the population of the city has increased by forty-four percent. That same rate of growth is expected to continue for the next twenty years. Fire department emergency responses have increased by 233% of the past thirty years.

The draft of this record was sent to Anita Velasco in April, 2006.
Corrected draft was returned to CTA Communications on May 2, 2006.

Nate McClure
CTA Communications Interviewer

Interviewee Name:
Anita Velasco

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2. Dispatch Center Survey

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

2/27

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Communications/City of Tucson

Contact Name: Anita Velasco **Position:** Communications Administrator

Phone: 791-3112 **Email:** Anita.Velasco@tucsonaz.gov

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement _____ Combined Fire/EMS 6

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) 4

Other:

Please list the agencies and describe the geographic area served by your communications center

Fire
Tucson Fire Department-City Limits of Tucson, 3 Pts
Northwest Fire, Golder Ranch Fire, Avra Valley Fire, Picture Rocks Fire-Northwest portion of Pima County

EMS - Helicopters

911 Services Provided:

Primary PSAP X Secondary PSAP X

Basic 911 _____ Enhanced 911 X Wireless Phase I X Wireless Phase II X

VOIP 911 X

Page 1 of 7

COMMUNICATIONS

COMMUNICATIONS

Pima County
Wireless Integrated Network

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? Primary 0 / Secondary 8

How many positions does your PSAP have that can answer 911 calls but not dispatch? Primary 8 / Secondary 4

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Primary

Activity	2003	2004	2005
Wireline 911 Calls Received	343,791	336,817	293,104
Wireless 911 Calls Received	226,445	264,094	323,265
Total 911 Calls Received	570,236	600,911	621,372
Wireless Call %	39.7	43.9	52
Average 911 Answer Time	3	4	5
Other Emergency Calls Received	88,188*	89,309*	103,717*
911 lines	**66,894*	**68,633*	**79,885*
R.D. Lines	**19,822*	**19,397*	**22,255*
Radio Initiated	**1,472*	**1,279*	**1,031*
Administrative/Non-Emergency Calls	304,487	322,241	336,183
Total Incoming Calls	962,911	1,012,461	1,060,726
Police Calls Dispatched	N/A	N/A	N/A
Police Officer Initiated	N/A	N/A	N/A
Fire Events Dispatched	17,122	16,938	19,509
Emergency Medical Incidents	71,066	72,371	86,662
Medical Pre-Arrival Instructions Given	1,611	1,678	1,776
Number of 911 Transfers	517,997	546,877	528,787
CJIS (SCIC/NCIC) Inquiries	N/A	N/A	N/A
CJIS File Maintenance (Entries, Mods, Cancels, etc	N/A	N/A	N/A
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) X Dispatch Police/Law Enforcement N/A

Call Answering (administrative) X Dispatch Fire X

Call Answering (Other) (i.e. after hours, etc.)	X	Dispatch EMS	X
Traffic Monitoring	N/A	Dispatch City/County Services/DPW	X
Warrant/Article Entry/Confirm	N/A	Dispatch Animal Control	N/A
NCIC/state CIC checks	N/A	Other tasks performed:	N/A

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	Plant	Vesta	2.2 Serv. Pk. 2	3/27/06
Answering Position Equipment	Plant	Vesta		3/27/06
Map	Plant	Mapstar	5.1	
CAD	Application Data Systems, Inc. (ADSi)	CADForce	N/A	12/07/91 – last major update 02/04
Radio Console	Kustom Console	-------	-------	1982
UPS	Powerware	9315-50/50 (Qty. 2)	PO5003261200112	May 1998
Instant Recall Recorder	Dictaphone	5713	-------	04/17/89
Logging Recorder	CVDS Inc.	70117	06/13/05	06/30/02
PBX				
Master Clock	Spectracom	8183	02/07	01/23/97

9-1-1 System

	PRIMARY PSAP	SECONDARY PSAP
1. Number of 911 lines	1. 36	1. 13
2. Number of other lines	2. 2	2. 102

3. ANI & ALI printers – number & location 2

4. Abandoned call alarm 2

5. Single Button Transfers 16

6. Ring down circuits PRIMARY 2 / SECONDARY 91

Telephone Service Provider Qwest

911 Service Provider Qwest

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? Y

911 interface Y/N?Y

RMS interface Y/N? Y

NCIC/State interface Y/N? N

Mobile Data & AVL Y/N? Y

Logging Recorder

Channel Capacity ~~100~~ 96

Recording format (tape, DAT, VHS, etc.)Raid Array, DVD

Staffing

ON-DUTY STAFF	9-1-1 CALL TAKER	FIRE/MEDS CALL TAKER	SHIFT SUPERVISOR
0700-2300	4	12	1
2300-0700	4	11	1

Primary PSAP

	9-1-1 Call Taker
Authorized Full Time	20
Actual FT	18
Authorized Part Time	0
Actual Part Time	0

Secondary PSAP

	Call Taker Dispatcher	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	54	7	1*	0	1	0	2
Actual FT	42	6	1	0	1	0	2

*Database/GIS Support comes from a different Organization.

OTHER SYSTEMS

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

TFD-F1, F2, F3, F4, F5, F6, F10

County Fire-C1, C2, C3, C4

Meds-CH10, Telem-Ch1, 4, 6, 8

Gen Servc-GS1, GS2, GS4 TRAN, GS6

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Mutual Aid CH5

Gateway

_____

GS-3

What agencies do you need to communicate with but cannot?

Rural Metro FD

Drexel Heights FD

DM Fire

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Radio Coverage

To talk with other agencies requires a number of steps utilizing the Gateway frequency.

Console Equipment

Capacity for additional frequencies

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

CTA COMMUNICATIONS DISPATCH CENTER INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Tucson Police Department

Contact Name: Linda Basham-Gilbert **Position:** Comm Superintendent

Phone: 520-791-2563 **Email:** lbasham1@tucsonaz.gov

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement 1 Combined Fire/EMS

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS)

Other:

Please list the agencies and describe the geographic area served by your communications center

Tucson Police Department - City of Tucson

911 Services Provided:

Primary PSAP _____ Secondary PSAP Tucson Police Department

Basic 911 _____ Enhanced 911 Yes Wireless Phase I Yes Wireless Phase II Yes

VOIP 911 Yes

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 4 ✓ ← There are 3 supervisors

How many positions does your PSAP have that can answer 911 calls but not dispatch? 17 ✓

How many positions does your PSAP have that can dispatch but not answer 911 calls? 6 ✓ Dispatch

Activity	2003	2004	2005
Wireline 911 Calls Received	311152	462023	390072
Wireless 911 Calls Received	80885	130199	203545
Total 911 Calls Received	392037	592222	592607
Wireless Call %	13.4	14.7	23.1
Average 911 Answer Time	10	11	14
Other Emergency Calls Received	N/A	Admin - 99999 RingDown- 104100	Admin - 99373 RingDown- 10240
Administrative/Non-Emergency Calls	122568	Approximately 124,000 - data unreliable due to equipment problems	Approximately 124,300 - data unreliable due to equipment problems
Total Incoming Calls	514605	920321	827530
Police Calls Dispatched	426294	357772	344183
Police Officer Initiated	37130	35689	33522
Fire Events Dispatched	N/A	N/A	N/A
Emergency Medical Incidents	N/A	N/A	N/A
Medical Pre-Arrival Instructions Given	N/A	N/A	N/A
Number of 911 Transfers	N/A	N/A	N/A
CJIS (SCIC/NCIC) Inquiries	N/A	N/A	Field: 1333345 Commo & Others:

			1971000
CJIS File Maintenance (Entries, Mods, Cancels, etc	N/A	N/A	N/A
Administrative Messages	N/A	N/A	2550000

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) Y

Call Answering (administrative) Y

Call Answering (Other) (i.e. after hours, etc.) N

Traffic Monitoring N

Warrant/Article Entry/Confirm N

Dispatch Police/Law Enforcement Y

Dispatch Fire N

Dispatch EMS N

Dispatch City/County Services/DPW N

Dispatch Animal Control N

NCIC/state CIC checks Y Other tasks performed: Security monitoring, trouble shoot internal & external equipment for field personnel, Pronet, Bait Car, Major incident notifications, initiate call-outs, monitor Gateway during combined task force efforts, keep Force Commanders updated with unusual situations, page helicopter, LoJack..

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	Plant	Vesta	2.2 Serv Pk 2	3/27/06
Answering Position Equipment	Plant	Vesta	unk	09/06
Map	Plant	MapStar	5.1	2005
CAD	Northrup-Grumman	Cobal CAD	3.1	1991- +many licensing upgrades
Radio Console	Motorola	Centracom Elite Dispatch	09/07/04	09/03/97
UPS	unk	unk	unk	unk
Instant Recall Recorder	Dictaphone	5713	N/A	04/17/89
Logging Recorder	CVDS	70117	6/13/05	06/30/02
PBX	N/A	N/A	N/A	N/A
Master Clock	Spectracom	8183	02/07	1/23/97

9-1-1 System

Number of 911 lines 15

Number of other lines 25

ANI & ALI printers – number & location 1 in Comm Center

Abandoned call alarm Yes

Single Button Transfers Yes

Ring down circuits 12

Telephone Service Provider Qwest

911 Service Provider Qwest

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? Yes

911 interface Y/N?Yes

RMS interface Y/N? Yes

NCIC/State interface Y/N?Yes

Mobile Data & AVL Y/N? Mobile Data Only - Yes

Logging Recorder

Channel Capacity 84

Recording format (tape, DAT, VHS, etc.)Raid Array DVD

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	5 (0700-0800) 7 (0800-1200) 10 (1200-0230 on Sun, Mon, Tue, Wed. 11 (1200-0230 on Thu, Fri, Sat 5 (0230-0500) 4 (0500-0700 1 (0800-0900 on Non-emergency) 2 (0900-2200 on Non-emergency)	6 (0700-0230) 6 (0230-0500 (Fri, Sat, Sun) 5 (0230-0500 Mon, Tue, Wed, Thur) 4 (0500-0700 Fri, Sat, Sun 4 (0500 - 0700 Mon, Tue, Wed, Thur)	when overlapping staffing allows	1 - 4
Afternoon Shift	See above	"	"	"
Night Shift	"	"	"	"

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database / GIS	Tech Support	Training	Public Education	Mgmt / Admin
Authorized Full Time	86	9	n/a	1	2	n/a	6
Actual FT	61	10	n/a	1	2	n/a	6
Authorized	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Part Time							
Actual Part Time	n/a	n/a	n/a	n/a	n/a	n/a	n/a

OTHER SYSTEMS

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

See Attachment

F1 F2

F3 F4

F5 F6

F7 F8, F9, F10, F12(Gateway)

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Use all of the above

What agencies do you need to communicate with but cannot?

Some local agencies do have our frequencies. List is attached.

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

Radio coverage is spotty or unavailable in areas such as the Houghton Corridor, behind A-Mountain, west of Cat Mountain, west end of 36th street. We have had serious problems with intentional radio interference for several years. We have had some difficulty with our current frequency combining procedures. In building coverage is sometimes iffy.

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

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3. Computer System Checklist – Dispatching Operations

Instructions for Dispatching Operations Checklist

The Pima County community is in the process of reviewing the current communications systems. We are asking that the Dispatch Operations Departments participate in an information gathering process to assist in obtaining information regarding the existing Computer Assisted Dispatch operating systems in use in the community. The intent of this review is to determine the size and capacity required now, and in the future, and elicit responses concerning operational features. The existing systems may require enhancement for size and capacity; as well as the addition of new features and functions. The existing systems should be applied to standards created by the National Fire Prevention Association in their NFPA 1221. The NFPA 1221 provisions have been adopted by the Commission on Accreditation for Law Enforcement Agencies (CALEA) for CAD systems. These NFPA 1221 requirements as they apply to CAD systems are included at the end of this document for your review.

The checklist contains functions found in many, modern CAD systems. The goal is to identify the functions desired by the dispatch operations community. The checklist contains entries that apply to law enforcement, fire, EMS, and call taking. You should respond to areas that affect your operation.

We ask you to read closely the following checklist. This checklist contains response areas, which we are asking that you complete. This section may be returned on the original forms provided. Each item in this response document should be marked with one of the following responses:

C - Function is completely supplied by existing system (s).

A- Function is desired and would be an add–on to the current system.

M - Function is desired and could be provided with modifications to the existing software package.

NA- Function does not apply to this agency.

X - Function is not required or desired.

This part of the checklist should include a response to each element marked as above for additional information. In the event that additional information is required it can be provided

on a separate sheet and further describe the the specific requirement. Additional information should indicate the element number to avoid any ambiguity and should identify any additional comments or explanation required.

If there are other features, functions, or concerns that you have, please write them out in free form and simply attach them to your checklist.

We thank you in advance for your efforts.

Call Taking Functions

Incident Entry

C There shall be single format for entering event data, i.e., law enforcement and fire/EMS events use the same format.

The initial entry and subsequent modification of an incident shall be logged into a file that includes:

C Date/Time stamp
C User ID
C Workstation location
C Information changed with before and after "image'

The system must accept the following data elements in a preformatted screen:

C Location of incident
C Additional location comments, independent from narrative information
C Incident type for each type of service to respond
C Incident type to create multiple types of service
C Ability to override priority by dispatcher
C Reporting party name
C Reporting party address
C Reporting party phone
C Vehicle description
C Suspect description
C Unlimited text information (via repetitive entry and field scrolling functions)

The following facilities must be supported:

C Address verification based on street name (Soundex) and street address number block range. Soundex can be activated/deactivated by system administrator.
C Addresses can be entered into the system by street intersection or common place names.
C Address verification produces appropriate Fire district; Law Enforcement beat, etc. and recommends most appropriate unit to dispatch based on:

C Type of call
C Unit availability
C Response zone proximity
C Dispatcher can override unit recommendations.
C Dispatcher can override response zones.
C Units can be relocated to appropriate stations.
C Location verification occurs via function key prior to saving.
C Response to location verification choices is not required prior to entry of additional event
C Ability to freely move directly to any field in input form.

Incident Type Codes

C Incident type codes must be validated during incident entry.

C There must be the ability to display selection list for incident types.

X There must be the ability to select incident type from a displayed list, with data automatically inserted in field.

The incident type code must automatically provide the following information:

C Description of incident type
C Priority level or requirement for manual specification
C Dispatch-to-on scene timeout value
C On scene-to-next status change timeout value specific or non-standard incident routing

C The above information must be modifiable on-line.

E-911 (ANI/ALI)

C The CAD system must interface directly to the telephone company E-911 system.

C Information from E-911 (calling number and service address) must appear automatically on the incident entry screen without specific operator action.

C The E-911 information must be accepted into the dispatch information by dispatcher pointing device or function key action.

C The E-911 information display must be able to capture all information as provided by the telephone company backup display.

C The E-911 location can be utilized without specific operator action, unless manually overridden.

X If the E-911 information is overridden, it must still be recorded in the incident record for later review.

C The E-911 location information must be validated using the geographic files on the CAD system, which are received from the Public Safety geo-database.

C The operator must be able to answer the E-911 telephone call prior to displaying an incident input form; the E-911 information must be automatically displayed when the entry form is displayed and continuously able to be recalled until a new call is answered or cleared by operator.

Geographic File Interface

A The system shall provide the capability to use longitude/latitude for designating geographic locations. This functionality shall provide an accuracy of +/- 125 meters according to the latest FCC Rules 94.102 and 98-245.

C All locations must be entered in "free form", without requiring the entry of data into specific data fields in the input form.

C The system must support the entry of apartment number, lot numbers and so forth as part of the "free form" location field.

C Partial ("half") addresses must be supported.

C Premise address modifiers must be supported (e.g., 432B MAPLE ST Apt XXX).

X Premise address entry must result in a display of both low and high cross streets.

X Intersection entry must result in a display of the premise addresses of both streets at the intersection.

C Common place name entry displays equivalent address or establishment number/Identifier.

C The system must have a "near match" capability in order to identify street or common place names for which no exact match is found in the geo-file.

C A minimum of two characters is needed to result in a street or place name selection list.

C The "near match" capability must be based on a dynamic algorithm to match names; it shall not require a predefined list of misspellings.

C The system must support an "alias" function to permit use of alternative names such as "10th" for "Tenth", "JFK Dr" for "John F. Kennedy Drive", etc.

C Street name choices for intersections must be presented only for streets, which physically intersect.

C The operator must be able to enter common place locations by specifying any word in the place name.

C The operator must be able to verify the address at any time during incident entry process by function key request.

C The operator must be able to override the information from the geographic file during incident entry.

C The system shall produce a report of all locations entered as operator overrides.

C The operator must be able to change any location entered and/or validated at any time prior to final incident acceptance by simply re-keying the location into the input form.

C Any call taker or dispatcher must be able to update an incident location at any time following incident acceptance.

C Whenever a location is updated, a record of all prior locations, which have been entered, must be maintained in the incident record.

C The system must automatically route the incident to the dispatcher responsible for the location entered but without interfering in any way with multiple dispatchers working the call simultaneously.

C The dispatcher shall be notified of address jurisdiction.

Priority Incident Interrupt

C The operator must be able to interrupt and suspend an incident that is being entered in order to service an incident, which has a higher urgency.

C This interruption can be made at any time by function key.

C An indication shall be displayed to the call taker to indicate the number of incidents suspended.

C The system administrator can set the limit to the number of calls, which can be suspended.

C Following the entry of the high priority incident, the system must automatically resume processing of the interrupted incident(s) when recalled by the operator.

Fast-Transfer Incident Entry

C A critical incident can be entered at any time following the entry of location and type information. A fast-transfer incident can be entered with no more keystrokes than needed for normal entry.

C Following a fast-transfer entry, the input screen must be prepared to allow immediate entry of additional information simultaneously by multiple operators.

C The dispatcher must be notified that the call taker is entering additional information.

C The fast-transfer function can be repeated any number of times during the entry or supplement of an incident.

Incident Transfer to Dispatch

C The system must automatically route a new incident to the appropriate dispatch workstation(s) depending upon the location of the incident and the call classification (Law Enforcement, Fire, or EMS).

C The operator must be able to override the automatic routing of incidents by location for routing to a specific dispatcher(s) depending upon type of incident.

C An incident can be automatically routed to a predefined dispatcher(s) for special incident types.

Duplicate Incident Detection

C During incident entry, the call taker shall be notified of any active incidents near the one being entered but this shall in no way interfere with the normal call-taking functions.

C The duplicate detection process shall be advisory only; the operator shall determine whether the new call is a duplicate, and whether to proceed with this transaction.

C The call taker must be able to display the complete record of any potential duplicate by function key without interrupting current data collection process.

C The duplicate incident can be supplemented with the new information by function key request but this shall in no way interfere with the normal call-taking functions.

C If an incident is entered which is later determined to be a duplicate of another incident, the dispatcher must be able to cancel the incident.

Premise and Hazard Information

C The system must contain a file containing data stored by location. This data can include information on threats against public safety officials, hazardous substances stored, locations of invalids, etc.

C The hazard file must be automatically checked during incident entry.

C A permanent notification of the presence of hazard information must be recorded in the incident history.

C The actual text of the hazard record shall be stored in the incident history record only for specific types of hazards.

C Hazard file records must have a purge cycle, which prevents access after a preset date or time period.

C Hazard file records can be entered for permanent retention.

C Multiple hazard records can be entered for a single location.

C The dispatcher must be able to display all hazard data within a specified distance from a unit or incident.

Prior Incident Information

C All prior incident activity on file at an incident's location must automatically be displayed.

C Prior incident recording must not require operator action and shall not interfere with the normal functions of the operator.

X A warning must be displayed for recent prior incidents within a time span designated by a user configuration.

C Detailed prior incident information must be accessible by function key.

Entry of Non-Dispatch Calls

C The system must have the ability to record incidents where no dispatch occurs.

C Non-dispatch calls must be entered in the incident history file, and shall be accessible via all standard incident access functions.

C An incident entered in this fashion can be later reopened and dispatched normally with a date/time stamp.

Entry of Completed Calls

C The system shall allow for the entry of calls that have been previously handled but not yet entered into the system, due to conditions such as system unavailability.

C Completed calls of this type can be activated for the purpose of unit assignment.

Multiple Types of Service

C The call taker must be able to enter a single call for service, specifying multiple types of service.

C Certain incident types must automatically generate the appropriate multiple types of service responses.

C This process must not require separate actions for each type of service.

C Any supplementary information that any call taker adds to any incident entered in this fashion shall be automatically added to each related incident.

Dispatching Functions

Pending Incident Display

C A list of pending incidents must be available for continuous display to the controlling dispatcher.

C Incidents shall be listed according to priority and entry time.

C The dispatcher must be warned whenever a new or updated incident is added to the pending incident display.

C Any position can display all pending incidents, or only those for one or more specific dispatch positions.

A The system must provide an indication in this display, which indicates which incident, is currently being reviewed by the dispatcher.

A At any position display of pending incidents shall show which ones are currently being reviewed by the responsible dispatchers but shall not interfere in any way with the normal function of any workstation.

The system must display, at a minimum, the following information for each incident in the pending incident display:

C Incident number
C Incident type code
C Description of incident code
C Priority level
C Number of minutes waiting
C Incident location
C Dispatch control area
C Law Enforcement beat or fire station as applicable
C Hazard warning and complete hazard information
C Preassigned unit identifier

The system must support a visual warning, set by the system administrator, for incidents in the pending list or while being viewed by dispatcher or call taker when any of the following special conditions occur:

A Incident is being viewed by controlling dispatcher.
C Wait time has exceeded allowable maximum (by priority).
C Supplementary information has been added to incident.
C Incident cancellation has been requested.
C Incident location, type or priority has been changed.
C Preassigned unit is unavailable for assignment to incident.
A Pending incident timeout warning must be updateable by dispatcher.
A None of the visual warnings listed above shall interfere in any way with the normal function of the workstation.

Incident Control

C The dispatcher shall have the flexibility to process pending calls in any sequence.

A An incident may be worked by multiple positions.

C The dispatcher may select calls for dispatching by incident number or unit number.

X The dispatcher may select calls for dispatching by mouse reference.

C The system must automatically present calls for dispatch in priority sequence, sorted by time

C The dispatcher must be able to quickly request the display and unit recommendation for any specific call at any time.

C The dispatcher may request the display of a pending call by pointing to it with a mouse or pointing device.

C The dispatcher must be able to share the control of any pending incident with another dispatcher at anytime.

C Any dispatcher can dispatch units to another dispatcher's incident. **AT SUPV TERMINAL ONLY**

C An incident can be dispatched directly from the pending incident monitor without redisplay after initial review.

C A unit may be assigned to a pending incident by pointing to the unit and the incident with a mouse.

C The dispatcher must be able to place any call on "hold" with a unique visual indicator to show hold status, placing it back in the pending queue, so that the next call in sequence can be displayed.

Incident Review

The system must provide a mechanism whereby the dispatcher can review a pending incident prior to dispatch. This review must show critical incident information, including:

C Jurisdiction
C Incident number
C Incident type or nature code
C Description of incident type
C Initial incident location
C Current reported location
A Any prior reported location
C Name, address and telephone of reporting party
C Hazard information associated with incident location
A Summary of prior incidents at the same location
AWarning of recent vs. old prior call
C Warning that incident is in a different area of control
C Suspect name and vehicle information **ATL CAN BE ATTACHED**
C Law Enforcement beat, fire station, EMS post as applicable
C Recommended unit(s) for dispatch
C Incident narrative information
C All prior unit assignments and status changes
C Times of all previous status changes

C Automatic scrolling must be utilized in cases where the entire event cannot be completely displayed, showing the most recent information.

C Manual line-level scrolling must be supported in addition to paging of displayed incident.

C The displayed incident must notify viewing party of update information while the incident is displayed.

A Viewing party should have ability to update incident with new information with a single keystroke.

C A pending incident must be able to be displayed by command or by pointing device (e.g., mouse, and trackball).

Law Enforcement Unit Recommendation

Units must be recommended dynamically using, at a minimum, the following criteria:

C Jurisdiction
CIncident location
CIncident type
CIncident priority
CType of units required
CNumber of units required
C Current unit status
C Beat assignment
C Nearest adjacent beat

C Up to four Law Enforcement units shall be recommended but not required, in order of decreasing suitability, based upon the above criteria.

C ”Adjacent beat" shall be determined by incident location within the primary beat.

C The system must indicate the recommended number of units to respond according to the type of incident.

C The dispatcher must be able to override the recommended units at any time.

C Unit recommendation criteria must be user-definable by incident type and priority.

C Unit recommendation criteria must be modifiable on-line at any time.

C A unit's type must be able to be changed during its shift, with appropriate change to unit recommendation (e.g., from a one-person to a two-person unit).

C Unit recommendation plans must be able to be changed dynamically.

A Unit beat assignment must be able to be designated when a unit comes on-duty.

Fire Unit Recommendation

Units must be recommended dynamically using a fire "run card" using, at a minimum, the following criteria:

N/A Jurisdiction
N/A Incident location
N/A Incident type
N/A Current unit status
N/A Number of units required
N/A Type of units needed
N/A Fire station location

N/A Any number of units can be recommended at a time.

N/A Units shall be recommended according to current fire station assignment, considering current unit cover and move-up assignments (unlimited).

N/A In the event of greater alarms, unit recommendation must take into account units already assigned, providing the necessary equipment to satisfy the greater alarm requirements.

N/A Unit recommendation criteria must be modifiable on-line at any time.

N/A Standard move-ups must be displayed upon request.

N/A Multiple move-ups can be entered via a single command.

EMS Unit Recommendation

Units must be recommended dynamically using a EMS "run card" using, at a minimum, the following criteria:

N/A Jurisdiction
N/A Incident location
N/A Incident type
N/A Current unit status
N/A Number of units required
N/A Type of units needed
N/A EMS station location

N/A Any number of units can be recommended at a time.

N/A Units shall be recommended according to current EMS station assignment, considering current unit cover and move-up assignments (unlimited).

N/A Fire units that have EMS capacity will be utilized in accordance with their availability and EMS classification.

N/A Unit recommendation criteria must be modifiable on-line at any time.

Dispatch and Control of Units

C Recommended units must be dispatchable with a single keystroke.

C The dispatcher can alter recommended units.

C Recommended units can be selected by mouse reference.

C Units must be able to be assigned to a pending incident directly on the pending incident list, without requesting detailed incident display.

X Units cannot be assigned without initial detailed incident display and review.

C There must be no limit to the number of units, which can be assigned to single incident.

C Any number of incidents must be able to be preassigned to a single unit.

C A unit or units may be assigned via pointing device without keyboard entry.

Status history maintained for each unit must include:

C All status changes
C Current Unit location
C Date/time of all unit status changes, recorded to the nearest second with
A Alarms specified by default or by each dispatcher if desired.

C Timers can be set by type of call or by dispatcher discretion. Officer numbers for each unit assigned

C Officer names for each unit assigned

C Workstation identifier making each status change

C Operator identifier making each status change

C Operator name making each status change

C Each dispatcher can select units displayed.

Required Status Keeping Functions

C Unit status changes shall be entered as single transactions, specifying new status and one or more units.

A Unit status change may be entered by mouse or keystroke, selecting unit and desired status.

C Unit status changes must not require the display of an incident record.

C Comments can be added to any unit status change, and will be recorded with the incident's and unit's permanent record.

A Previous status change commands can be displayed for review and/or correction and reentry by function key request.

C The unit identifier can be entered prior to the status code.

X Status may be able to be entered by referencing the unit display and a status code via pointing device or keyboard.

C The system must support the following incident control and unit status command functions.

C Dispatch one or more units to an incident

C Assign backup units to an incident

C Replace one unit with one or more other units

C Preempt a unit to service a higher priority call

C Place one or more units onscene

C Place a unit available-on-scene (onscene but available for unit recommendation and assignment)

X Place a fire unit available-on-radio or pager

X Place a fire unit available-in-quarters

X Place an EMS unit available-on-radio or pager

X Place an EMS unit available-in-quarters

C Add information to an incident

C Add information to a unit's history record, whether available or assigned to an incident

C Enter pursuit information from several workstations concurrently

C Clear a unit back to service

C Change unit location while still on call

C New unit location may be validated against on-line geofiles

C Reset unit back to incident location without requiring reentry of original location

C Initiate a traffic stop or onview, resulting in an automatic license plate inquiry by the system

C Unit location at a traffic stop is validated against on-line geofiles

C Initiate a subject stop

C Indicate that the personnel are out of vehicle and must be contacted via hand-held radio or other means

C Request initial case number for an incident

C Request additional case numbers for a single incident

C Specify a unit timeout-warning interval

C Change the beat responsibility of a unit

C Place a unit on duty and available for dispatch

C Enter final disposition or incident type

A List all nearby hazards within a specified distance

Unit Definition and Control

C Any combination of up to 5 letters and numbers can be used as unit identifiers.

C Unit type, shift, patrol area or other similar information need not be encoded as part of the structure of the unit ID.

C An on-duty unit's identifier can be changed while keeping a continuous unit history record (does not require units to be logged off duty).

C An on-duty unit's recommendation rules can be changed without requiring unit log off.

Transfer of Unit and Incident Control

C System must have a command allowing designation of a new primary unit on an active call.

C The control of any on-duty unit can be passed from one dispatch position to another, regardless of unit status.

C Any incident can be transferred from one dispatch position to another, regardless of incident status.

C Any dispatcher must be able to "take over" the dispatching and control of any incident at any time from any workstation without interrupting the original dispatcher. **Procedural**

C The dispatcher must be able to assign another dispatcher's unit(s) to any incident. **Procedural**

C In the above case, current unit status information shall be displayed on both the original unit's dispatcher's and the requesting dispatcher's displays.

Out of District Display

C Any dispatcher must be able to display dynamic unit and incident status for any dispatch control area in addition to the areas controlled.

Available and Active Law Enforcement Unit Displays

A dynamic display shall be provided for all units that are available for dispatch, which shows:

C Jurisdiction
C Unit identifier
C Unit assigned but available for dispatch
A Special unit type or classification
A Officers out-of-vehicle (on portable radio)
A Unit scheduled on-duty prior to confirmation of status
X MDT equipment status

A dynamic display shall be provided for all units assigned to incidents, which shows:

C Unit identifier
C Current unit status
X MDT equipment status
C Time since last unit status change
C Incident number
C Incident type and priority
C Incident type description
C Unit beat
C Unit control area
C An indication if the unit is operating out of its normal area
C An indication if the unit was assigned as a backup unit

C A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

C A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented. This warning shall be differentiated from the warning in the previous item.

C Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

C Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active Fire Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

N/A Jurisdiction
N/A Unit identifier
N/A Unit status
N/A Unit station
N/A Unit MDT equipment
N/A Units are ordered by associated station.
N/A Units can be ordered by equipment type.

N/A The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

N/A Jurisdiction
N/A Incident number
N/A Incident type
N/A Current alarm level
N/A Incident working time
N/A Firebox number [or appropriate geographic data]
N/A Incident location

With each active incident, the status monitor must list assigned units, in sequence by alarm level, showing:

N/A Jurisdiction
N/A Unit identifier
N/A Unit status
N/A Time since assignment
N/A Time since last unit status change
N/A Any covering unit
N/A Unit location if different from incident
N/A Notes or comments associated with a unit

N/A Units shall be grouped by priority level at time of assignment.

N/A Unit status monitor displays must be useable by color-blind dispatch operators.

N/A A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

N/A A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

N/A Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

N/A Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active EMS Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

N/A Jurisdiction
N/A Unit identifier
N/A Unit type
N/A Unit status
N/A Unit station
N/A Unit MDT equipment
N/A Units are ordered by associated station.
N/A Units can be ordered by equipment type.

N/A The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

N/A Jurisdiction
N/A Incident number
N/A Incident type
N/A Incident working time
N/A Incident location

With each active incident, the status monitor must list assigned units, in sequence by priority level, showing:

N/A Jurisdiction
N/A Unit identifier
N/A Unit status
N/A Time since assignment
N/A Time since last unit status change
N/A Any covering unit
N/A Unit location if different from incident
N/A Notes or comments associated with a unit

N/A Units shall be grouped by priority level at time of assignment.

N/A Unit status monitor displays must be useable by color-blind dispatch operators.

N/A A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

N/A A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

N/A Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

N/A Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Incident Record Keeping Requirements

The system must keep date/time stamped records of all incidents passing through the dispatch process. These records shall contain:

C Jurisdiction
C Incident number
C Case number(s)
C Incident location
C Initial and final incident type
C Final disposition
C Time of initiation (time of phone call)
C Time of incident entry
C For each assigned unit, the time of dispatch and all status changes
C All data taken by the call taker
C All information subsequently added
C Name and ID number of personnel in each unit assigned
C Name and ID number of each workstation operator who enters any information or status concerning the incident.

C The system must allow the entry of an unlimited amount of supplementary data about an incident.

C A permanent audit trail must be maintained for all information recorded with an incident, whether or not that information is later modified or deleted.

Assignment of Case Numbers

C A sequence of "case" numbers must be kept independently from the number assigned to each incident and jurisdiction.

C Each agency can have multiple series of case numbers, case number format being determined for each agency by system administrator but case numbers can be automatically assigned by agency and incident type.

C Case numbers shall be assigned to an incident by dispatcher request.

C A single incident can have multiple case numbers.

Incident Record Access

Incident history information shall be displayed or printed in chronological order upon command, based on a search of the file. This search will not interfere in any way with the normal function of the workstation. It must be possible to search the file on any combination of the following criteria:

C Jurisdiction
C Incident number
C Primary case number
C Any secondary case number
C Date and time range
C Incident type
C Incident priority
C Reporting district or box number
C Law Enforcement beat/fire station/EMS district as applicable
C Dispatch control area
C Jurisdiction within an agency
A Initial incident location
C Final incident location
C Any intermediate incident location
C Type of location reported (premise, intersection, place, etc.)
C Primary unit assigned
C Final disposition
C Existence of any case number
C Call entry or dispatch workstation identifier
C Call entry or dispatch operator identifier
C Any telephone number recorded with incident
C Any name recorded with incident
C Any personal distinguishing identifier entered with the incident
C Any vehicle license number recorded with incident
CAny vehicle color or descriptive code recorded with incident

Any operator-selected time range between:

C Incident initiation
C Incident entry
C Initial dispatch
C First unit arrival
C Incident closing

C Incident history inquiries must access pending, active and closed incidents using identical facilities for selection and display.

C All prior calls on file at the specified location can be requested for immediate display.

A All operators who had entered or updated an incident record shall be listed as part of the standard incident display by both operator name and ID.

C All officers who respond to an incident shall be listed as part of the standard incident display.

Unit Record Keeping Requirements

C Jurisdiction

C Officer name and badge number at time of incident.

C The system must maintain all activity by unit identifier, agency, officer name, and badge number at the time of the incident.

C The system shall be able to display a complete sequence of unit activity for any selected shift or time period, regardless of whether such activity was associated with an incident.

C The unit identification can be changed during a unit's shift without affecting the unit's history record.

C The unit's history record must be accessible by the current or any previous unit identification used during the shift.

C The unit's history record must be accessible by the current or any previous officer number assigned.

Closed Incidents

X No incident shall be closed until a call-taker, dispatcher, or supervisor has issued a command to do so.

C Any closed incident can be reopened for further activity, without assigning a new incident number.

Supervisory Status Display

C Dynamic status information from one or more dispatch workstations can be displayed at a supervisory workstation position upon request without affecting the status monitor of that workstation or of any other workstation.

C Supervisory status displays must show the same warnings and indications, such as a unit overdue, incident updated, and so forth, as are displayed on the responsible dispatch workstation.

Street Closure Information

X The system must have the ability to display street closure information upon operator request.

Fire Hydrant Information

N/A The system shall display a list of fire hydrants near any specified incident or unit upon request; the list shall be in order by distance from the specified incident or unit.

N/A The fire hydrant list must show the location, current status, flow and other relevant information.

Mobile Data Terminal (MDT) Interface Functions

The system must allow the following types of transactions to and from Mobile Data Terminals:

C MDT logon with unit number and ID numbers of occupants.

C Auto unit entry into CAD system as in service but not yet available until unit dispatcher places unit in available status.

C MDT logoff and unit removal from CAD system only if a unit is in "available" status.

C Send dispatch orders to MDT.

Accept MDT responses for:

C Acknowledge dispatch order receipt
C En route to dispatch
C At scene
M Available at scene (with comment)
C In service
C Busy (with comment)
C Out of service (with comment)
C Change status of the unit to any valid CAD status

C Accept MDT request for report number on current dispatch and transmit number to MDT.

C Allow MDT to initiate onview and traffic stop. Information on a vehicle to submit auto queries to ACIC/NCIC system.

C Allow MDT to attach responses from ACIC/NCIC system to incident displayed.

C Allow MDT to run full ACIC/NCIC queries through formatted screens.

C Allow MDT to send messages to dispatcher or other MDT's.

C Support MDT emergency button to notify the dispatcher of a peril via a single keystroke.

Notify MDT of changes in dispatch including:

C Change in dispatch data, status, or comments
A Cancel from dispatch

C Send premise data, HazMat information, hydrant locations, and officer safety alerts to MDT along with dispatch orders, based on user-defined criteria and type of unit.

C Allow MDT to request static status of individual or group of units via command. supervisory function.

C Differentiate a unit with MDT from non-MDT unit on dispatcher status monitor and working screen.

C Allow MDT to add comment to working CAD incident.

C Allow MDT to enter disposition for current dispatch.

C Allow commands to resend MDT dispatch to terminal without updating time stamps in the event the unit did not get clean data the first time.

C Have system automatically send MDT dispatch orders through standard dispatch command without requiring a dispatcher to know if a unit has a MDT or use different command to dispatch to it.

C Allow MDT to make CAD history inquiries such as unit history, dispatch history, address history, and any other standard online query to CAD system such as premise data, notes file, etc.

C System must automatically format data sent to MDT to fit the screen on MDT.

C System must allow a CAD command, which will resync MDT availability (Logon status) after prolonged down time. Such command should poll the MDT controller to find out which units are logged in.

C System must provide MDT security whereby user and/or MDT terminal ID may restrict specific commands.

C System must disallow MDT commands from any MDT, which is not correctly logged into dispatch system.

General System Functional Requirements

This sub-section addresses certain general functional requirements, which are not conveniently grouped as Call Taking or Dispatching functions above.

Multiple Agencies

For both present requirements and future flexibility, the system shall support multiple jurisdictions and multiple agencies. This means that the system must accommodate at least the following facilities:

A Routing of calls to appropriate dispatcher according to jurisdiction and agency.
A Duplicate street names, distinguished by city name and/or postdirection and/or jurisdiction.
A Independent incident numbering systems by jurisdiction and agency
A Summary and management reporting by jurisdiction and agency

Security

C System shall provide method for dispatcher to change assignment (such as shift change, etc) without logging out.

C Operator sign-on shall require the entry of both an operator identification code and a private password.

C The password must not appear when entered.

C A record of invalid password attempts shall be recorded after a preset number of allowable retries.

C Transaction security can be limited by workstation type or location, in addition to operator password. **Procedurally, not done.**

X The acceptance of user sign-on must result in the screen being displayed with the user-selected colors and layout.

On-Line Help

C The system must support on-line "help" for every field in every formatted input transaction. This must include local incident entry, update and database transactions, and remote system interface transactions.

C Help" information must be available for dispatcher commands.

C The request for "help" information shall be entered by function key without affecting the contents of the field for which the information is requested.

C The "help" information must be maintainable on-line.

System Notepad

C A system-wide notepad shall be provided which all operators can access. The function of this notepad is to provide quick access to information such as telephone numbers and addresses. The format should include a forty- (40) character description, unlimited text, and a date/time update stamp for initial entry and record changes.

Alarm Database

C The system shall include an alarm database, maintainable by the dispatch staff, providing easy entry/access of alarm activations.

User Messaging facility

C The system shall include the ability for an operator to send a message to another operator. Mobile Data Terminal operators shall also have this functionality. Logging of MDT messages shall be optional system wide.

Online medical expert system

N/A The system shall provide online access to an EMD system, which prompts the operator with questions in a "tree structure" format to assist the operator in providing emergency medical information to callers.

Screen Printing

C The operator must be able to print the contents of the workstation screen or status monitor at any time by function key request or command line.

C An entire incident, which includes all appropriate screens, can be printed by a single command regardless of the screen currently displayed.

C Whenever a complete message is printed, it shall be reformatted to cause page numbering, page breaks, and column headers at the beginning of each printed page (typically 60 lines).

Message Control

Messages displayed in response to local or remote inquiries shall be displayed to the operator using a method to allow rapid and understandable review. These functions shall include:

C Page forward to next page
C Page backward to previous page Scroll upwards or downwards by single line
C Scroll upwards or downwards via scroll bars Go directly to first page of message
C Go directly to last page of message
C At least 12 lines of message text can be displayed at a single time.
C Outbound messages must contain requesting unit's ID and display in incoming return in order of time received.
X The number of displayed lines must be able to be adjusted by the individual workstation operator. Any message page displayed can be permanently attached to an incident or unit history record.
C Messages must be displayed in sequential order of receipt.

Ease of Use

A Menus shall be supported as a training aid but shall not be required for system operation.

A Each workstation position must be capable of displaying at least 24 lines of information at one time. "Windows" shall be available for special functions, and can be scrolled up/down and left/right as needed.

C In the event of concurrent update or display on the dispatcher's input screen, no data or keystrokes being entered by the operator must ever be lost or skipped.

C At any time, the dispatcher must be able to redisplay any recent command entered on the workstation, and then alter and re-enter the command if needed.

C Data entry into input forms at the dispatch workstation can be interrupted with a single keystroke or mouse action to allow entry of unit status change or information command (command line).

C After a command is entered, processing can resume at the original input form with another single keystroke or mouse action, with the input cursor at the original location in the data form.

Date and Time Display

C Each position's display screen should show the current date and time at all times.

Data Base Access

C Access to ACIC/NCIC system may utilize fill-in-the-blanks input forms and/or command line query.

C Certain types of officer activity will generate a query to offline databases.

X The format of input forms must be maintainable on-line without requiring programming experience.

X Standard message reformatting logic must be maintainable on-line without requiring programming experience.

X Context-sensitive "help" information may be available for each field in these input forms.

X Help" information must be available at a high level, which provides general information about the transaction.

X “Help" information must be available by function key request.

X Help" requests must not alter the input field.

X Help" requests must list all valid data for edited fields.

X The operator must be able to select the desired field data from the information displayed, with the field automatically updated.

X "Help" information must be maintainable on-line.

Provisions of NFPA 1221 and CALEA

Annex D Computer-Aided Dispatching (CAD) Systems

D.1 The CAD system should provide automated decision-support aids to telecommunicators by organizing and managing the real-time processing of informational items belonging to the following classes:

1. Alarms, including other requests for service
2. Incidents and events
3. Resources utilized by the communications center
4. Other classes, as directed by the authority having jurisdiction

D.1.1 Each item should have the following characteristics:

1. Unique identifier
2. Status
3. Location
4. Description
5. Relationship to other items
6. Other characteristics, as directed by the authority having jurisdiction

D.1.1.1 Alarm times should, as a minimum, also include the following characteristics:

1. Source
2. Priority
3. Type

D.1.1.2 Incident items should, as a minimum, also include the following characteristics:

1. Incident management structure
2. Evidentiary information

D.1.1.3 Resource items should, as a minimum, also include the following characteristics:

1. Capabilities
2. Authorizations
3. Assignments

4. Activities

D.2 The CAD system should archive items in a records management system for later retrieval, analysis, and reporting.

D.3 The CAD system should record a history (audit trail) of the following actions taken with the items:

1. Creation
2. Change, including modification, deletion, or supplementation
3. Disposition, including close-out, archiving, and transfer

D.3.1 Each entry in the history should include the following:

1. Coordinated universal time (UTC) of action
2. Identification of the individual performing the action
3. Effects of action on the characteristics of the items

D.4 The automated exchange of digital information related to alarm objects between the communications center and external systems should be accomplished in accordance with standards published by the National Emergency Numbering Association (NENA) and the Association of Law Enforcement Communications Officials, International (APCO).

The automated exchange of digital information between communications centers should be accomplished in accordance with standards published by APCO.

The automated exchange of information between communications center and transportation information systems should be accomplished in accordance with standards registered with the Intelligent Transportation Systems (ITS) Data Registry.

D.5 Reference Material

D.5.1 APCO Project 36 addresses standard format and content requirements that apply to information exchanged between CAD systems.

APCO International, Ind., World Headquarters, 351 N. Williamson Blvd., Daytona Beach, FL 32114-1112; (904) 322-2500, (888) 272-6911; Fax (904) 322-2501.

D.5.2 NENA Standard 02-010 addresses standard format and content requirements that apply to information exchanged with 9-1-1 databases.

National Emergency Number Association, 4350 North Fairfax Drive, Suite 750, Arlington, VA 22203-1695; (800) 332-3911; (614) 741-2080; Fax (614) 933-0911.

D.5.3 Intelligent Transportation Systems Data Registry includes standards with standard format and content requirements that apply to information exchanged with transportation information systems.

Institute of Electrical and Electronics Engineers, ITS Data Registrar, P.O. Box 1331, Piscataway, NJ 08855-1331; (732) 981-0060; Fax (732) 981-1721.

4. Documentation Provided

- City of Tucson System Layout – Microwave Communications Division
- Police Video Link
- Radio Station frequencies
- Frequency chart
- Law enforcement frequency bands
- Tucson police department organizational chart
- Tucson Microwave system
- Microwave network
- Police transmitter locations
- Type of helicopters radio system
- Tucson police dept. communications division outside agency frequency users
- Tucson Dept. of Information Technology I-Net Fiber route
- Logistics Division Fleet Composition Analysis
- Communication Site list
- Key measures of call performance
- Block diagram – Data paths fire station alerting
- Tucson Police Dept general orders
- 2004 – 2024 projections
- Radio wish list
- 2000 Tucson demographics.pdf
- Radio wish list from Evidence
- COT post surveys sys layout.pdf
- City's Executive Summary of 10-year plan
- Benchmarks.ppt
- Information Technology/Tucson 922-Fire Meds 2005 Stats Hourly call counts

TABLE 3.2.2A
Tucson Police Department

DESIGNATOR NO.	ATTRIBUTE	RANK (0 - 5)	COMMENTS
Sufficient Capacity			
1	Dispatch Center Size	5.0	
2	Dispatch Center Staff	5.0	
3	Technology	5.0	
Environment			
4	Light	5.0	
5	Temperature and Air Control	5.0	
6	Cleanliness	5.0	
7	Furniture	5.0	
8	Technical	5.0	
9	External Facilities	2.0	
10	Internal Facilities	5.0	
Effectiveness			
11	Radio System	5.0	
12	Console	5.0	
13	Computer Aided Dispatch (CAD)	5.0	
14	Telephone	5.0	
15	Interoperability with Other Agencies	5.0	
Technology			
16	Reliability	5.0	
17	Maintenance	5.0	
18	Back-Up	5.0	

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.3 Pima County

3.3.1 Pima County Sheriff's Department

A. Current Environment

1. Operational

The Communications Section is part of the Information Technology Division of the Administrative Bureau. Captain Paul Wilson is the Division Commander. Lt. Mike Sacco is the commander of the Communications Section. Pat Joy is the manager of the Communications Unit.

The center has an authorized staff of fifty-one full-time personnel (forty-four call takers/dispatchers, four shift supervisors, 1 training coordinator, and two management staff). They have an actual staff of thirty-eight. There were thirteen telecommunicator vacancies at the end of February 2006. There are also two part-time telecommunicators. They are not represented by a collective bargaining agreement.

2. Functional

The Sheriff's dispatch center in Tucson answers wireline and wireless calls for that portion of unincorporated Pima County east of the Tohono O'odham Indian Nation. They also answer for the Madera Canyon area in Santa Cruz County because the only access to that area is through Pima County. The dispatch center does answer incoming 911 calls for a small portion of the Tohono O'odham reservation that uses QWEST telephone service. The main portion of the reservation uses its own telephone service provider. The Center answers calls for County services after normal business hours – Animal Control, Wastewater, Department of Transportation, etc.

The Sheriff's Department Operations Bureau currently has five districts. Four of those districts are in eastern Pima County with the fifth being the AJO District in the far western part of the County. Three of the four districts in eastern Pima County have substations or satellite offices. There will be a sixth district in Eastern Pima County added soon.

Activity	2003	2004	2005
Wireline 911 Calls Received	120208	125431	121593
Wireless 911 Calls Received	101648	107410	119227
Total 911 Calls Received	221856	232841	240820
Wireless Call %	45.8%	46.1%	49.5%
Average 911 Answer Time	9 seconds	9 seconds	9 seconds
Other Emergency Calls Received	104736	118503	121030
Administrative/Non-Emergency Calls	128820	108606	86914
Total Incoming Calls	464412	459950	448764
Police Calls Dispatched	139618	142526	146082
Police Officer Initiated	24547	22194	19394
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers	76920	77955	80729
CJIS (SCIC/NCIC) Inquiries	122937/93723	122853/108486	177128/107632
CJIS File Maintenance (Entries, Mods, Cancels, etc	3656	5145	5277
Administrative Messages	2481	2715	2252
Total CJIS			

3. Technical

The PCSD Tucson Metro dispatch currently has eight call-taker positions, five dispatch positions and one supervisor position. The dispatch center also answers the non-emergency number for the Sheriff's Department but does not function as the switchboard operator. In addition, the dispatch center monitors internal departmental alarms on areas such as the property and evidence areas.

The PCSD uses the Spillman Technologies Summit CAD system. The Oro Valley Police Department, Pima College, Tucson Airport Authority, University of Arizona, the Willcox Department of Public Safety as well as the Sheriff's Ajo District also use the Sheriff's server. Willcox is in Cochise County. Users from the agencies are only able to view data and not modify another agency's data. The Sheriff's Office has a full-time staff member who functions as the CAD administrator. Pima County originally installed the Spillman system in 1989 and contracts with Spillman for maintenance and upgrades.

The PCSD Tucson Metro Dispatch uses Plant Vesta 911 Customer Premises Equipment. The system was upgraded in January 2006. QWEST is the 911 system provider. They also use Plant's Orion Map Star mapping for displaying wireless caller location. The map is not integrated with the CAD system. The center has deployed Wireless 911 Phase II with all carriers in the metro area.

The dispatch center is equipped with Orbacom computer based consoles. There are three dispatch talk groups with a dispatcher assigned to each. Each dispatch position is equipped with four monitors (Radio, 911, map, CAD working screen,). Each call-taker position is equipped with three monitors (911, Map, CAD). The supervisor position has six monitors (Radio, 911, Map, CAD, Radio System Manager, and PIMA SO Network.)

The call taker positions use a keyboard arbitrator to switch between the 911 and CAD systems.

Radio system coverage is an issue in a number of areas of the county. These areas include portions of the county that are experiencing rapid growth.

Emergency button activation issues are a significant concern. The radio system design switches the user of the radio whose emergency button is activated to a different, special talk group. The dispatch center has one position whose duty is to react to emergency button activations. The dispatcher working the regular talk group for that officer receives an indication that the emergency button has been activated, but the dispatcher handling the special emergency activations has no indication of what or where the unit is. In addition, other users in the regular talk group have no indication that an emergency button has been activated.

There are continuing issues with the Orbacom consoles. The consoles were provided by EF Johnson as part of the conversion to the LTR in 1999. As a result, the County has not had direct access to Orbacom support. Patching talk groups requires a patch break, for each transmission, for the console to transmit. The consoles are not encrypted, and they are complicated to operate.

Interoperability is an issue. For the most part, communications with other agencies is done by hot lines (dispatcher to dispatcher).

There are a number of issues as the result of inadequate space for the dispatch center. The break room contains small lockers, a small refrigerator and a small couch. There are environmental issues as well such as lighting and climate control problems. There is virtually no storage area. There is also insufficient parking and parking lot security is an issue. The area is difficult to keep clean.

B. Positive Attributes of Current Environment

1. Operational

No discussion of the Pima County Sheriff's Dispatch Center can not begin without focusing on the dedication and professionalism of the staff. As noted elsewhere in this report, Pima County is experiencing sustained and rapid grow. Since 1990, the population of the portion of the County handled by the center has increased by 38%. That is an average growth of 2.7% per year. Because of the challenges of attracting and retaining qualified telecommunicators, the center is operating at 73% of authorized staffing levels. The result is the workload per Full-time Equivalent employee is significantly higher than is found in typical communications centers. The fact that the staff is able to handle the high call volume while maintaining an attitude focused on customer service is a tribute to their dedication and professionalism.

2. Functional

In 2005, the center received 6,880 incoming 9-1-1 calls per full-time employee. The National Emergency Number Association conducted a Public Safety Answering Point (PSAP) staffing study in 2003. In that study, the average among all of the large PSAPs (serving more than 100,000 population) surveyed was 3,202.

In 2005, the PCSO Tucson Dispatch answered 249,820 9-1-1- calls with an average answer time of nine seconds. The center received another 121,030 incoming emergency calls by transfers and other means and handled 86, 914 non-emergency or administrative telephone calls. They dispatched 146,082 law enforcement calls for service as well.

3. Technical

The 9-1-1 Customer Premises Equipment (CPE) in use in the center represents the current state of the art in 9-1-1 CPE. The addition of the Plant ORION mapping system allows the PCSD Tucson Center to be among the early participants in providing Wireless Enhanced 9-1-1 service. With Phase II service, the caller's actual location can be displayed assuming the caller's phone and the provider's network are also capable of providing the service. Support from QWEST, the 9-1-1 service provider, is good.

The Spillman CAD system, which is part of a regional system, allows information sharing between agencies. The department has a staff member devoted full-time to supporting the system.

C. Desired Attributes of Current and Future Environment

1. Operational

There is a definite need for a new facility that is adequately sized to handle not only the current workload, but also the anticipated workload as the County continues to grow at a fast rate. In addition to the dispatch center, there is a need for adequate space for the support areas such as offices, break rooms, locker rooms and so forth.

Training positions with actual equipment identical to what is in use on the dispatch floor is highly desirable. In addition, adequate space for a trainee and trainer to work side by side at a live position is also needed.

2. Functional

There is a need for ergonomically improved workstations and chairs that can withstand the continuous use environment of a dispatch center. Better noise control in the center is needed.

3. Technical

Better consoles that are easier to use and overcome the limitations of the current consoles are essential. Improved radio coverage is needed.

A desired feature is a channel marker for use when there is priority traffic on a talk group that would only be audible when a unit presses the push-to-talk and not at other times. This marker cannot inhibit transmit or receive.

Effective talk group patching is needed. In a previous radio system, the patching of talk groups was relatively simple and effective. As a result, talk group patching was used on a regular basis. In the current system, a patch can be easily made but each time the dispatcher transmits, a time-consuming patch-break process must first be accomplished. As a result, talk group patching is never used.

The consoles must be encrypted if there are radios on the system which are encrypted. This becomes a significant issue should an encrypted radio, operating in the encrypted mode, transmits an emergency button activation. Unless the radio switches over to transmit in a clear mode, the dispatcher, via a non-encryption capable console, will be unable to understand the nature and location of the emergency.

Emergency calls are a problem currently for a variety of reasons:

- The emergency button activation takes the user from their selected talk group to a pre-defined talk group. Other members on the selected talk group do not hear or know of the emergency button activation unless/until notified by the dispatcher. (It is preferred to have the option of keeping the unit on their selected talk group OR routing to a pre-determined talk group, defined by talk group, upon emergency button activation.)
- The user who presses the emergency button currently cannot hear back-up/rescue units. Rather, that unit is able to only hear the dispatcher.
- If multiple emergency button activations are working simultaneously, the potential to lose communications with one or more of the units exists under the current configuration. In order to toggle between emergency button activation units, the dispatcher must select the unit via the talk group (Emergency) queue. Each transmission creates another entry on the queue. Too many transmissions by the console or even back-up/rescue units can push the emergency button activation unit(s) off the queue, thereby eliminating the console's ability to select that unit to communicate with or even to release from the emergency call.

The current system requires the switches to need a re-boot on a weekly basis. Experience has shown that re-boots on a less frequent basis substantially degrade system performance. The system should have improved capabilities, presumably associated with computer memory resources.

The existing recorder, a NICE WordNet, has a tendancy to add separate phone calls into a single recording block. Frequently, a call taker on a less serious 911 call will place one caller on hold to take an incoming 911 call of undetermined seriousness.

Under those circumstances, the recorder will regularly group both calls as a single recording. As a result requests for recordings may include unrelated telephone calls. Additionally, the existing recorder does not allow redaction of those unwanted recordings, nor will it allow the redaction of sensitive information (medical information, phone numbers, social security number) from within the recording.

Currently, updating talk groups on the Orbacom console switch is cumbersome. Talk group modules cannot be removed or updated individually. The only way to replace information already existing in a talk group is to do so with all the talk groups at once (unknown how that would effect operations). Fortunately there are currently sufficient additional talk group modules to create new replacement modules and then turn off existing talk group modules. There should be a way to clear and overwrite an existing talk group module, along with the associated queue, which may be all the more important on a regional communications system.

There are features the Sheriff's Department would like to ensure are retained / obtained in future configurations. Those features include:

- The ability to make a call to all radios in a group ("Sheriff All Call" goes to all PCSD radios simultaneously and is listed as Receive Priorty 1 in the EFJ system).
- Distinct alert tones; a single tone capable of repetitive soundings along with a warble tone
- Ability to monitor system performance / alarms within the Communications Center
- Ability to create and manage aliases
    - One program
    - Flexible enough to prevent duplicate entries but capable of allowing user-specified duplicate entries
    - Exportable in a common format such as Excel
    - Printable

- Statistical data reference system performance; easy to use yet comprehensive
- Wireless headsets with sufficient spare batteries

4. Attributes Matrix

Please refer to TABLE 3.3.1A, a summary of system attributes that may be emphasized in a PCWIN regional communications system.

D. Supporting Information

1. Interview Records

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	Pima County Dispatch
File Name:	022806CountyDispatch Final.doc
Date of Interview:	February 28, 2006
Location of Interview:	PCSD Administration Building
Persons Interviewed:	Dan Cancio, Communications Dispatcher Cecilia Ochoa, Communications Dispatcher Richard Komorowski, Communications Dispatcher Rhonda Lesnewski, Communications Dispatcher Tony Portrey, Communications Supervisor Charles Balser, Communications Supervisor Pat Joy, Communications Manager Don Anderson, Communications Training Coordinator Johanne Rankin, Communications Supervisor Katie Callan, Communications Supervisor Mike Sacco, Lieutenant Sheriff's Department Paul Wilson, Captain Sheriff's Department
CTA Interviewers:	David Anderson, CTA Senior Systems Engineer Gary Mountcastle, CTA Senior Communications Specialist

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The County's dispatch center is located on the third floor of Pima County Sheriff's Department Administration Building.

Present Situation

1. Six dispatch positions are functionally set up as follows. Each position is static in its console and CAD setup and does not change from shift to shift or day to day.

   - North Patrol Sheriff Dispatch
   - East Patrol Sheriff Dispatch
   - South Patrol Sheriff Dispatch
   - "ED" position: Receives radio emergency button activations, Sheriff Office call taker
   - Special Operations
   - Supervisor Position

2. The consoles and console switch are provided by Orbacom through E. F. Johnson. Console support comes through EFJ rather than directly from Orbacom. The County reports satisfactory support but feels that with this third party arrangement, the information it receives is somewhat limited.

3. Dispatch screens were purchased with touch screen but the feature went unused, and replacement screens do not support the feature.

4. Each position is equipped with backup/monitor radios. A Summit mobile is selected to Tucson Mtn site and two portables are selected on other sites. If the system stops wide area trunking each transmit site must be monitored separately on a different radio. The unselect speaker is often used to monitor officer car-to-car channels, and traffic originating on fill in sites in Summerhaven and on South SR83. These are back-to-back conventional/trunked radios. Communications are received on a conventional channel and are retransmitted back to dispatch on a secondary trunked talk group.

5. Beside Sheriff's traffic, dispatch monitors the National Calling Channel, animal care, waste water, County DOT, County 1, and the Gateway channel.

6. The Orbacom consoles are not equipped with encryption, but one position is outfitted with a Viking encrypted mobile.

Present Problems

1. A significant amount of extraneous traffic is monitored (without IDs) on the unselect speaker. It becomes a guessing game with a number of call-backs to determine who is calling.

2. Console patch is very cumbersome to set up and operate. Operation can only be done using mouse controls rather than the usual keyboard controls. Patch setups cannot be stored and must be created for each use. Patch is system resource intensive requiring a physical channel for each group involved in the patch. System access times, for both patch and simulselect are both longer than for regular group calling. Because of the awkward operation, slow performance and complex hard-to-remember setup, patch and simulselect are rarely used.

3. There are several problems with how the emergency function operates:
   - Instead of declaration on the officers selected talkgroup, the emergency is declared on a designated emergency talk group. Other officer's radios do indicate the emergency situation.
   - Dispatch must make special efforts to monitor the "emergency group". Requires a dedicated extra console position (the ED position).
   - The radio emergency button is too easy to accidentally activate. This result is about 3 false emergencies per day.
   - Dispatch must clear the emergency before the declaring officer can return to his talkgroup – a serious officer safety problem.
   - Real emergencies are communicated using system all-call. Like patch, all-call can only be operated with a mouse (not keyboard or footswitch).
   - For safety reasons, only experienced operators handle emergencies on the ED position. Care must be taken not to transmit on the wrong talk group.

4. Radio automatic tower site selection. Radio scan must be ON for radios to automatically switch to a tower with adequate signal. Knowing how to properly select talkgroup and tower site requires significant radio training and experience. User radio operation now requires a 4-hour training class.

5. Because of operational problems, the system feature "system busy queuing" is turned off.

6. Under certain conditions, it is possible even with a trunked radio system, to have the effect of people talking over one another.

7. Routinely expect chopped front end audio when receiving from State Rt 83 area.

Future Requirements

1. Patch and simulselect operational and speed improvements.

2. All-call operational and speed improvements.

3. Improved voice quality.

4. Easier talkgroup and tower site selection for field radio users.

5. Desire a means to quickly and conveniently assign recent radio callers (from the call history list) to the next incident on the CAD list.

6. Portable radios that display caller ID.

The draft of this record was sent to Captain Paul Wilson on April 3, 2006.

Corrected draft was returned to CTA Communications on April 11, 2006.

Interviewee Name & Address:
Captain Paul Wilson, PCSO
Sheriff
Pima County Sheriff's Department
1750 E. Benson Highway
Tucson, AZ 85714

Reviewed and corrected 04/06/06 Captain Paul Wilson

M:\FILES\20099 Pima County, AZ\20099A - Business Architecture Planning\interview\Final\022806CountyDispatchFINAL.doc

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency: -Pima County Sheriff's Dispatch

File Name: - PIMA CO SO Dispatch Interview Record Final.doc

Date of Interview: - February 23, 2006

Location of Interview: - Pima County Sheriff's Administrative Headquarters

Persons Interviewed: - Capt Paul Wilson, Division Commander
Lt. Mike Sacco, Communications Section Commander
Pat Joy, Communications Manager
Donald Anderson, Supervisor
Charles Balser, Supervisor
Tony Portrey, Supervisor
Johanna Rankin, Supervisor
Sandra Hawkins, Dispatcher
Beatrice Brito, Dispatcher
Jennifer Jewell, Dispatcher
Luis Estrada, Call Taker
Barbara Ward, Call Taker

CTA Interviewers: - Mike Dye, Nate McClure

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Communications Section is part of the Information Technology Division of the Administrative Bureau. Captain Paul Wilson is the Division Commander. Lt. Mike Sacco is the commander of the Communications Section. Pat Joy is the manager of the Communications Unit.

2. In addition to the dispatch center in Tucson, the AJO District has its own stand-alone dispatch center for the far western portions of the county. That center is covered in a separate interview.

3. The Sheriff's dispatch center in Tucson answers wireline and wireless calls for that portion of unincorporated Pima County east of the Tohono O'odham Indian Nation. They also answer for the Madera Canyon area in Santa Cruz County because the only access to that area is through Pima County. The dispatch center does answer incoming 911 calls for a small portion of the Tohono O'odham reservation that uses QWEST telephone service. The main portion of the reservation uses its own telephone service provider. The Center answers calls for County services after normal business hours – Animal Control, Wastewater, Department of Transportation, etc.

4. The Sheriff's Department Operations Bureau currently has five districts. Four of those districts are in eastern Pima County with the fifth being the AJO District in the far western part of the County. Three of the four districts in eastern Pima County have substations or satellite offices. There will be a sixth district in Eastern Pima County added soon.

Present Situation

1. The PCSO Tucson Metro dispatch currently has eight call-taker positions, five dispatch positions and one supervisor position. The dispatch center also answers the non-emergency number for the Sheriff's Department but does not function as the switchboard operator. In addition, the dispatch center monitors internal departmental alarms on areas such as the property and evidence areas.

2. The PCSO uses the Spillman Technologies Summit CAD system. The Oro Valley Police Department, Pima College, Tucson Airport Authority, University of Arizona, the Willcox Department of Public Safety as well as the Sheriff's Ajo District also use the Sheriff's server. Willcox is in Cochise County. Users from agencies are only able to view data and not modify another agency's data. The Sheriff's Office has a full-time staff member who functions as the CAD administrator. Pima County originally installed the Spillman system in 1989 and contracts with Spillman for maintenance and upgrades.

3. The PCSO Tucson Metro Dispatch uses Plant Vesta 911 Customer Premises Equipment. The system was upgraded in January 2006. QWEST is the 911 system provider. They also use Plant's Orion Map Star mapping for displaying wireless caller location. The map is not integrated with the CAD system. The center has deployed Wireless 911 Phase II with all carriers in the metro area.

4. The dispatch center is equipped with Orbacom computer based consoles. There are three dispatch talk groups with a dispatcher assigned to each. Each dispatch position is equipped with four monitors (Radio, 911, map, CAD working screen,). Each call-taker position is equipped with three monitors (911, Map, CAD). The supervisor position has six monitors (Radio, 911, Map, CAD, Radio System Manager, and PIMA SO Network.) The call taker positions use a keyboard arbitrator to switch between the 911 and CAD systems.

5. There are three different job classifications used to staff the center: Sheriff 9-1-1 Call Taker; Sheriff 9-1-1 Dispatcher, and Supervisor. The personnel work eight hour shifts with fixed days off. Shifts are selected on the basis of seniority three times a year, coinciding with the school semesters. Advancement from the Sheriff 9-1-1 Call Taker to the Sheriff 9-1-1 Dispatcher is based on the candidate meeting the minimum qualifications and experience as well as a competitive promotional process. The center has an authorized staff of fifty-one full-time personnel (forty-four call takers/dispatchers, four shift supervisors, 1 training coordinator, and two management staff). They have an actual staff of thirty-eight. There were thirteen telecommunicator vacancies at the end of February 2006. There are also two part-time telecommunicators. They are not represented by a collective bargaining agreement. Employee turnover is an issue.

Present Problems

1. Radio system coverage is an issue in a number of areas of the county. These areas include portions of the county that are experiencing rapid growth.

2. Emergency button activation issues are a significant concern. The radio system design switches the user of the radio whose emergency button is activated to a different, special talk group. The dispatch center has one position whose duty is to monitor that special talk group. The dispatcher working the regular talk group for that officer receives an indication that the emergency button has been activated, but the dispatcher handling the special emergency talk group has no indication of what or where the unit is. In addition, other users in the regular talk group have no indication that an emergency button has been activated.

3. There are continuing issues with the Orbacom consoles. The consoles were provided by EF Johnson as part of the conversion to the LTR in 1999. As a result, the County has not had direct access to Orbacom support. Patching talk groups requires a patch break for the console to transmit. The consoles are not encrypted, and they are complicated to operate.

4. There are a number of issues as the result of inadequate space for the dispatch center. The break room contains small lockers, a small refrigerator and a small couch. There are environmental issues as well such as lighting and climate control problems. There is virtually no storage area. There is also insufficient parking and parking lot security is an issue. The area is difficult to keep clean.

5, Interoperability is an issue. For the most part, communications with other agencies is done by hot lines (dispatcher to dispatcher).

Future Requirements

1. Capt Wilson provided a list of considerations for a new center. It is attached to this interview record.

2. The dispatch staff presented a list of "wants" for the new center. That list is also attached.

Dispatch Staff "Wants" List for new communications center

1. Central vacuum system
2. Lighting controls for each individual position, and located at that specific position.
3. Individual heaters/fans for each position.
4. Larger, full length, personal lockers
5. Full kitchen
6. More space between individual positions.
7. Larger individual mailboxes.
8. Vending machines located near the center.
9. Intercom or instant messaging system to each individual position for in-center position-to-position calls.
10. Physical fitness/workout room w/ changing rooms and showers.
11. Exterior, partially covered, patio area.
12. Secure covered parking area.
13. Higher ceilings in the Comm. Center.
14. Windows and insulated sky lights for natural light.
15. Break area w/ comfortable seating and television.
16. Classrooms designed and set up specifically for the training of Communication Center employees.
17. Laser printer at each radio position.
18. Choice of corded or cordless headsets at each position.

19. Computerized versions of Cole's Directories available at each position.
20. Air cleaning/filtration system
21. Sound dampening panels on ceilings and walls
22. Radio position dedicated solely to training/monitoring trainees
23. Phone position dedicated solely to training/monitoring trainees
24. Radio Dispatch positions—dual displays of CAD functions versus the single display system we currently have.
25. Depending on the number of agencies using the new facility, a cafeteria service for at least day and swing shift (hours of operations 10:00 to 19:00), and/or food vending machines with more than just candy and chips.
26. Larger capacity bathrooms (possibly inclusive with a workout room).
27. Internet access computers in the break area for personal use during breaks.
28. Covered individual courtyard area for smokers/non-smokers.
29. 3 full-sized refrigerators, 1 for each shift
30. 2 or more microwaves
31. Full spectrum lighting (natural light simulation) instead of fluorescent lights
32. Computerized county maintained roadways and city limits maps available at every workstation.
33. Janitorial room w/sink and clean up supplies that is accessible 24 hours a day.
34. Better storage at each position for books, maps, binders, etc. that are kept at those positions, especially vertical storage for items that stand on end (binders).
35. If we keep the responsibility for the PCSO Property and Evidence Facility alarm monitoring, move the computer to a manned complaint taker position.
36. Large work stations for areas that are going to have to also monitor things like bait vehicles, alarm systems and other systems that may be added at a later date.
37. Longer cords on computer mice and Genovation keypads to make placement a little more flexible.
38. Under console wiring should be "treed" and attached to the consoles or placed in cord gutters to keep them from becoming entangled in the user's feet and chairs under the console, preferably with Velcro wraps instead of permanent plastic ties.
39. Radio consoles should be designed and set up in a way that allows service people to work on the position without total disruption of the operator manning that position.
40. Extra power outlets near each position for non-center use that are not on the UPS and won't affect or overload the circuitry of the positions near those outlets.
41. Locate any back up generator away from critical work areas (comm. Centers and classrooms) to minimize noise disruption and also away from any building air intakes.
42. Recycling bins and regular pick up by a recycling company for items like aluminum cans and plastic bottles.
43. Computers for each position should be rack mounted and in "clean" mounting cabinets.

44. Computerized county-maintained roadways maps available at each position.
45. A janitorial service that does more than just empty the trash (sweep and mom floors that need it).
46. Centralized supervisor position on a raised platform.
47. Signal lights or strobes at each position for requesting assistance from the supervisor (prevents shouting across the room).
48. Personal items locker at each position to help keep personal items off of the workspace.
49. Global positioning mapping for the units working in the field that can be displayed at each dispatch position (maybe incorporated into the Vesta mapping?).
50. Center physically located a reasonable distance to Interstate 10 or 19 for easy employee commuting.

Facility Considerations – Captain Wilson

1. Infrastructure
   - A. Electrical Power
     1. Ideally dual feeds from separate substations
     2. UPS system to support all critical functions (1 hour)
     3. Generator back-up to power entire facility (72 hours of fuel availability)
     4. Lots of outlets (both UPS and non-UPS)
   - B. Telephone (Admin)
     1. Redundant Paths
     2. Separate Entrance Routes
     3. Switch Connected to PCSO Avaya Main
     4. Call accounting for billing and work performed
     5. Auto call distribution
     6. Integrated with 9-1-1 Equipment
     7. 9-1-1 routed to admin system backup
     8. Headset operations
     9. Network monitoring
   - C. 9-1-1
     1. Facility located for ease of access to telephone central office
     2. Dual paths/entrances
     3. Switch design to provide back up within building (min. 2 switches). City back up, county <->
     4. Headset operation
     5. Auto call distribution
     6. Call accounting reporting

7. P2 map integration
8. CAD integration
9. CAD mapping integration/AVL
10. ANI/ALI printer
11. Speed dial forwarding
12. VOIP vs. Analog
13. System alarms

D. Network/IST
1. High speed connection to PCSD HQ (Fiber)
2. Redundant paths and entrances
3. Back up circuits
4. CAD to remain at 103? Could it be moved to min. a point of failure?
5. E-mail server at Comm. Facility to min. point of failure
6. Remote management/monitoring
7. Encrypted circuits
8. Security
9. Network or multiple?
10. Software management
11. Data/Phone jacks

E. Recording
1. 9-1-1
2. Admin. Phones
3. Radio
4. Instant Playback

F. Monitors
1. Access to news and traffic cameras
2. Helicopter/plane video feeds

G. HVAC
1. Back up systems
2. on emergency power
3. Remote monitoring and alarms
4. Physical plant accessible outside of secure areas of facility

2. Site Issues (See John's worksheet)
   A. Location
      1. Flood plain
      2. Hazards
      3. Air Traffic
      4. Proximity to freeway and services
      5. Proximity to 103
      6. Proximity to back up facility
   B. Security
      1. Protection from VEH bombs
      2. Fencing
      3. Secure parking/entrance (lighted)
      4. Adequate set backs
   C. Amenities
      1. Proximity to restaurants/services
      2. Transportation

3. Employee Workstations
   A. Furnishings
      1. Sit/stand with electric lifts
      2. Individual environment controllers
      3. Clean, well organized ergonomic design
      4. Good cable management
      5. Accessibility to equipment without disturbing occupant
      6. Storage
   B. Equipment
      1. Minimize keyboards/monitors
      2. Rack mounts for monitors
      3. Task lighting
      4. Flat panel LCD monitors
      5. What tools to minimize yelling?
      6. Raised floor

4. Building Requirements
   A. Equipment Rooms – separate telecomm/radio rooms
   B. Separate Rooms for electrical & building systems

C. Security
   1. Key Card System
   2. Parking Gates
   3. Lobby
   4. Cameras/Monitoring & Storage
   5. Fencing
   6. Alarms (building/fence)

D. Training Room
E. Conference Room
F. Storage
G. Break Area/Kitchen
H. Vending
I. Smoking Area Outdoors
J. Exercise Room
K. Lockers & Mailboxes
L. Showers
M. Quiet Room
N. Supervisor Office/Space
O. Central Vacuum
P. Design Issues
   1. Survivability
   2. Tours
   3. Flexibility
   4. Media

The draft of this record was sent to Captain Paul Wilson on March 20, 2006.
Corrected draft was returned to CTA Communications on March 31, 2006.

Interviewee Name & Address:
Captain Paul Wilson
Sheriff
Pima County Sheriff's Department
1750 E. Benson Highway
Tucson, AZ 85714

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2. Dispatch Center Survey

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: **Pima County Sheriff's Department**

Contact Name: **Pat Joy** **Position:** **Communications Manager**

Phone: **520-741-4904** **Email:** **pat.joy@sheriff.pima.gov**

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement x Combined Fire/EMS Ajo Only

Fire only (paid/volunteer) _____ Emergency Medical Services (EMS) Ajo Only

Other: _____

Please list the agencies and describe the geographic area served by your communications center

Geographic Area

The Pima County Sheriff's Department maintains two separate and distinct dispatch operations. In the Tucson metropolitan area the Communications Section within the Administrative Bureau provides services for an area of approximately 4000 square miles. This includes all unincorporated areas east of the Tohono O'Odham reservation boundary. The service population is approximately 350,000. The service area includes dense populated urban areas and rural desert and mountainous regions.

In Western Pima County the department provides dispatch services through staff assigned to the Ajo District within the Operations Bureau. The west boundary of the Ajo District is the east boundary of the Tohono O'odham Reservation. Including the reservation the geographic area is approximately 5,000 square miles. The service population is approximately 2,500 and swells to approximately 6,000 during the winter months. The service area includes the small communities of Ajo and Why and encompasses large tracts of federal land.

The Department does not provide direct services on the reservation. The reservation creates separation of geographical responsibility.

Agencies

The Tucson Communications Section provides dispatch services to support the various operations of the Pima County Sheriff's Department in the Tucson metropolitan area. This consists primarily of support for dispatch patrol functions and communications requirements of other units such as criminal investigations, traffic, DUI squad, motorcycle enforcement, SWAT, etc. Dispatch operations are conducted on three separate dispatch talk groups defined by geographic service areas. Additionally, the dispatchers monitor the ICALL channel and two other talkgroups or conventional channels for radio activity.

In addition to their responsibilities to the Sheriff's Department the Unit also provides services to other County departments. We provide after-hours dispatch for Pima County Animal Control, after-hours monitoring for Pima County Department of Transportation & Wastewater Department, and monitor the County1 talkgroup for other County personnel (common talkgroup in all Pima County radios).

In Ajo, the District dispatch staff dispatches for the Sheriff's District personnel, the Ajo/Gibson Volunteer Fire Department, Why Fire District, and Ajo Ambulance Company. Dispatch for the fire departments and the ambulance company is on a VHF radio system maintained by Pima County.

911 Services Provided:

Primary PSAP x Secondary PSAP _____

Basic 911 x Enhanced 911 x Wireless Phase I x Wireless Phase II x

VOIP 911 In process

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch?

Tucson 6 Ajo 2

How many positions does your PSAP have that can answer 911 calls but not dispatch?

Tucson 8 Ajo 0

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

The control room at the Pima County Adult Detention center is equipped with 2 E.F. Johnson Tracer consoles to dispatch radio traffic for the jail. The number of consoles needs to increase to a total of 4. The jail has no responsibility for E9-1-1.

Tucson Communications Section Information:

Activity	2003	2004	2005
Wireline 911 Calls Received	**120,208**	**125,431**	**121,593**
Wireless 911 Calls Received	**101,648**	**107,410**	**119,227**
Total 911 Calls Received	**221,856**	**232,841**	**240,820**
Wireless Call %	**45.8%**	**46.1%**	**49.5%**
Average 911 Answer Time	**9 seconds**	**9 seconds**	**9 seconds**
Other Emergency Calls Received	**104,736**	**118,503**	**121,030**
Administrative/Non-Emergency Calls	**128,820**	**108,606**	**86,914**
Total Incoming Calls	**464,412**	**459,950**	**448,764**
Police Calls Dispatched	**139,618**	**142,526**	**146,082**
Police Officer Initiated	**24,547**	**22,194**	**19,394**
Fire Events Dispatched	**0**	**0**	**0**
Emergency Medical Incidents	**0**	**0**	**0**
Medical Pre-Arrival Instructions Given	**0**	**0**	**0**
Number of 911 Transfers	**76,920**	**77,955**	**80,729**
CJIS (SCIC/NCIC) Inquiries	**122,937/93,723**	**122,853/108,486**	**127,128/107,632**
CJIS File Maintenance (Entries, Mods, Cancels, etc	**3.656**	**5,145**	**5,277**
Administrative Messages	**2,481**	**2,715**	**2,252**

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1)	x	Dispatch Police/Law Enforcement	x
Call Answering (administrative)	x	Dispatch Fire	_____
Call Answering (Other) (i.e. after hours, etc.)	x	Dispatch EMS	_____
Traffic Monitoring	_____		
Dispatch City/County Services/DPW service calls	x - If it means notifying agencies after hours of		
Warrant/Article Entry/Confirm	_____	Dispatch Animal Control	x Rarely
NCIC/state CIC checks	x		

Other tasks performed:

Take low priority police reports via telephone (Telephone Reporting Center). Make recordings of both radio transmissions and 911/other telephone calls, upon request. Monitor the alarm system for PCSD Property and Evidence. Maintain "alias" database in two separate systems (Orbacom and SMART). Monitor the National Weather Radio. Receive bulletins, Amber Alerts, emergency alerts, etc., evaluate same and disseminate based upon evaluation. Send out group text messages to command staff personnel. Monitor the Bait Vehicle when deployed. Activate Gateway interoperability solution when requested by PCSD personnel or other agencies. Once activated on behalf of PCSD personnel, monitor Gateway. Primary informational conduit, outside normal business hours, for security personnel stationed at the Front Desk. Maintain 4 portable radios as back-up radios for field personnel and log issuance of same. Maintain the Force Commander mobile data computer and log same. Deploy a specially trained dispatcher on SWAT call-outs (work from the mobile command post vehicle dispatched to the SWAT call-out.) Manager, Training Supervisor and Commander provide Communication/radio training to outside groups. Host media tours and/or news spots in the Communications Center. Provide tours of the Comm Center to local groups. Manager maintains the Radio Designator list for the Department.

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	**PEI**	**VESTA Enhanced ALI**	**2.0**	**1-16-06**
Answering Position Equipment	**PEI**	**VESTA**	**2.2 SP 2**	**1-16-06**
Map	**PEI**	**Orion MapStar**	**5.2**	**March 2006**
CAD	**Spillman Technology**	**Summit**	**4.5**	**1989 w/annual upgrades**
Radio Console	**Orbacomm***			**1-1-2000**
UPS	**PowerWare**	**9390 - 80 KVA**		**22005**
Instant Recall Recorder	**TEAC NICE**	**Wordnet**		**1994 August 2004**
Logging Recorder	**Nice**	**Wordnet**		**August 2004**
PBX	**Avaya**	**Definity G3**	**V12**	**1990 w/upgrades**
Master Clock	**Spectracomm**	**Netclock**		**1998?**

***Consoles at the Pima County Adult Detention Center are E.F. Johnson Tracer Consoles.**

9-1-1 System

Number of 911 lines 16, plus city backup (15)

Number of other lines 15

ANI & ALI printers – number & location 1 in the Comm Center

Abandoned call alarm MagIC Monitor

Single Button Transfers 15

Ring down circuits 11

Telephone Service Provider BLS Communications supports the Avaya equipment

911 Service Provider Qwest provides the 9-1-1 telecommunications and equipment services

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? Y

911 interface Y/N? Y

RMS interface Y/N? Y

NCIC/State interface Y/N? Y

Mobile Data & AVL Y/N? Y mobile data no AVL

Logging Recorder

Channel Capacity 56 channel Nice Wordnet

Recording format (tape, DAT, VHS, etc.) Digital RAID-5 storage

Approved Minimum Staffing Supported by Authorized Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	**3**		**5**	**1**
Afternoon Shift	**4**		**5**	**1**
Night Shift	**2**		**5**	**1**

Current Minimum Staffing Supported by Actual Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	**2**		**4**	**1**
Afternoon Shift	**3**		**4**	**1**
Night Shift	**1**		**4**	**1**

Authorized/Actual Staffing

	Dispatchers	Call Takers	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	**31**	**13**	**4**			**1**		**2**
Actual FT	**23**	**8**	**4**			**1**		**2**
Authorized Part Time	**2**							
Actual Part Time	**2**							

The Department Information Systems & Technology Unit provides database, GIS and technical support for the entire department. The unit is staffed as follows:

1 EDP Systems/Program Manager (Unit Manager)
2 Technical Support Supervisors
    1 is a database manager for our administrative data applications
    1 supports our Unix and Windows server operating systems support
2 EDP Technical Support Specialists
    1 supports our NCIC and ACJIS interfaces and storage solutions
    1 supports our wide area network
2 Database Specialists
    1 supports our Spillman application
    1 supports several administrative databases and computer purchasing
1 LAN Support Specialist
    (Provides support for Windows servers, Microsoft Domain, and desktop devices)
1 Information Systems Instructor
    (NCIC/ACJIS systems security support, user training for Spillman application)
1 Public Safety Data Technician (Data entry quality control)
2 Information System Coordinators
    1 Provides desktop support
    1 Supports our fleet of mobile data computers

OTHER SYSTEMS

_____

_____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

North 1 – Primary Dispatch Talkgroup
South 1 – Primary Dispatch Talkgroup
East 1 – Primary Dispatch Talkgroup
North 2 – Car to car for North 1
South 2 – Car to car for South 1
East 2 – Car to car for East 1

Animal Control
County 1 – Talkgroup in all County radios
Sheriff (all call)
Gateway (Testing tri-band repeater solution)
Conventional: Repeater 1, ICALL

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Emergency
Safe Streets 1 – Alternative dispatch talkgroup for special patrols
Safe Streets 2 – Car to car for Safe Streets 1
Tac 2-4 – Extra operational talkgroups available for assignment
CAN 1-5 – Talkgroups assigned to drug task force

What agencies do you need to communicate with but cannot?

Tucson Police
Marana Police
AZ Department of Public Safety
Tohono O'Odham Police
Pima College DPS
U.S. Border Patrol
U.S. Customs
U.S. Parks Service
All local fire agencies
Oro Valley Police
Sahuarita Police
Pascua-Yaqui Police
U. of A. Police
South Tucson Police
FBI/DEA
U.S. Forest Service

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

1. Coverage issues that heavily impact field end users create issues for dispatch end users. Field end user frustration often is "dumped" on the dispatcher, resulting in additional stress for dispatch personnel. Geographical areas of concern are Avra Valley, Mt Lemmon, Arivaca and Sasabe, and the far eastern part of the County which is growing rapidly. Deputies who respond to a small residential area in southeastern Pima County have absolutely no communication ability. Unfortunately, many of the areas that are not covered by the radio system are also not covered by the MDC footprnt. These combine to create additional concern and stress for dispatchers when sending deputies into these areas for any reason, but especially priority, dynamic situations.

2. Emergency button activations create dispatch issues. The design of the radio system takes the EB activation off the assigned talk group to a special talk group that is heard only by a special dispatcher and not by other units working near the emergency. The dispatcher working the talk group with the deputy gets the indication that the deputy has activated the EB, but the dispatcher responding to the EB activation has no idea what the deputy is working or where. Other deputies working the same area have no indication that the deputy has actived the EB. This has also created a procedure that is cumbersome if an EB activation is for a real emergency. Dispatch personnel have not really reached a comfort level with this procedure, which makes it more stressful when these situations occur. We are unable to handle multiple, simultaneous trips effectively; we need a longer TX queue

3. Patching talk groups is so cumbersome, that we NEVER use this function. While patching would often create the easiest solution for dynamic situations crossing Patrol district boundaries, we DO NOT use the patch. Deputies are directed to switch talk groups. This is an Orbacomm console issue.

4. Should console problems or radio system problems develop, mobile and handheld radios are available for dispatch personnel. It often requires each dispatcher to have the mobile radio traffic on their headset, and two handhelds available to monitor other sites for potential radio traffic. This is hugely cumbersome, as dispatch personnel find it difficult to move through talk groups and channel banks on either mobile or handheld.

5. The Orbacomm consoles have always been more complicated than we need. Our dispatch positions are relatively static, with one dispatcher working one talk group. While each console should have access to different talk groups, the console itself could be more user friendly. When the Orbacomm consoles were installed in late 1999, we had no access to Orbacomm customer support for questions. Everything had to go through EF Johnson. That meant that questions and understanding of the console and what we could do with it was filtered through EFJ.

6. Training with actual equipment (911 consoles and radio positions) is difficult because the only positions available for training are LIVE positions. Additionally, space for a training pair, especially on radio, makes training a little more difficult.

7. Space, especially on the radio side of the room, is an issue. The positions are too close to each other. While this may, at times, create ease of information flow when one dispatcher is working an extremely difficult, involved call, it also increases stress for the entire dispatch staff.

8. Environmental issues cannot be addressed sufficiently in the current work space. Lighting and climate control have been issues since we moved into this work space.
Employee amenities are not addressed well - there is no kitchen space. The small breakroom includes lockers, a refrigerator, and a loveseat. The lockers are too small, they do not allow the employee to even keep their Rules and Regulations and Comm Guidelines stored there. The locker is large enough to store a headset and a few personal items.

9. Ergomonics has been an issue, especially with chairs. While the County has adopted a good chair for employee use, sometimes a "one solution fits all" approach doesn't work for everyone.

10. Employees in dispatch come and go at all hours. Secure parking is not provided, and while the facility security is very good, parking remains an open issue. Even the "secure" area at the rear of the building doesn't prevent someone on foot from just walking in.

11. Storage for Communications is practically non-existent. Though we don't have tons of things to store, storage is not available.

12. Office space for supervisors is not conducive to use by the on-duty supervisor as it takes the supervisor totally out of the room. The manager's office space, though located across the hall from the dispatch floor, does not allow the manager to easily keep up with workloads or developing issues.

13. Communicating with other local agencies is difficult, with use of hot lines for the majority of these messages (dispatcher to dispatcher). The addition of our homegrown Gateway tri-band repeater has allowed some cross agency communication in the field, but it is used infrequently and the built in transmission delays between the County radio system and others does not endear it to field end users.

Gateway - one channel conventional - limited coverage, takes personnel away from primary talk group, required to staff, need to turn on.

14. Clarity of radio transmissions - currently tend to be poor (I believe this is due to the field units in a poor coverage location. Generally, TX from the consoles are clear).

15. Too long for PTT - need to get back to 250 ms. Likewise for the end of the TX - 2 turn off codes slows the process.

16. Missed transmissions on the "front end"- generally associated with slow system speed and inability to bring other sites up to receive the TX.

17. Required to re-boot system switches at least weekly

18. No Background tone: for when the TG is working a priority call, it tells someone coming up on the TG that a priority call is working and to only TX priority traffic; This feature must ONLY be audible when a unit PTT - NOT at all times (otherwise it would serve as a tracking beacon while conducting a building/area search)

19. Noisy environment

20. Obtaining statistical information is difficult, not simple. File sizes are so large they will not function in Excel

21. Monitoring additonal talk groups/frequency along with the primary - effective patching might help

22. NICE Recorder does not allow us to effectively redact information from audio recordings.

23. NICE Recorder often mixes telephone calls in a single audio block - we believe this is due to the operator quickly disconnecting from one call and connecting or reconnecting with another call. The Recording block will have no gaps in between calls and we are unable to make

a recording of less than the entire block, providing the requestor more recording, almost always unrelated, than they requested. Currently, we record only for the Sheriff's Department. As we move to a regional wireless communications system, considerations will need to be discussed reference the partitioning of recorded channels to prevent unauthorized listening. Recording management.

24. As the Communication Center grows in size, we will need the ability to quickly display our "Acting Commander Board" at each position via computer. (The "Acting Commander Board" is a large white board in the Comm Center where we list those commanders and supervisors who are away and who to contact in their absence. It also allows a place to update useful info such as the on-call radio tech, pay period dates, special events, who called in sick, etc.)

25. Wireless headsets have been inadvertently turned off with no alert to the user. They need to have a power button which requires a prolong press and an audible alert.

26. Wireless headset batteries have not been holding a full charge per shift. We will need a battery capable of such and/or more batteries and chargers (two per shift).

27. Our Orbacom consoles are not encrypted. We have encrypted radios in the field. If we have an emergency button trip from an encrypted radio in the field, we will not be able to understand the audio. Consoles should be encrypted or, at the very least, emergency trips should redirect the radio to clear mode (this is not necessarily desirable solution since the vast majority of radio E-button trips are false).

28. Furniture placement - inaccessible areas - collect dirt/debris.

29. We need additional dispatch and call taking positions for training, and to allow cleaning and repair. Our existing consoles are not cleaned regularly because they're constantly being used. Additional positions will allow a planned cleaning schedule.

Ajo District Information:

Activity	2003	2004	2005
Wireline 911 Calls Received	**399**	**498**	**569**
Wireless 911 Calls Received	**0**	**291**	**979**
Total 911 Calls Received	**399**	**789**	**1448**
Wireless Call %	**0%**	**36%**	**68%**
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages	**275**	**396**	**301**

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) x

Call Answering (administrative) x

Call Answering (Other) x
(i.e. after hours, etc.)

Traffic Monitoring _____

Warrant/Article Entry/Confirm _____

NCIC/state CIC checks x

Dispatch Police/Law Enforcement x

Dispatch Fire x

Dispatch EMS x

Dispatch City/County Services/DPW x

Dispatch Animal Control x

Other tasks performed: _____

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	**Positron**	**Lifeline 100**		
Answering Position Equipment	**Positron**	**Simon**		**2/2003**
Map	**Plant**	**Orion**		
CAD	**Spillman Technology**	**Summit**	**4.5**	**1989 w/annual updates**
Radio Console	**EF Johnson**	**Tracer**		**11/1999**
UPS	**APC**	**RS 1500**		**12/2005**
Instant Recall Recorder	**Eventide**	**VR240**		**7/2001**
Logging Recorder	**SAA**	**SAA**		**SAA**
PBX	**Avaya**			
Master Clock	**Spectracomm**	**Netclock**		**1998?**

9-1-1 System

Number of 911 lines 2 Enhanced trunks, 1 basic 9-1-1 backup

Number of other lines 5 administrative trunks

ANI & ALI printers – number & location 1 in the Comm Center

Abandoned call alarm None

Single Button Transfers 3

Ring down circuits None

Telephone Service Provider BLS Communications provides support for Avaya equipment, TableTop Telephone provides telephone service support

911 Service Provider Qwest provides telecommunications services and equipment support

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable YES ☒ NO ☐

Can 9-1-1 Equipment "rebid" ALI YES ☒ NO ☐

CAD System

Redundant processor Y/N? Y

911 interface Y/N? Y

RMS interface Y/N? Y

NCIC/State interface Y/N? Y

Mobile Data & AVL Y/N? Not currently provided to Ajo District although CDMA service is now available

Logging Recorder

Channel Capacity 8

Recording format (tape, DAT, VHS, etc.) Digital – Archive on DVD-RAM

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift			**1**	**1**
Afternoon Shift			**1**	
Night Shift			**1**	

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	**5**						**1**
Actual FT	**5**						**1**
Authorized Part Time							
Actual Part Time							

OTHER SYSTEMS

_____

_____

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

Patrol 1 – Primary dispatch talkgroup
Patrol 2 – Car to car for Patrol 1
VHF Interagency (Dispatch for Ajo Fire, Why Fire, Ajo Ambulance)
Pima County Department of Transportation Car to car

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

CID – Investigations car to car
BANN – Drug task force talkgroup
County 1 – Universal talkgroup in all County radios
Alliance – Federal VHF channel

What agencies do you need to communicate with but cannot?

United States Border Patrol
U.S. Customs Enforcement
National Park Service
Bureau of Land Management
AZ Department of Public Safety

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

1. Need interoperability with Federal and State agencies which operate on VHF and UHF radios.

2. Single repeater site does not provide complete coverage through the AZ85 corridor and into varied rural areas due to area geography.

3. Currently CPU Bus speeds have problems during frequency cross patching and use of encryption.

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

3. Computer System Checklist – Dispatching Operations

Instructions for Dispatching Operations Checklist

The Pima County community is in the process of reviewing the current communications systems. We are asking that the Dispatch Operations Departments participate in an information gathering process to assist in obtaining information regarding the existing Computer Assisted Dispatch operating systems in use in the community. The intent of this review is to determine the size and capacity required now, and in the future, and elicit responses concerning operational features. The existing systems may require enhancement for size and capacity; as well as the addition of new features and functions. The existing systems should be applied to standards created by the National Fire Prevention Association in their NFPA 1221. The NFPA 1221 provisions have been adopted by the Commission on Accreditation for Law Enforcement Agencies (CALEA) for CAD systems. These NFPA 1221 requirements as they apply to CAD systems are included at the end of this document for your review.

The checklist contains functions found in many, modern CAD systems. The goal is to identify the functions desired by the dispatch operations community. The checklist contains entries that apply to law enforcement, fire, EMS, and call taking. You should respond to areas that affect your operation.

We ask you to read closely the following checklist. This checklist contains response areas, which we are asking that you complete. This section may be returned on the original forms provided. Each item in this response document should be marked with one of the following responses:

C - Function is completely supplied by existing system (s).

A- Function is desired and would be an add–on to the current system.

M - Function is desired and could be provided with modifications to the existing software package.

NA- Function does not apply to this agency.

X - Function is not required or desired.

This part of the checklist should include a response to each element marked as above for additional information. In the event that additional information is required it can be provided

on a separate sheet and further describe the the specific requirement. Additional information should indicate the element number to avoid any ambiguity and should identify any additional comments or explanation required.

If there are other features, functions, or concerns that you have, please write them out in free form and simply attach them to your checklist.

We thank you in advance for your efforts.

Call Taking Functions

Incident Entry

C There shall be single format for entering event data, i.e., law enforcement and fire/EMS events use the same format.

The initial entry and subsequent modification of an incident shall be logged into a file that includes:

C Date/Time stamp
C User ID
C Workstation location
C Information changed with before and after "image'

The system must accept the following data elements in a preformatted screen:

C Location of incident
C Additional location comments, independent from narrative information
C Incident type for each type of service to respond
C Incident type to create multiple types of service
C Ability to override priority by dispatcher
C Reporting party name
C Reporting party address
C Reporting party phone
C Vehicle description
C Suspect description
C Unlimited text information (via repetitive entry and field scrolling functions)

The following facilities must be supported:

C Address verification based on street name (Soundex) and street address number block range. Soundex can be activated/deactivated by system administrator.
C Addresses can be entered into the system by street intersection or common place names.
C Address verification produces appropriate Fire district; Law Enforcement beat, etc. and recommends most appropriate unit to dispatch based on:

C Type of call
C Unit availability
C Response zone proximity
C Dispatcher can override unit recommendations.
C Dispatcher can override response zones.
C Units can be relocated to appropriate stations.
C Location verification occurs via function key prior to saving.
C Response to location verification choices is not required prior to entry of additional event
C Ability to freely move directly to any field in input form.

Incident Type Codes

C Incident type codes must be validated during incident entry.

C There must be the ability to display selection list for incident types.

X There must be the ability to select incident type from a displayed list, with data automatically inserted in field.

The incident type code must automatically provide the following information:

C Description of incident type
C Priority level or requirement for manual specification
C Dispatch-to-on scene timeout value
C On scene-to-next status change timeout value specific or non-standard incident routing

C The above information must be modifiable on-line.

E-911 (ANI/ALI)

C The CAD system must interface directly to the telephone company E-911 system.

C Information from E-911 (calling number and service address) must appear automatically on the incident entry screen without specific operator action.

C The E-911 information must be accepted into the dispatch information by dispatcher pointing device or function key action.

C The E-911 information display must be able to capture all information as provided by the telephone company backup display.

C The E-911 location can be utilized without specific operator action, unless manually overridden.

X If the E-911 information is overridden, it must still be recorded in the incident record for later review.

C The E-911 location information must be validated using the geographic files on the CAD system, which are received from the Public Safety geo-database.

C The operator must be able to answer the E-911 telephone call prior to displaying an incident input form; the E-911 information must be automatically displayed when the entry form is displayed and continuously able to be recalled until a new call is answered or cleared by operator.

Geographic File Interface

A The system shall provide the capability to use longitude/latitude for designating geographic locations. This functionality shall provide an accuracy of +/- 125 meters according to the latest FCC Rules 94.102 and 98-245.

C All locations must be entered in "free form", without requiring the entry of data into specific data fields in the input form.

C The system must support the entry of apartment number, lot numbers and so forth as part of the "free form" location field.

C Partial ("half") addresses must be supported.

C Premise address modifiers must be supported (e.g., 432B MAPLE ST Apt XXX).

X Premise address entry must result in a display of both low and high cross streets.

X Intersection entry must result in a display of the premise addresses of both streets at the intersection.

C Common place name entry displays equivalent address or establishment number/Identifier.

C The system must have a "near match" capability in order to identify street or common place names for which no exact match is found in the geo-file.

C A minimum of two characters is needed to result in a street or place name selection list.

C The "near match" capability must be based on a dynamic algorithm to match names; it shall not require a predefined list of misspellings.

C The system must support an "alias" function to permit use of alternative names such as "10th" for "Tenth", "JFK Dr" for "John F. Kennedy Drive", etc.

C Street name choices for intersections must be presented only for streets, which physically intersect.

C The operator must be able to enter common place locations by specifying any word in the place name.

C The operator must be able to verify the address at any time during incident entry process by function key request.

C The operator must be able to override the information from the geographic file during incident entry.

C The system shall produce a report of all locations entered as operator overrides.

C The operator must be able to change any location entered and/or validated at any time prior to final incident acceptance by simply re-keying the location into the input form.

C Any call taker or dispatcher must be able to update an incident location at any time following incident acceptance.

C Whenever a location is updated, a record of all prior locations, which have been entered, must be maintained in the incident record.

C The system must automatically route the incident to the dispatcher responsible for the location entered but without interfering in any way with multiple dispatchers working the call simultaneously.

C The dispatcher shall be notified of address jurisdiction.

Priority Incident Interrupt

C The operator must be able to interrupt and suspend an incident that is being entered in order to service an incident, which has a higher urgency.

C This interruption can be made at any time by function key.

C An indication shall be displayed to the call taker to indicate the number of incidents suspended.

C The system administrator can set the limit to the number of calls, which can be suspended.

C Following the entry of the high priority incident, the system must automatically resume processing of the interrupted incident(s) when recalled by the operator.

Fast-Transfer Incident Entry

C A critical incident can be entered at any time following the entry of location and type information. A fast-transfer incident can be entered with no more keystrokes than needed for normal entry.

C Following a fast-transfer entry, the input screen must be prepared to allow immediate entry of additional information simultaneously by multiple operators.

C The dispatcher must be notified that the call taker is entering additional information.

C The fast-transfer function can be repeated any number of times during the entry or supplement of an incident.

Incident Transfer to Dispatch

C The system must automatically route a new incident to the appropriate dispatch workstation(s) depending upon the location of the incident and the call classification (Law Enforcement, Fire, or EMS).

C The operator must be able to override the automatic routing of incidents by location for routing to a specific dispatcher(s) depending upon type of incident.

C An incident can be automatically routed to a predefined dispatcher(s) for special incident types.

Duplicate Incident Detection

C During incident entry, the call taker shall be notified of any active incidents near the one being entered but this shall in no way interfere with the normal call-taking functions.

C The duplicate detection process shall be advisory only; the operator shall determine whether the new call is a duplicate, and whether to proceed with this transaction.

C The call taker must be able to display the complete record of any potential duplicate by function key without interrupting current data collection process.

C The duplicate incident can be supplemented with the new information by function key request but this shall in no way interfere with the normal call-taking functions.

C If an incident is entered which is later determined to be a duplicate of another incident, the dispatcher must be able to cancel the incident.

Premise and Hazard Information

C The system must contain a file containing data stored by location. This data can include information on threats against public safety officials, hazardous substances stored, locations of invalids, etc.

C The hazard file must be automatically checked during incident entry.

C A permanent notification of the presence of hazard information must be recorded in the incident history.

C The actual text of the hazard record shall be stored in the incident history record only for specific types of hazards.

C Hazard file records must have a purge cycle, which prevents access after a preset date or time period.

C Hazard file records can be entered for permanent retention.

C Multiple hazard records can be entered for a single location.

C The dispatcher must be able to display all hazard data within a specified distance from a unit or incident.

Prior Incident Information

C All prior incident activity on file at an incident's location must automatically be displayed.

C Prior incident recording must not require operator action and shall not interfere with the normal functions of the operator.

X A warning must be displayed for recent prior incidents within a time span designated by a user configuration.

C Detailed prior incident information must be accessible by function key.

Entry of Non-Dispatch Calls

C The system must have the ability to record incidents where no dispatch occurs.

C Non-dispatch calls must be entered in the incident history file, and shall be accessible via all standard incident access functions.

C An incident entered in this fashion can be later reopened and dispatched normally with a date/time stamp.

Entry of Completed Calls

C The system shall allow for the entry of calls that have been previously handled but not yet entered into the system, due to conditions such as system unavailability.

C Completed calls of this type can be activated for the purpose of unit assignment.

Multiple Types of Service

C The call taker must be able to enter a single call for service, specifying multiple types of service.

C Certain incident types must automatically generate the appropriate multiple types of service responses.

C This process must not require separate actions for each type of service.

C Any supplementary information that any call taker adds to any incident entered in this fashion shall be automatically added to each related incident.

Dispatching Functions

Pending Incident Display

C A list of pending incidents must be available for continuous display to the controlling dispatcher.

C Incidents shall be listed according to priority and entry time.

C The dispatcher must be warned whenever a new or updated incident is added to the pending incident display.

C Any position can display all pending incidents, or only those for one or more specific dispatch positions.

A The system must provide an indication in this display, which indicates which incident, is currently being reviewed by the dispatcher.

A At any position display of pending incidents shall show which ones are currently being reviewed by the responsible dispatchers but shall not interfere in any way with the normal function of any workstation.

The system must display, at a minimum, the following information for each incident in the pending incident display:

C Incident number
C Incident type code
C Description of incident code
C Priority level
C Number of minutes waiting
C Incident location
C Dispatch control area
C Law Enforcement beat or fire station as applicable
C Hazard warning and complete hazard information
C Preassigned unit identifier

The system must support a visual warning, set by the system administrator, for incidents in the pending list or while being viewed by dispatcher or call taker when any of the following special conditions occur:

A Incident is being viewed by controlling dispatcher.
C Wait time has exceeded allowable maximum (by priority).
C Supplementary information has been added to incident.
C Incident cancellation has been requested.
C Incident location, type or priority has been changed.
C Preassigned unit is unavailable for assignment to incident.
A Pending incident timeout warning must be updateable by dispatcher.
A None of the visual warnings listed above shall interfere in any way with the normal function of the workstation.

Incident Control

C The dispatcher shall have the flexibility to process pending calls in any sequence.

A An incident may be worked by multiple positions.

C The dispatcher may select calls for dispatching by incident number or unit number.

X The dispatcher may select calls for dispatching by mouse reference.

C The system must automatically present calls for dispatch in priority sequence, sorted by time

C The dispatcher must be able to quickly request the display and unit recommendation for any specific call at any time.

C The dispatcher may request the display of a pending call by pointing to it with a mouse or pointing device.

C The dispatcher must be able to share the control of any pending incident with another dispatcher at anytime.

C Any dispatcher can dispatch units to another dispatcher's incident. **AT SUPV TERMINAL ONLY**

C An incident can be dispatched directly from the pending incident monitor without redisplay after initial review.

C A unit may be assigned to a pending incident by pointing to the unit and the incident with a mouse.

C The dispatcher must be able to place any call on "hold" with a unique visual indicator to show hold status, placing it back in the pending queue, so that the next call in sequence can be displayed.

Incident Review

The system must provide a mechanism whereby the dispatcher can review a pending incident prior to dispatch. This review must show critical incident information, including:

C Jurisdiction
C Incident number
C Incident type or nature code
C Description of incident type
C Initial incident location
C Current reported location
A Any prior reported location
C Name, address and telephone of reporting party
C Hazard information associated with incident location
A Summary of prior incidents at the same location
AWarning of recent vs. old prior call
C Warning that incident is in a different area of control
C Suspect name and vehicle information **ATL CAN BE ATTACHED**
C Law Enforcement beat, fire station, EMS post as applicable
C Recommended unit(s) for dispatch
C Incident narrative information
C All prior unit assignments and status changes
C Times of all previous status changes

C Automatic scrolling must be utilized in cases where the entire event cannot be completely displayed, showing the most recent information.

C Manual line-level scrolling must be supported in addition to paging of displayed incident.

C The displayed incident must notify viewing party of update information while the incident is displayed.

A Viewing party should have ability to update incident with new information with a single keystroke.

C A pending incident must be able to be displayed by command or by pointing device (e.g., mouse, and trackball).

Law Enforcement Unit Recommendation

Units must be recommended dynamically using, at a minimum, the following criteria:

C Jurisdiction
CIncident location
CIncident type
CIncident priority
CType of units required
CNumber of units required
C Current unit status
C Beat assignment
C Nearest adjacent beat

C Up to four Law Enforcement units shall be recommended but not required, in order of decreasing suitability, based upon the above criteria.

C ”Adjacent beat" shall be determined by incident location within the primary beat.

C The system must indicate the recommended number of units to respond according to the type of incident.

C The dispatcher must be able to override the recommended units at any time.

C Unit recommendation criteria must be user-definable by incident type and priority.

C Unit recommendation criteria must be modifiable on-line at any time.

C A unit's type must be able to be changed during its shift, with appropriate change to unit recommendation (e.g., from a one-person to a two-person unit).

C Unit recommendation plans must be able to be changed dynamically.

A Unit beat assignment must be able to be designated when a unit comes on-duty.

Fire Unit Recommendation

Units must be recommended dynamically using a fire "run card" using, at a minimum, the following criteria:

N/A Jurisdiction
N/A Incident location
N/A Incident type
N/A Current unit status
N/A Number of units required
N/A Type of units needed
N/A Fire station location

N/A Any number of units can be recommended at a time.

N/A Units shall be recommended according to current fire station assignment, considering current unit cover and move-up assignments (unlimited).

N/A In the event of greater alarms, unit recommendation must take into account units already assigned, providing the necessary equipment to satisfy the greater alarm requirements.

N/A Unit recommendation criteria must be modifiable on-line at any time.

N/A Standard move-ups must be displayed upon request.

N/A Multiple move-ups can be entered via a single command.

EMS Unit Recommendation

Units must be recommended dynamically using a EMS "run card" using, at a minimum, the following criteria:

N/A Jurisdiction
N/A Incident location
N/A Incident type
N/A Current unit status
N/A Number of units required
N/A Type of units needed
N/A EMS station location

N/A Any number of units can be recommended at a time.

N/A Units shall be recommended according to current EMS station assignment, considering current unit cover and move-up assignments (unlimited).

N/A Fire units that have EMS capacity will be utilized in accordance with their availability and EMS classification.

N/A Unit recommendation criteria must be modifiable on-line at any time.

Dispatch and Control of Units

C Recommended units must be dispatchable with a single keystroke.

C The dispatcher can alter recommended units.

C Recommended units can be selected by mouse reference.

C Units must be able to be assigned to a pending incident directly on the pending incident list, without requesting detailed incident display.

X Units cannot be assigned without initial detailed incident display and review.

C There must be no limit to the number of units, which can be assigned to single incident.

C Any number of incidents must be able to be preassigned to a single unit.

C A unit or units may be assigned via pointing device without keyboard entry.

Status history maintained for each unit must include:

C All status changes
C Current Unit location
C Date/time of all unit status changes, recorded to the nearest second with
A Alarms specified by default or by each dispatcher if desired.

C Timers can be set by type of call or by dispatcher discretion. Officer numbers for each unit assigned

C Officer names for each unit assigned

C Workstation identifier making each status change

C Operator identifier making each status change

C Operator name making each status change

C Each dispatcher can select units displayed.

Required Status Keeping Functions

C Unit status changes shall be entered as single transactions, specifying new status and one or more units.

A Unit status change may be entered by mouse or keystroke, selecting unit and desired status.

C Unit status changes must not require the display of an incident record.

C Comments can be added to any unit status change, and will be recorded with the incident's and unit's permanent record.

A Previous status change commands can be displayed for review and/or correction and reentry by function key request.

C The unit identifier can be entered prior to the status code.

X Status may be able to be entered by referencing the unit display and a status code via pointing device or keyboard.

C The system must support the following incident control and unit status command functions.

C Dispatch one or more units to an incident

C Assign backup units to an incident

C Replace one unit with one or more other units

C Preempt a unit to service a higher priority call

C Place one or more units onscene

C Place a unit available-on-scene (onscene but available for unit recommendation and assignment)

X Place a fire unit available-on-radio or pager

X Place a fire unit available-in-quarters

X Place an EMS unit available-on-radio or pager

X Place an EMS unit available-in-quarters

C Add information to an incident

C Add information to a unit's history record, whether available or assigned to an incident

C Enter pursuit information from several workstations concurrently

C Clear a unit back to service

C Change unit location while still on call

C New unit location may be validated against on-line geofiles

C Reset unit back to incident location without requiring reentry of original location

C Initiate a traffic stop or onview, resulting in an automatic license plate inquiry by the system

C Unit location at a traffic stop is validated against on-line geofiles

C Initiate a subject stop

C Indicate that the personnel are out of vehicle and must be contacted via hand-held radio or other means

C Request initial case number for an incident

C Request additional case numbers for a single incident

C Specify a unit timeout-warning interval

C Change the beat responsibility of a unit

C Place a unit on duty and available for dispatch

C Enter final disposition or incident type

A List all nearby hazards within a specified distance

Unit Definition and Control

C Any combination of up to 5 letters and numbers can be used as unit identifiers.

C Unit type, shift, patrol area or other similar information need not be encoded as part of the structure of the unit ID.

C An on-duty unit's identifier can be changed while keeping a continuous unit history record (does not require units to be logged off duty).

C An on-duty unit's recommendation rules can be changed without requiring unit log off.

Transfer of Unit and Incident Control

C System must have a command allowing designation of a new primary unit on an active call.

C The control of any on-duty unit can be passed from one dispatch position to another, regardless of unit status.

C Any incident can be transferred from one dispatch position to another, regardless of incident status.

C Any dispatcher must be able to "take over" the dispatching and control of any incident at any time from any workstation without interrupting the original dispatcher. **Procedural**

C The dispatcher must be able to assign another dispatcher's unit(s) to any incident. **Procedural**

C In the above case, current unit status information shall be displayed on both the original unit's dispatcher's and the requesting dispatcher's displays.

Out of District Display

C Any dispatcher must be able to display dynamic unit and incident status for any dispatch control area in addition to the areas controlled.

Available and Active Law Enforcement Unit Displays

A dynamic display shall be provided for all units that are available for dispatch, which shows:

C Jurisdiction
C Unit identifier
C Unit assigned but available for dispatch
A Special unit type or classification
A Officers out-of-vehicle (on portable radio)
A Unit scheduled on-duty prior to confirmation of status
X MDT equipment status

A dynamic display shall be provided for all units assigned to incidents, which shows:

C Unit identifier
C Current unit status
X MDT equipment status
C Time since last unit status change
C Incident number
C Incident type and priority
C Incident type description
C Unit beat
C Unit control area
C An indication if the unit is operating out of its normal area
C An indication if the unit was assigned as a backup unit

C A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

C A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented. This warning shall be differentiated from the warning in the previous item.

C Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

C Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active Fire Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

N/A Jurisdiction
N/A Unit identifier
N/A Unit status
N/A Unit station
N/A Unit MDT equipment
N/A Units are ordered by associated station.
N/A Units can be ordered by equipment type.

N/A The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

N/A Jurisdiction
N/A Incident number
N/A Incident type
N/A Current alarm level
N/A Incident working time
N/A Firebox number [or appropriate geographic data]
N/A Incident location

With each active incident, the status monitor must list assigned units, in sequence by alarm level, showing:

N/A Jurisdiction
N/A Unit identifier
N/A Unit status
N/A Time since assignment
N/A Time since last unit status change
N/A Any covering unit
N/A Unit location if different from incident
N/A Notes or comments associated with a unit

N/A Units shall be grouped by priority level at time of assignment.

N/A Unit status monitor displays must be useable by color-blind dispatch operators.

N/A A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

N/A A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

N/A Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

N/A Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Available and Active EMS Unit Displays

A dynamic display shall be provided for units available for dispatch, which shows:

N/A Jurisdiction
N/A Unit identifier
N/A Unit type
N/A Unit status
N/A Unit station
N/A Unit MDT equipment
N/A Units are ordered by associated station.
N/A Units can be ordered by equipment type.

N/A The unit display sequence must be selectable between the above two sequences by operator command.

A dynamic display shall be provided for all active incidents, which shows:

N/A Jurisdiction
N/A Incident number
N/A Incident type
N/A Incident working time
N/A Incident location

With each active incident, the status monitor must list assigned units, in sequence by priority level, showing:

N/A Jurisdiction
N/A Unit identifier
N/A Unit status
N/A Time since assignment
N/A Time since last unit status change
N/A Any covering unit
N/A Unit location if different from incident
N/A Notes or comments associated with a unit

N/A Units shall be grouped by priority level at time of assignment.

N/A Unit status monitor displays must be useable by color-blind dispatch operators.

N/A A warning shall be displayed on the unit status monitor whenever a unit status timeout has occurred.

N/A A warning shall be displayed on the unit status monitor whenever an incident has been changed or supplemented.

N/A Unit status monitor warnings must not require dispatcher action other than normal response to the cause of the warning.

N/A Unit status warnings must not interrupt or affect the normal display of incidents for dispatch.

Incident Record Keeping Requirements

The system must keep date/time stamped records of all incidents passing through the dispatch process. These records shall contain:

C Jurisdiction
C Incident number
C Case number(s)
C Incident location
C Initial and final incident type
C Final disposition
C Time of initiation (time of phone call)
C Time of incident entry
C For each assigned unit, the time of dispatch and all status changes
C All data taken by the call taker
C All information subsequently added
C Name and ID number of personnel in each unit assigned
C Name and ID number of each workstation operator who enters any information or status concerning the incident.

C The system must allow the entry of an unlimited amount of supplementary data about an incident.

C A permanent audit trail must be maintained for all information recorded with an incident, whether or not that information is later modified or deleted.

Assignment of Case Numbers

C A sequence of "case" numbers must be kept independently from the number assigned to each incident and jurisdiction.

C Each agency can have multiple series of case numbers, case number format being determined for each agency by system administrator but case numbers can be automatically assigned by agency and incident type.

C Case numbers shall be assigned to an incident by dispatcher request.

C A single incident can have multiple case numbers.

Incident Record Access

Incident history information shall be displayed or printed in chronological order upon command, based on a search of the file. This search will not interfere in any way with the normal function of the workstation. It must be possible to search the file on any combination of the following criteria:

C Jurisdiction
C Incident number
C Primary case number
C Any secondary case number
C Date and time range
C Incident type
C Incident priority
C Reporting district or box number
C Law Enforcement beat/fire station/EMS district as applicable
C Dispatch control area
C Jurisdiction within an agency
A Initial incident location
C Final incident location
C Any intermediate incident location
C Type of location reported (premise, intersection, place, etc.)
C Primary unit assigned
C Final disposition
C Existence of any case number
C Call entry or dispatch workstation identifier
C Call entry or dispatch operator identifier
C Any telephone number recorded with incident
C Any name recorded with incident
C Any personal distinguishing identifier entered with the incident
C Any vehicle license number recorded with incident
CAny vehicle color or descriptive code recorded with incident

Any operator-selected time range between:

C Incident initiation
C Incident entry
C Initial dispatch
C First unit arrival
C Incident closing

C Incident history inquiries must access pending, active and closed incidents using identical facilities for selection and display.

C All prior calls on file at the specified location can be requested for immediate display.

A All operators who had entered or updated an incident record shall be listed as part of the standard incident display by both operator name and ID.

C All officers who respond to an incident shall be listed as part of the standard incident display.

Unit Record Keeping Requirements

C Jurisdiction

C Officer name and badge number at time of incident.

C The system must maintain all activity by unit identifier, agency, officer name, and badge number at the time of the incident.

C The system shall be able to display a complete sequence of unit activity for any selected shift or time period, regardless of whether such activity was associated with an incident.

C The unit identification can be changed during a unit's shift without affecting the unit's history record.

C The unit's history record must be accessible by the current or any previous unit identification used during the shift.

C The unit's history record must be accessible by the current or any previous officer number assigned.

Closed Incidents

X No incident shall be closed until a call-taker, dispatcher, or supervisor has issued a command to do so.

C Any closed incident can be reopened for further activity, without assigning a new incident number.

Supervisory Status Display

C Dynamic status information from one or more dispatch workstations can be displayed at a supervisory workstation position upon request without affecting the status monitor of that workstation or of any other workstation.

C Supervisory status displays must show the same warnings and indications, such as a unit overdue, incident updated, and so forth, as are displayed on the responsible dispatch workstation.

Street Closure Information

X The system must have the ability to display street closure information upon operator request.

Fire Hydrant Information

N/A The system shall display a list of fire hydrants near any specified incident or unit upon request; the list shall be in order by distance from the specified incident or unit.

N/A The fire hydrant list must show the location, current status, flow and other relevant information.

Mobile Data Terminal (MDT) Interface Functions

The system must allow the following types of transactions to and from Mobile Data Terminals:

C MDT logon with unit number and ID numbers of occupants.

C Auto unit entry into CAD system as in service but not yet available until unit dispatcher places unit in available status.

C MDT logoff and unit removal from CAD system only if a unit is in "available" status.

C Send dispatch orders to MDT.

Accept MDT responses for:

C Acknowledge dispatch order receipt
C En route to dispatch
C At scene
M Available at scene (with comment)
C In service
C Busy (with comment)
C Out of service (with comment)
C Change status of the unit to any valid CAD status

C Accept MDT request for report number on current dispatch and transmit number to MDT.

C Allow MDT to initiate onview and traffic stop. Information on a vehicle to submit auto queries to ACIC/NCIC system.

C Allow MDT to attach responses from ACIC/NCIC system to incident displayed.

C Allow MDT to run full ACIC/NCIC queries through formatted screens.

C Allow MDT to send messages to dispatcher or other MDT's.

C Support MDT emergency button to notify the dispatcher of a peril via a single keystroke.

Notify MDT of changes in dispatch including:

C Change in dispatch data, status, or comments
A Cancel from dispatch

C Send premise data, HazMat information, hydrant locations, and officer safety alerts to MDT along with dispatch orders, based on user-defined criteria and type of unit.

C Allow MDT to request static status of individual or group of units via command. supervisory function.

C Differentiate a unit with MDT from non-MDT unit on dispatcher status monitor and working screen.

C Allow MDT to add comment to working CAD incident.

C Allow MDT to enter disposition for current dispatch.

C Allow commands to resend MDT dispatch to terminal without updating time stamps in the event the unit did not get clean data the first time.

C Have system automatically send MDT dispatch orders through standard dispatch command without requiring a dispatcher to know if a unit has a MDT or use different command to dispatch to it.

C Allow MDT to make CAD history inquiries such as unit history, dispatch history, address history, and any other standard online query to CAD system such as premise data, notes file, etc.

C System must automatically format data sent to MDT to fit the screen on MDT.

C System must allow a CAD command, which will resync MDT availability (Logon status) after prolonged down time. Such command should poll the MDT controller to find out which units are logged in.

C System must provide MDT security whereby user and/or MDT terminal ID may restrict specific commands.

C System must disallow MDT commands from any MDT, which is not correctly logged into dispatch system.

General System Functional Requirements

This sub-section addresses certain general functional requirements, which are not conveniently grouped as Call Taking or Dispatching functions above.

Multiple Agencies

For both present requirements and future flexibility, the system shall support multiple jurisdictions and multiple agencies. This means that the system must accommodate at least the following facilities:

A Routing of calls to appropriate dispatcher according to jurisdiction and agency.
A Duplicate street names, distinguished by city name and/or postdirection and/or jurisdiction.
A Independent incident numbering systems by jurisdiction and agency
A Summary and management reporting by jurisdiction and agency

Security

C System shall provide method for dispatcher to change assignment (such as shift change, etc) without logging out.

C Operator sign-on shall require the entry of both an operator identification code and a private password.

C The password must not appear when entered.

C A record of invalid password attempts shall be recorded after a preset number of allowable retries.

C Transaction security can be limited by workstation type or location, in addition to operator password. **Procedurally, not done.**

X The acceptance of user sign-on must result in the screen being displayed with the user-selected colors and layout.

On-Line Help

C The system must support on-line "help" for every field in every formatted input transaction. This must include local incident entry, update and database transactions, and remote system interface transactions.

C Help" information must be available for dispatcher commands.

C The request for "help" information shall be entered by function key without affecting the contents of the field for which the information is requested.

C The "help" information must be maintainable on-line.

System Notepad

C A system-wide notepad shall be provided which all operators can access. The function of this notepad is to provide quick access to information such as telephone numbers and addresses. The format should include a forty- (40) character description, unlimited text, and a date/time update stamp for initial entry and record changes.

Alarm Database

C The system shall include an alarm database, maintainable by the dispatch staff, providing easy entry/access of alarm activations.

User Messaging facility

C The system shall include the ability for an operator to send a message to another operator. Mobile Data Terminal operators shall also have this functionality. Logging of MDT messages shall be optional system wide.

Online medical expert system

N/A The system shall provide online access to an EMD system, which prompts the operator with questions in a "tree structure" format to assist the operator in providing emergency medical information to callers.

Screen Printing

C The operator must be able to print the contents of the workstation screen or status monitor at any time by function key request or command line.

C An entire incident, which includes all appropriate screens, can be printed by a single command regardless of the screen currently displayed.

C Whenever a complete message is printed, it shall be reformatted to cause page numbering, page breaks, and column headers at the beginning of each printed page (typically 60 lines).

Message Control

Messages displayed in response to local or remote inquiries shall be displayed to the operator using a method to allow rapid and understandable review. These functions shall include:

C Page forward to next page
C Page backward to previous page Scroll upwards or downwards by single line
C Scroll upwards or downwards via scroll bars Go directly to first page of message
C Go directly to last page of message
C At least 12 lines of message text can be displayed at a single time.
C Outbound messages must contain requesting unit's ID and display in incoming return in order of time received.
X The number of displayed lines must be able to be adjusted by the individual workstation operator. Any message page displayed can be permanently attached to an incident or unit history record.
C Messages must be displayed in sequential order of receipt.

Ease of Use

A Menus shall be supported as a training aid but shall not be required for system operation.

A Each workstation position must be capable of displaying at least 24 lines of information at one time. "Windows" shall be available for special functions, and can be scrolled up/down and left/right as needed.

C In the event of concurrent update or display on the dispatcher's input screen, no data or keystrokes being entered by the operator must ever be lost or skipped.

C At any time, the dispatcher must be able to redisplay any recent command entered on the workstation, and then alter and re-enter the command if needed.

C Data entry into input forms at the dispatch workstation can be interrupted with a single keystroke or mouse action to allow entry of unit status change or information command (command line).

C After a command is entered, processing can resume at the original input form with another single keystroke or mouse action, with the input cursor at the original location in the data form.

Date and Time Display

C Each position's display screen should show the current date and time at all times.

Data Base Access

C Access to ACIC/NCIC system may utilize fill-in-the-blanks input forms and/or command line query.

C Certain types of officer activity will generate a query to offline databases.

X The format of input forms must be maintainable on-line without requiring programming experience.

X Standard message reformatting logic must be maintainable on-line without requiring programming experience.

X Context-sensitive "help" information may be available for each field in these input forms.

X Help" information must be available at a high level, which provides general information about the transaction.

X “Help" information must be available by function key request.

X Help" requests must not alter the input field.

X Help" requests must list all valid data for edited fields.

X The operator must be able to select the desired field data from the information displayed, with the field automatically updated.

X "Help" information must be maintainable on-line.

Provisions of NFPA 1221 and CALEA

Annex D Computer-Aided Dispatching (CAD) Systems

D.1 The CAD system should provide automated decision-support aids to telecommunicators by organizing and managing the real-time processing of informational items belonging to the following classes:

1. Alarms, including other requests for service
2. Incidents and events
3. Resources utilized by the communications center
4. Other classes, as directed by the authority having jurisdiction

D.1.1 Each item should have the following characteristics:

1. Unique identifier
2. Status
3. Location
4. Description
5. Relationship to other items
6. Other characteristics, as directed by the authority having jurisdiction

D.1.1.1 Alarm times should, as a minimum, also include the following characteristics:

1. Source
2. Priority
3. Type

D.1.1.2 Incident items should, as a minimum, also include the following characteristics:

1. Incident management structure
2. Evidentiary information

D.1.1.3 Resource items should, as a minimum, also include the following characteristics:

1. Capabilities
2. Authorizations
3. Assignments

4. Activities

D.2 The CAD system should archive items in a records management system for later retrieval, analysis, and reporting.

D.3 The CAD system should record a history (audit trail) of the following actions taken with the items:

1. Creation
2. Change, including modification, deletion, or supplementation
3. Disposition, including close-out, archiving, and transfer

D.3.1 Each entry in the history should include the following:

1. Coordinated universal time (UTC) of action
2. Identification of the individual performing the action
3. Effects of action on the characteristics of the items

D.4 The automated exchange of digital information related to alarm objects between the communications center and external systems should be accomplished in accordance with standards published by the National Emergency Numbering Association (NENA) and the Association of Law Enforcement Communications Officials, International (APCO).

The automated exchange of digital information between communications centers should be accomplished in accordance with standards published by APCO.

The automated exchange of information between communications center and transportation information systems should be accomplished in accordance with standards registered with the Intelligent Transportation Systems (ITS) Data Registry.

D.5 Reference Material

D.5.1 APCO Project 36 addresses standard format and content requirements that apply to information exchanged between CAD systems.

APCO International, Ind., World Headquarters, 351 N. Williamson Blvd., Daytona Beach, FL 32114-1112; (904) 322-2500, (888) 272-6911; Fax (904) 322-2501.

D.5.2 NENA Standard 02-010 addresses standard format and content requirements that apply to information exchanged with 9-1-1 databases.

National Emergency Number Association, 4350 North Fairfax Drive, Suite 750, Arlington, VA 22203-1695; (800) 332-3911; (614) 741-2080; Fax (614) 933-0911.

D.5.3 Intelligent Transportation Systems Data Registry includes standards with standard format and content requirements that apply to information exchanged with transportation information systems.

Institute of Electrical and Electronics Engineers, ITS Data Registrar, P.O. Box 1331, Piscataway, NJ 08855-1331; (732) 981-0060; Fax (732) 981-1721.

4. Documentation Provided
   - 001220Coverage.ppt
   - Pima County Frequencies.xls
   - Site Survey Schedule – Final Ver 2.0.xls
   - IPMN system diagram.doc
   - Pima County Regional Radio System Repeater Sites.xls
   - Telephone Stats 2005.xls
   - Lat-Long.doc
   - 311 Dec05LGR.xls
   - MicrowaveSiteListBySiteName.doc
   - 311 Stats.mbd
   - System Layout.doc
   - 311Nov04LGR.xls
   - T1-Rev4-01 Model (1).pdf
   - Telephone Stats FY0304.xls
   - T1-Rev4-02 Model (1).pdf
   - 2005 Pima County Emergency Response & Recovery Plan.doc
   - Tucson Final.pdf
   - 2000 census demographics.pdf
   - Voterchk.xls
   - Pima County Population Primer.doc
   - Props-11-17-00.ppt
   - Site photos
   - Publicsafetyprops.ppt
   - RNCQuantar_MDT.xls
   - Site Summary PCWIN.xls
   - TX FD.doc
   - TX PD.doc
   - FCC Lic Update 2-28-06.pdf
   - Coverage Maps
   - Mobile and Portables chart
   - Network chart
   - WAN Network fiber map

- Law Enforcement Frequency bands
- Radio Station frequencies
- Number of Radio Users
- Channelization Plan
- Corrections Organizational Chart
- Radio System Coverage maps
- Sheriff's Dept. Organizational Chart
- Telephone Stats FY0304.xls
- Staffing levels for Corrections Positions
- Telephone Stats2005.xls
- Corrections Facility Map
- 311Dec05LGR.xls
- 2 Mile Grid map
- Pima County Sheriff Department Communications Unit Operations Guidelines
- 311 stats.mbd
- Needs and wants for facility
- 311Nov04LGR.xls

TABLE 3.3.1A
Pima County Sheriff's Department

DESIGNATOR NO.	ATTRIBUTE	RANK (0 - 5)	COMMENTS
Sufficient Capacity			
1	Dispatch Center Size	4.0	While operations can be conducted with less than adequate space, a comfortable facility with sufficient space helps with employee satisfaction and retention.
2	Dispatch Center Staff	5.0	
3	Technology	4.0	evolution without being on the bleeding edge.
Environment			
4	Light	3.0	Relates more to employee satisfaction and retention than to the operations mission.
5	Temperature and Air Control	3.0	Relates more to employee satisfaction and retention than to the operations mission.
6	Cleanliness	3.0	
7	Furniture	3.0	
8	Technical	4.0	
9	External Facilities	3.0	
10	Internal Facilities	3.0	An emergency bathroom on the operations floor might be desired. Every phone extension on the operations floor should be recorded. This should be an option for the administrative office telephone extensions.
Effectiveness			
11	Radio System	5.0	
12	Console	4.0	
13	Computer Aided Dispatch (CAD)	5.0	be suggested between CAD and a radio system. AVL and mobile data is important.
14	Telephone	5.0	
15	Interoperability with Other Agencies	3.0	
Technology			
16	Reliability	5.0	
17	Maintenance	5.0	
18	Back-Up	4.0	having a well defined disaster recovery plan.

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.3.2 Pima County Sheriff's Department - Ajo

A. Current Environment

1. Operational

The PCSO Ajo Dispatch functions as the 9-1-1 Public Safety Answering Point and dispatch center for the Ajo division of the PSCO. In addition to dispatching the Ajo District Sheriff's personnel, the Ajo communications Center also dispatches the Why and Ajo Fire Departments as well as the Ajo Ambulance. The Ajo District operates an "Are You OK" system which dials subscribers at a predetermined time. They also do screening for the on-call physician's phone calls after hours, and provide dispatch and paging services for Pima County Department of Transportation and Animal Control (after hours). In addition to dispatch, the dispatcher on duty also handles walk-in traffic at the front desk.

The district's authorized staff consists of 3 sergeants, 14 deputies, 1 corrections sergeant, 6 corrections officers, 1 telecommunicator supervisor, 5 telecommunicators, a public safety support specialist, and the Sheriff's Auxiliary Volunteers, all supervised by the District Commander.

2. Functional

The Ajo District of the Pima County Sheriff's Department covers that portion of Pima County west of the Tohono O'Odham Nation. The Ajo District encompasses approximately 5,000 square miles. It starts at the eastern boundary of the Tohono O'Odham Indian Reservation and continues west across the Cabeza Prieta Refuge to the Yuma County line. The northern boundary starts at the Maricopa County line and continues south to the Mexican border.

Parts of the Barry Goldwater Military Range, the Organ Pipe National Monument, and vast tracts of Bureau of Land Management rangeland lie within the Ajo District boundaries. The District office is located in the community of Ajo, 138 miles west of Tucson at the end of SR86 and approximately 100 miles south of Phoenix along SR85. The center receives wireless 911 calls from the Quijotoa Mountains westward. The area includes a large portion of the Tohono O'Odham Nation

Activity	2003	2004	2005
Wireline 911 Calls Received	**399**	**498**	**569**
Wireless 911 Calls Received	**0**	**291**	**979**
Total 911 Calls Received	**399**	**789**	**1448**
Wireless Call %	**0**	**36%**	**68%**
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched	**Integrated with PCSO Statistics**		
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages	**275**	**396**	**301**
Total CJIS			

3. Technical

The Ajo dispatch is a two position dispatch center. One of those positions is the supervisor's desk and is not equipped with a full radio console. The primary position is equipped with an EF Johnson "Tracer" model console. The County's Spillman CAD system is used and they also use Positron 911 equipment. There are two enhanced 911 trunks and 1 basic 911 backup trunk. Tabletop Telephone Company is the 911 service provider. There are five administrative lines.

The Department utilizes CDMA services provided by Alltel for its mobile data computer fleet. Cellular services are available in Ajo, but the coverage area is not known. The Department has not chosen to implement mobile data computers in Western Pima County at this time.

The EF Johnson Tracer Console utilizes a DOS based program and the IDC card interfacing the console to the switch requires an ISO slot on the motherboard. These are only available in older PC motherboards.

There are frequent outages that isolate Ajo from the rest of the county. Cell phones do not work in the dispatch center. They also have to go outside of the building in order to use the satellite telephone.

In order to tell if the generator is operating on Childs Mountain, the primary transmitter site for the area, the radio technician has installed a blue light aimed at the dispatch center. The dispatcher can step outside to see if the light is on and know that the generator is running.

B. Positive Attributes of Current Environment

1. Operational

The PCSO Ajo Dispatch is patrol of the Operations Bureau rather than the Administrative Bureaus. This allows the dispatch staff to maintain a closer relationship with the other members of the AJO Division. Because of its location, they maintain a close relationship with the various federal agencies in the area.

2. Functional

The service area is very large, but it is sparsely populated. This allows a relatively small staff to provide service effectively.

3. Technical

By using the same computer system and radio system as the rest of the Pima County Sheriff's Department, the department personnel are able to interoperate relatively easily.

C. Desired Attributes of Current and Future Environment

1. Operational

At times, because of walk-in traffic and so forth additional help is needed.

2. Functional

There is a need for the Ajo area to be addressed and for those addresses to be integrated into the Master Street Address Guide (MSAG). At the same time the County Assessors mapping needs to be updated to be compatible with the MSAG.

3. Technical

There is a need for the dispatch center to be reconfigured and enlarged in order to make the workspace more efficient as well as to be able to accommodate the use of computers in the dispatch center.

The availability of MDT service would be beneficial.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	-	**Pima County Sheriff Ajo District Dispatch**
File Name:	-	**PIMA SO - AJO Dispatch - Final.doc**
Date of Interview:	-	**March 2, 2006**
Location of Interview:	-	**1249 Well Road, Ajo, AZ**
Persons Interviewed:	-	**Irene Galvez, Dispatch Supervisor** **Steve Monreal, Dispatcher**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Ajo District of the Pima County Sheriff's Department covers that portion of Pima County west of the Tohono O'Odham Nation. The Ajo District encompasses approximately 5,000 square miles. It starts at the eastern boundary of the Tohono O'Odham Indian Reservation and continues west across the Cabeza Prieta Refuge to the Yuma County line. The northern boundary starts at the Maricopa County line and continues south to the Mexican border. Parts of the Barry Goldwater Military Range, the Organ Pipe National Monument, and vast tracts of Bureau of Land Management rangeland lie within the Ajo District boundaries. The District office is located in the community of Ajo, 138 miles west of Tucson at the end of SR86 and approximately 100 miles south of Phoenix along SR85.

Present Situation

1. The district's authorized staff consists of 3 sergeants, 14 deputies, 1 corrections sergeant, 6 corrections officers, 1 telecommunicator supervisor, 5 telecommunicators, a public safety support specialist, and the Sheriff's Auxiliary Volunteers, all supervised by the District Commander.

2. In addition to dispatching the Ajo District Sheriff's personnel, the Ajo communications Center also dispatches the Why and Ajo Fire Departments as well as the Ajo Ambulance and provides dispatch and paging services for Pima County Department of Transportation and Animal Control (after hours).

3. The Ajo dispatch is a two position dispatch center. One of those positions is the supervisor's desk and is not equipped with a full radio console. The primary position is equipped with an EF Johnson "Tracer" model console. The County's Spillman CAD system is used and they also use Positron 911 equipment. There are two enhanced 911 trunks and 1 basic 911 backup trunk. Tabletop Telephone Company is the 911 service provider. There are five administrative lines. The center receives wireless 911 calls from the Quijotoa Mountains westward. The area includes a large portion of the Tohono O'Odham Nation.

4. The Ajo District operates an "Are You OK" system which dials subscribers at a predetermined time. They also do screening for the on-call physician's phone calls after hours.

Present Problems

1. The Sheriff's dispatch center in Tucson is part of the Administrative Bureau while the Ajo dispatch is part of the Operations Bureau. In addition to dispatch, the dispatcher on duty also handles walk-in traffic at the front desk. The work area is not comfortable. Cable management is an issue. The consoles are using a slow (286) computer chip. The EF Johnson Tracer Console utilizes a DOS based program and the IDC card interfacing the console to the switch requires an ISO slot on the motherboard. These are only available in older PC motherboards.

2. There are frequent outages that isolate Ajo from the rest of the county. Cell phones do not work in the dispatch center. They also have to go outside of the building in order to use the satellite telephone.

3. There is no back-up for the center, except for limited back-up in the mobile command post. The alarms for the radio system are in the equipment room and aren't monitored by the dispatcher. In order to tell if the generator is operating on Childs Mountain, the primary transmitter site for the area, the radio technician has installed a blue light aimed at the dispatch center. The dispatcher can step outside to see if the light is on and know that the generator is running.

4. The Department utilizes CDMA services provided by Alltel for its mobile data computer fleet. Cellular services are available in Ajo, but the coverage area is not known. The Department has not chosen to implement mobile data computers in Western Pima County at this time.

The draft of this record was sent to Irene Galvez on March 28, 2006.

Corrected draft was returned to CTA Communications on March 31, 2006.

Interviewee Name & Address:

Irene Galvez
Dispatch Supervisor
Pima County Sheriff's Department
1750 E. Benson Hwy.
Tucson, AZ 85714

M:\FILES\20099 Pima County, AZ\20099A - Business Architecture Planning\interview\Final\PIMA SO - AJO Dispatch - Final.doc

2. Dispatch Center Survey

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

2/2

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: PCSO - AJD

Contact Name: _____ **Position:** _____

Phone: _____ **Email:** _____

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement 1 Combined Fire/EMS N/A

Fire only (~~paid~~/volunteer) 2 Emergency Medical Services (EMS) 1

Other: _____

Please list the agencies and describe the geographic area served by your communications center

PIMA COUNTY SHERIFF'S DEPT, AJO FIRE DEPT, WHY FIRE DEPT
AJO AMBULANCE.
PRIMARY AREA IS PIMA COUNTY WEST OF THE TOHONO O'ODHAM NATION WITH SECONDARY COVERAGE INTO THE WESTERN HALF OF THE TOHONO O'ODHAM NATION.

911 Services Provided:

Primary PSAP ✓ Secondary PSAP ___

Basic 911 ___ Enhanced 911 ✓ Wireless Phase I ✓ Wireless Phase II ✓

VOIP 911 ___

Page 1 of 6

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 2

How many positions does your PSAP have that can answer 911 calls but not dispatch? 0

How many positions does your PSAP have that can dispatch but not answer 911 calls? 0

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received			
Wireless Call %			
Average 911 Answer Time			
Other Emergency Calls Received			
Administrative/Non-Emergency Calls			
Total Incoming Calls			
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched			
Emergency Medical Incidents			
Medical Pre-Arrival Instructions Given	0	0	0
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages	275	396	301

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) ✓

Call Answering (administrative) ✓

Call Answering (Other) (i.e. after hours, etc.) ✓

Traffic Monitoring ✓

Dispatch Police/Law Enforcement ✓

Dispatch Fire ✓

Dispatch EMS ✓

Dispatch City/County Services/DPW ✓

Warrant/Article Entry/Confirm ✓

NCIC/state CIC checks ✓

Dispatch Animal Control ✓

Other tasks performed:

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch	POSITRON	LIFELINE 100		
Answering Position Equipment	POSITRON	SIMON		2/2003
Map	PLANT	ORION		
CAD	SPILLMAN	SUMMIT	4.0	11/11/2005
Radio Console	EF JOHNSON	TRACER		11/1999
UPS	APC	RS 1500		12/2005
Instant Recall Recorder	EVENTIDE	VR240		7/2001
Logging Recorder	SAA	SAA		SAA
PBX				
Master Clock				

9-1-1 System

Number of 911 lines 2 ENHANCED TRUNKS 1 BASIC 911 BACKUP

Number of other lines 5 ADMINSTRATIVE TRUNKS

ANI & ALI printers – number & location 1 IN COMMUNICATIONS

Abandoned call alarm NONE

Single Button Transfers 3

Ring down circuits NONE

Telephone Service Provider TRUNKS LEASED FROM TABLETOP TELEPHONE

911 Service Provider QWEST

ALI Database Provider INTRADO

Is 9-1-1 Equipment 20 digit ANI capable (YES) NO

Can 9-1-1 Equipment "rebid" ALI (YES) NO

CAD System

Redundant processor Y/N?

911 interface Y/N? NO

RMS interface Y/N? YES

NCIC/State interface Y/N? YES

Mobile Data & AVL Y/N? NOT AVAILABLE IN DISTRICT

Logging Recorder

Channel Capacity 8

Recording format (tape, DAT, VHS, etc.) DIGITAL / ARCHIVE ON DVD-RAM

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift			1	1
Afternoon Shift			1	
Night Shift			1	

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	5	0	0	0	0	0	1
Actual FT	5	0	0	0	0	0	1
Authorized Part Time	0	0	0	0	0	0	0
Actual Part Time	0	0	0	0	0	0	0

OTHER SYSTEMS

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

PATROL 1 — VHF INTERAGENCY

PATROL 2

HIGHWAY C/C

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

CID — ALLIANCE (VHF)

BANN

COUNTY 1

Page 5 of 6

What agencies do you need to communicate with but cannot?

UNITED STATES BORDER PATROL — CUSTOMS ENFORCEMENT

NATIONAL PARK SERVICE

BUREAU OF LAND MANAGEMENT

AZ DEPT OF PUBLIC SAFETY

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

NEED INTEROPERABILITY WITH FEDERAL AND STATE AGENCIES WHICH OPERATE ON VHF AND UHF BANDS.
SINGLE REPEATER SITE DOES NOT PROVIDE COMPLETE COVERAGE THROUGH THE AZ 85 CORRIDOR AND INTO VARIED RURAL AREAS DUE TO AREA GEOGRAPHY.
CURRENTLY CPU BUS SPEEDS HAVE PROBLEMS DURING FREQUENCY CROSS PATCHING AND USE OF ENCRYPTION

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

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3. Computer System Checklist – Dispatching Operations

None.

4. Documentation Provided

- Sheriff's Department Organizational Chart

TABLE 3.3.2A
Pima County Sheriff's Department - AJO

	ATTRIBUTE	Pima County SD-AJO
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.3.3 Pima County OEM & Homeland Security

A. Current Environment

1. Operational

The Office is organized under the Pima County Health Department. The EOC is activated by any significant event such as wild land fires, floods, search and rescue, or disease outbreak. The EOC can also be activated by request of the Board of Supervisors.

The Office has seven (7) full-time, Pima County, and five (5) grant funded employees; and many volunteers are used throughout the programs and responses. The Tohono O'odham Nation has one appointee representative; Tucson Fire Department has appointed a Deputy Chief; and the area Law Enforcement agencies have appointed representatives

The EOC staff is paged when needed. The Pima County Sheriff Office dispatch has the pagers (telephone) and on-call lists. The RACES/HAM volunteers use a call-up system that they operate independently and are readily available during activations. Arizona Power Services also provides a paging and e-mail capability.

2. Functional

The functions of the Office are to act as the local program for the Federal Emergency Management Agency (FEMA). The general tasks are to insure that the community is prepared to respond to natural, technological, and human caused disasters and emergencies. It performs this through mitigation, preparation, response, and recovery activities.

The Office operates the Emergency Operations Center (EOC) which is located at the W. Congress location.

The Office creates and maintains the existing emergency operations plan that describes specific roles and actions for emergency response agencies, organizations and all volunteers.

Prepares and conducts disaster drills for the County and the cities' departments/agencies to test their plans.

Coordinates training programs on the Incident Command System, Emergency Planning for Schools, the Pima County Emergency Operations Plan, and emergency management for fire fighters, health care providers, law enforcement officers, government officials, department/agency directors, and volunteer organizations (i.e., R.A.C.E.S., American Red Cross, Salvation Army.

Coordinates the Local Emergency Planning Committee (LEPC) under which private businesses and government agencies must report all hazardous materials to the Tucson-Pima County Office of Emergency Management (OEM). This ensures that the businesses and agencies have an emergency contingency plan, determines the remedial actions for a spill or release and identifies the need for community education. The public also calls the OEM for information regarding hazardous materials used, stored or transported within Pima County.

The majority of the response activities are for wild land fires, floods and search and rescue operations. The County uses a North and a South HAZMAT Team for these responses.

The Office programs four (4) full scale exercises per year. During these exercises the agencies are working out their communication problems. The Office also conducts table top exercises and completely follows the Dept. of Homeland Security exercise model for the number and type of exercises for the community.

3. Technical

The Office currently has several vehicles. They are as follows:

- A Communications Van (1982) equipped with all radios as well as RACES, HAM, and aircraft radios, an AC-1000 and is equipped for VOIP communications
- Office Mini Van
- Suburban, which is used to pull the communications trailer – equipped with multiple radios
- F350, which is used to pull the generator trailer – equipped with multiple radios
- 40' RV Mobile Command Post
- The vehicles are equipped with Arizona State radios as well.

The Office has multiple radios installed in the W. Congress location. They are as follows:

- Kenwood SP-820 – mobile, desk-top mounted
- Kenwood TS – 820 – mobile, desk-top mounted
- Kenwood TS – 2000 – mobile, desk-top mounted
- Alinco OR – 605 – mobile, desk-top mounted
- APS Astro – mobile, desk-top mounted
- Yeasu FT – 2500M – mobile, desk-top mounted
- TFT EAS 930A – Base station
- HT1000 – Portable mounted in desk charger
- An Arizona Power Services (APS) Open Sky mobile is coming soon.

The antennas are variously located on the roof and throughout the building. There is a weather station located in the Office that also has roof mounted antennas.

4. Interoperability

The entire focus of this operation is interoperability. The radios in use are solely for that purpose. Any changes in the community's radio system must be reflected in the OEM equipment as well. State and APS radios are currently being deployed; however, all State and Federal agency changes must be tracked and adapted to as well. The Office does have access to the County's "Gateway" radio for interoperability.

B. Positive Attributes of Current Environment

1. Operational

A strong sense of volunteerism is what makes the OEM network operational. The HAM/RACES volunteers are the back-bone of the system in a deployment. All of the employees are dedicated and have an equally strong sense of mission and believe in their place in the community.

2. Functional

The operation has the full cooperation of the various agencies and companies that it uses to perform its tasks. Many of the coordination tasks are reliant on agency cooperation.

3. Technical

The operation is making the best use of what is best described as aged equipment and vehicles. The EOC space is dual purpose allowing public meetings, etc. The staff takes extra effort to accommodate these dual functions when possible.

C. Desired Attributes of Current and Future Environment

1. Operational

It is expected that volunteer will continue to fulfill the needs of the operation during emergencies. All efforts should be made to continue the grant funding of these employees, otherwise the short fall will negatively impact the County's operation.

2. Functional

More room than the current 1300 square feet is needed in an EOC for a community of this size and complexity. Office and equipment space is at a minimum and the space that was adapted is not designed for EOC operations. There are no viable "break-out areas" and no provision for a Joint Information Center.

3. Technical

A new EOC space is required. This space should have the following characteristics:

The space should be designed for EOC operations with raised or access flooring and under floor cabling.

The space should encompass adequate office, equipment, and storage space. The design should provide for antennas access, cabling raceways and conduit paths. Emergency power and environmental controls are also required.

The floor plan of the EOC should be designed and sized to accommodate the following organizations and groups:

- Policy Section: eight (8) designated individuals - minimum
- Joint Information Center (JIC): Variable

- Operations Section: twenty three (23) designated individuals – this section includes private utilities and if needed the Department of Defense staff or National Guard
- Planning Section: 7 designated individuals
- Logistics Section: 14 designated individuals

Total: 52 plus for EOC, including the Policy Group and an unknown number for the JIC.

The design should allow for adequate sleeping and eating facilities for long term activations.

The Policy Section and the JIC should be separate from the main areas. At least four (4) break out areas should be planned.

The equipment should be sized to fit the design, with telephone and LAN connections for each position and section. Specific equipment needs are as follows:

- Standalone PBX and/or telephone capacity
- LAN inside the Office and EOC that connects to the internet and local networks
- Intelligent Highway System display videos
- Graphic text scrolling display controlled by the internal LAN
- Video conferencing capabilities
- Satellite connections to the State and Federal Emergency Management Agencies
- Video control of County observation video equipment
- Weather Satellite information
- Twenty (20) satellite telephones

The EOC should be equipped with external media plug in connections to allow press access without disrupting the EOC operations.

The existing Vehicle fleet is aged. Reliability is current however maintenance, parts, and etc. are beginning to be problematic.

4. Interoperability Matrix

TABLE 3.3.3A shows the direct interoperability requirements with other agencies for the department.

5. Attributes Matrix

Please refer to TABLE 3.3.3B, a summary of system attributes that may be emphasized in a PCWIN regional communications system.

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	Pima County Office of Emergency Management and Homeland Security
File Name:	Pima County EmergencyManagement Interview Record Final.doc
Date of Interview:	February 22, 2006
Location of Interview:	Emergency Operations Office 150 W. Congress
Persons Interviewed:	Kerry Reeve, Homeland Security Manager Robert Lutgendorf, Planning Administrator
CTA Interviewers:	CS Giggetts, KA Ballard, JM Dye

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The functions of the Office are to act as the County program for Emergency Management Activities. The general tasks are to insure that the community is prepared to respond to natural, technological, and human caused disasters and emergencies. It performs this through mitigation, preparedness, response, and recovery activities.

2. The Office operates the Emergency Operations Center (EOC) which is located at the W. Congress location.

3. The Office creates and maintains the existing emergency operations plans that describes specific roles and actions for County emergency response agencies, assists other organizations and all volunteers programs in plan development and response actions.

4. The office is responsible for Exercise Design, Development and Execution for the County. The office will support other cities, departments and agencies in the exercise design and execution process after Action Reports and Improvement Plans.

5. Coordinates training programs on the Incident Command System, Emergency Planning for Schools, the Pima County Emergency Operations Plan, and emergency management for fire fighters, health care providers, law enforcement officers, government officials, department/agency directors, and volunteer organizations (i.e., R.A.C.E.S., American Red Cross, Salvation Army. Coordinates all training of FEMA, Arizona Division of Emergency Management and the office of Domestic Preparedness courses. These courses range in length from eight (8) hours to two (2) weeks in length.

6. Coordinates the Local Emergency Planning Committee (LEPC) under which private businesses and government agencies must report all hazardous materials to the Tucson-Pima County Office of Emergency Management and Homeland Security (OEM). This ensures that the businesses and agencies have an emergency contingency plan, determines the remedial actions for a spill or release and identifies the need for community education. This is in compliance with SARA Title III requirements. The public also calls the OEM for information regarding hazardous materials used, stored or transported within Pima County.

7. The County uses a North and a South HAZMAT Team for responses to hazardous materials events. There is an Intergovernmental agreement in place to support response activities anywhere within the County and any cities, towns and unincorporated areas.

<u>Present Situation</u>

1. The Office is organized under the Pima County Health Department.

2. The Office has seven (7) full time personnel, Pima County provides for two (2) FTE's and five (5) FTE's are grant funded employees. The office has many volunteers that are used throughout the programs, and for responses.

3. The majority of the response activities are in support of wild land fires, floods and search and rescue operations, SWAT operations, planned demonstrations, and exercises.

4. The Office executes on average four (4) full scale exercises per year and six (6) Table top exercises per year. During these exercises the agencies are testing their communication plans where Interoperability of the Emergency Support Functions and other plan items are validated. The Office follows the Dept. of Homeland Security exercise and evaluation program which provides the guidelines and different types of exercises that will be used to support the community in its preparedness activities.

5. The Office currently has several vehicles: They are as follows:

   - A Communications Van (1982) equipped with all radios as well as RACES, HAM, and aircraft radios, an AC-1000 and is equipped for VOIP communications
   - Office Mini Van
   - Suburban, which is used to pull the communications trailer – equipped with multiple radios
   - F350, which is used to pull the generator trailer – equipped with multiple radios
   - 40' RV Mobile Command Post
   - The vehicles are equipped with Arizona State radios as well.

6. The Office has multiple radios installed in the W. Congress location. They are as follows:

   - Kenwood SP-820 – mobile, desk-top mounted
   - Kenwood TS – 820 – mobile, desk-top mounted
   - Kenwood TS – 2000 – mobile, desk-top mounted
   - Alinco OR – 605 – mobile, desk-top mounted
   - APS Astro – mobile, desk-top mounted
   - Yeasu FT – 2500M – mobile, desk-top mounted
   - TFT EAS 930A – Base station
   - HT1000 – Portable mounted in desk charger
   - An Arizona Power Services (APS) Open Sky mobile is coming soon.

   The Office has access to the County's "Gateway" radio for interoperability.
   The antennas are variously located on the roof and throughout the building. There is a weather station located in the Office that also has roof mounted antennas.

7. The EOC is activated by any significant event such as wild land fires, floods, search and rescue, or disease outbreak. The EOC can also be activated by request of the Board of Supervisors, an Incident Commander or other Senior Elected Official of a City, Town, Nation or Tribe upon request to the chairperson of the Board of Supervisors.

8. The EOC is staffed by the seven (7) full time employees who are paged when needed. The Pima County Sheriff Office dispatch has the pagers (telephone) and on-call lists. The RACES/HAM volunteers use a call-up system that they operate independently and are readily available during activations. Arizona Power Services also provides an 800 mhz radio system which connects the EOC with other EOC's in the state.

Present Problems

1. The existing Vehicle fleet is a mixture in age with four of the vehicles being 2002 or newer models.

2. The EOC facility is a multi use area with various Emergency Management committee meetings being scheduled in the center. The EOC also serves as a training facility for emergency management activities and courses for first responders.

3. More room than the current 1300 square feet are needed in an EOC for a community of this size and complexity. Office and equipment space is at a minimum and the space that was adapted is not designed for EOC operations.

4. There is no viable "break-out areas" and no provision for a Joint Information Center attached to the EOC.

Future Requirements

1. A new space designed for EOC operations with raised or access flooring and under floor cabling.

2. The space should encompass adequate office, equipment, and storage space. The design should provide for antennas access, cabling raceways and conduit paths. Emergency power and environmental controls are also required.

3. The floor plan of the EOC should be designed and sized to accommodate the following organizations and groups:

   - Policy Section: eight (8) designated individuals - minimum
   - Joint Information Center (JIC): Variable
   - Operations Section: twenty three (23) designated individuals – this section includes private utilities and if needed the Department of Defense staff or National Guard
   - Planning Section: 7 designated individuals
   - Logistics Section: 14 designated individuals

   Total: 52 plus for EOC, including the Policy Group and an unknown number for the JIC.

4. The design should allow for adequate sleeping and eating facilities for long term extended operational activations.

5. The Policy Section and the JIC should be separate from the main areas. At least four (4) break out areas should be planned to provide for the Operations, Planning, Administration/Finance and Logistics Sections.

6. The equipment should be sized to fit the design, with telephone and LAN connections for each position and section. Specific equipment needs are as follows:

   - Individual laptop computers for each position
   - Video Downlink capabilities for Law Enforcement
   - Standalone PBX and/or telephone capacity
   - Five (5) hardware satellite phones
   - LAN inside the Office and EOC that connects to the internet and local networks
   - Intelligent Highway System display videos
   - V-Tech table units
   - Integrated furniture systems
   - Graphic text scrolling display controlled by the internal LAN
   - Specific floor layout/design
   - Video conferencing capabilities
   - Satellite connections to the State and Federal Emergency Management Agencies
   - Video control of County observation video equipment
   - Weather Satellite information
   - Television monitors
   - Big screen video display
   - LCD and plasma screen display
   - Twenty (20) satellite telephones
   - Satellite backup systems
   - Digital document Camera
   - Smart Boards
   - Wireless Networking
   - Threat Advisory Boards
   - CCTV

7. The EOC should be equipped with external media plug in connections to allow press access without disrupting the EOC operations.

The draft of this record was sent to Kerry Reeve on March 20, 2006.

Corrected draft was returned to CTA Communications on April 7, 2006.

Interviewee Name & Address:
Kerry Reeve
Homeland Security Manager
Pima County Office of Emergency Management and Homeland Security
150 W. Congress
Tucson, Arizona 85701-1333

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CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency:	Pima County Office of Emergency Management and Homeland Security
File Name:	022406 Emergency Management Final Interview Record.doc
Date of Interview:	February 24, 2006
Location of Interview:	Pima County Health Department 150 West Congress Street, Suite 237 Tucson, AZ 85701
Persons Interviewed:	Enrique Serna, Deputy County Administrator Dennis W. Douglas, Director – Pima County Health Dept. Kerry S. Reeve, Homeland Security Manager Captain Paul Wilson, Pima County Sheriff's Department
CTA Interviewers:	Cheryl Giggetts, PMP – President Ken Ballard, Ph.D. – Vice President

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. Kerry Reeve is manager of the Pima County Office of Emergency Management & Homeland Security. In this position he is responsible for oversight of the County's Emergency Operations Center (EOC), which is currently housed in the basement at 150 West Congress Street in downtown Tucson.

2. The Office of Emergency Management & Homeland Security has a mission to coordinate first responders from local and state agencies in case of a disaster or other crisis in Pima County. This mission includes not only provisions for communications interoperability and facilities to coordinate operations, but also emergency planning, training exercises, compliance with U. S. Department of Homeland Security (DHS) provisions for homeland security in certain infrastructure, and community preparedness.

3. The Office of Emergency Management & Homeland Security falls under the Pima County Health Department, where Dennis Douglas is the Director. These operations are also overseen by Enrique Serna, who is Deputy County Administrator.

Present Situation

1. The Pima County Emergency Operations Center (EOC) is currently housed in the basement at 150 West Congress Street in downtown Tucson.

Present Problems

1. There are many disparate frequency bands and trunking protocols used by first responders in Pima County. These range from VHF (150 MHz) to 800 MHz, and comprise analog conventional, analog trunking (E. F. Johnson), as well as digital P25 (conventional) systems. The problem is that many agencies do not have direct over-the-air communications capability with their neighbors. Interoperability is therefore a major issue, especially as it applies to mutual aid situations that would be part of any disaster response scenario.

2. The space and facilities in the EOC are extremely limited, and the location is not ideal since the basement area could be prone to flooding and building collapse. Radio coverage for portable radios inside the EOC is poor to non-existent.

Future Requirements

1. When the County re-locates into the new Communications Center, the EOC will move as well to this new facility. The EOC will actually be transformed into and renamed as the Pima County Multi-Agency Coordination Center (MAC), which meets the criteria set fourth by the multi-agency coordination system design.

2. Mr. Reeve suggested that the County could apply for federal grant funding under DHS for security upgrades and improvements to certain physical facilities. The funding amount could range up to $1,000,000 per year, and may be applied to items such as emergency generators, uninterruptible power systems (UPS), security fencing and gates, intrusion alarms, video monitoring, and encryption devices. This funding is competitive through the Department of Homeland Security and is funded by project in accordance with DHS guidelines.

3. The County may also qualify for up to $250,000 per year in funding from the State for "buffer zone" improvements, provided the proposed facility meets the critical infrastructure requirements of Homeland Security Presidential Directive #7, the National Infrastructure Protection Plan.

Additional Comments

1. None.

The draft of this record was sent to Kerry S. Reeve on April 5, 2006.

Corrected draft was returned to CTA Communications on April 7, 2006.

Interviewee Name & Address:

Kerry S. Reeve, Homeland Security Manager
Pima County Office of Emergency Management and Homeland Security
150 West Congress Street, Suite 237
Tucson, AZ 85701-1333

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2. Radio Usage Form

CTA COMMUNICATIONS
RADIO USAGE
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate radio usage as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: **Pima County Office of Emergency Management and Homeland Security**

Contact Name: **Kerry Reeve** **Position:** **Manager**

Phone: **520-798-0600** **Email:** **kerry.reeve@health.pima.gov**

Please supply the following information about your present two-way radio usage. This is needed in order to project demands into the next 15 years, so that we may be able to provide sufficient fixed-end infrastructure to support your future needs.

I: RADIO UTILIZATION CURRENT SITUATION

a. Quantify the number of Non-Fixed radio equipment that is in your organization's inventory in the table listed below (column B). Non-Fixed Radio equipment includes radios that are either hand-held (portables), mounted in vehicles (mobiles), or desk-tops (Control Stations). Paging Units are included. These units can be digital, analog, or radio-pagers. Please list in the table below the quantities of radios in your operations. Please note their frequency band.

b. Shifts are listed in the table below (Columns C – F). Please quantify the number of employees that might be on duty and operate radios at a given time. You may use the space listed below to describe or clarify the number of employees on-duty and whether they are working in the field, in office, a dispatch center or PSAP.

A	B	C	D	E	F
Radio Units	**Inventory**	**Shift 1**	**Shift 2**	**Shift 3**	**Shift 4**
Mobiles	31				
Portables	45				
Control Stations	6				
Paging units					
Other Devices	2				

Please clarify quantity distribution if you have radios operating in different frequency bands for each category in Column A. For example 20 portables total, 10 portables operate in 800 MHz, 10 portables operate in UHF.

Clarifications:

Mobiles-TOAD2 2 Kenwood 800MHz, 1 Motorola 800 MHz APS State EOC, 3 Kenwood 780 VHF, 3 Kenwood 880 UHF, 2 Icom 2720 HAM Dual Band VHF/UHF, 1 HAM HF, 1 HAM VHF Packet, 2 Wulfsberg VHF, 1 Motorola UHF, 1 EF Johnson 800 MHz County, 1 Aircraft VHF, 1 aircraft UHF (Military), 1 HAM ATV Receiver, 1 40 Channell CB Radio. SUBURBAN 1 EF Johnson 800 MHz County, 1 Icom 2720 HAM Dual Band VHF/UHF, 1 HAM VHF APRS. Mobile EOC (DV) 1 VHF, 1 UHF, 1 EF Johnson 800 MHz County. Portables-20 old VHF, 20 New VHF w/Fire Chief Load, 2 Ham Dual Band VHF/UHF, 3800 MHz County Trunked. Control Stations-EOC 2 HAM Dual Band VHF/UHF, 1 Ham VHF Packet, 1 HAM VHF IRLP, 1 HAM HF/VHF/UHF with PACTOR, 1 UHF for NOAA/Amber Alert. Other devices-TOAD2 1 Uniden Handheld Scanner. RACES VAN 1 Bearcat Scanner (Very old.)

c. Check the type of vehicles that require radios and provide a quantity if possible.

Vehicles	Quantity	Requires an installed mobile in the vehicle (yes/ no)
Brush Trucks		
Water Tender		
Pumper/ Engine		
Ladder Truck		
Ambulance		
Patrol Vehicles		
Jail Transport		
Special Ops		
Vehicular Repeaters *		
Disposal Collector		
Maintenance Truck		
Utility Trucks		
Highway Maintenance		
Vans		
Buses		
Cars		
Other (Please Describe)		

*** A Vehicular Repeater vehicle is a vehicle that contains a mobile repeater system.**

Clarifications:

d. List the number of Control Stations (desk-top radios) and their locations if possible.

Address	Quantity	Utilization (What type of Operations)
130 W. Congress	6	EOC Communications by HAMS

Clarifications:

e. Please list the talk-group or channel assignments for your radios.

Primary Talk groups or channel name	Other Talkgroups or channel name	Repeater or Simplex **	Surrounding city or county	Federal	Tribal

* Designate the frequency band if known in the appropriate box.

** A repeater channel is a channel that utilizes a tower; a simplex channel communicates radio to radio without the benefit of a tower repeater.

Clarifications:

II: RADIO PROBLEMS OR CONCERNS

You may list any problems and concerns you have with the present two-way communications operations. These might include equipment reliability, radio coverage, radio interference, dispatcher responsiveness, radio procedures, or any other concerns which you might have. The table below is provided to give you the opportunity to rate problems that you are experiencing with the system or operations. You may rate strengths by describing the feature and assigning a low value. Definitions of the values are provided below.

List Problem	0	1	2	3	4	5

0 : No problem identified.

1 : Identified problem, currently not of concern. May become a concern in the future.

2 : Occasionally a problem, affects some operations but is generally worked around.

3 : Regularly a problem, operations are routinely affected to the extent there is a loss of operational efficiency.

4 : Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.

5 : Critical concern, usually affects operations, potential compromise to safety of user or of citizen.

N/A: Not applicable or not answered.

Clarifications:

III: RADIO UTILIZATION FUTURE

Please estimate the number of future Non-Fixed radios that your agency/ department will require to fulfill its mission. These numbers should reflect the net increase only not total quantities. A percentage can be applied if preferred. These increases should not reflect replacement radios for radios that have been damaged or have surpassed their life-cycle.

Radio Units	5 year Increase	10 year Increase	15 year Increase	20 year Increase
Mobiles				
Portables				
Control Stations				
Paging units				
Other Devices				

Clarifications:

Thank you for your assistance.

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

3. Mobile Data Survey

CTA COMMUNICATIONS
MOBILE DATA
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate mobile data as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Pima County Office of Emergency Management & Homeland Security

Contact Name: Kerry Reeve **Position: Manager**

Phone: 520-798-0600 **Email: kerry.reeve@health.pima.gov**

INSTRUCTIONS: Sections I and II: All interviewees complete. Section III: Only one administrator from each agency or department needs to complete

I: CURRENT SITUATION

Mobile data equipment do you currently have MDC

Age: NewCondition: NewAdequate: Yes-These systems are about to be installed within the next couple of months.

Mobile data functions that you currently have and use:

Computer Aided Dispatch:_____Name of CAD system:_____

Access to Records Management: _____Name of RMS system:_____

Records functions available: _____

Field Reporting: _____ Automatic Vehicle Location (AVL): _____

Email: _____Outlook or web-based? _____

Text Messaging: Car to car: _____Car to dispatch: _____

Query (Person, Vehicle, Property, etc)Local: _____State: _____ National : _____

Other functions: _____

Other software: _____

Problems or concerns with your current capabilities:
Current capabilities are very limited

II: FUTURE NEEDS AND DESIRES:

Tell us your opinion about your mobile information needs. Please mark as near term or longer term. Also mark needs and desires. List: **functions** (CAD dispatch, AVL, etc), **geographical areas** where you need service, **information sources** (records, databases, mug shots, etc) you need to access to, **information sharing** (messaging, other data sources) with other agencies, departments, **equipment upgrades** you need, **personal safety** considerations, and **performance** improvements.

Emergency Management needs information sharing capabilities, video downlinking capabilities, messaging etc. in order to save life and protect property. Satellite Imaging, GIS capability, plume modeling etc.

_____

_____

III: MOBILE DATA QUANTITIES – CURRENT AND FUTURE

(One administrator per agency or department should complete this section for the group.)

Types of mobile data networks currently in use:

Private Service (DataTac, etc, # of channels, and frequency band): _____

Commercial Service (Verizon, etc) : _____

Wi-Fi : _____

Other (Describe): _____

Mobile data equipment sets currently in use:

Device	USAGE				
	Currently in service		Estimated Future Needs (use either number of units___ or % growth___)		
	On Hand	Un-met Needs	2006 to 2011	2011 to 2016	2016 to 2021
Wireless Laptops in Vehicles					
Wireless Handhelds (PDA's)					
AVL equipped					
Digital Pagers					
Tone Voice Pagers					
Other Devices_____					

Please estimate the number of transactions your typical user would perform assuming he was equipped with an adequate mobile data service.

Type of Transaction	Estimated number of transactions per hour_____or per day_____
CAD Dispatch	
Query (license checks, vehicle registrations, wanted persons, property checks)	
Car-to-car or car-to-dispatch message	

Status updates	
Emails	
Field Report	
Other _____	
Other _____	
Other _____	

Any additional comments or questions you have regarding mobile data:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

4. EOC Survey

CTA COMMUNICATIONS
EMERGENCY OPERATIONS CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Pima County Office of Emergency Management & Homeland Security

Contact Name: Kerry S. Reeve **Position:** Manager

Phone: 520-798-0600 **Email:** kerry.reeve@health.pima.gov

Jurisdiction Please describe the jurisdiction(s) served by the Emergency Operations Center.

The EOC provides services to eleven different Law Enforecement agencies, Twenty-six Fire Departments and Fire Districts. The EOC supports two cities (Tucson, South Tucson) and three towns (Marana, Oro Valley, Sahuarita) one trive (Pascua Yaqui) and one Nation (Tohono O'odham). The EOC also supports the unincorporated are of Pima County and it provides support to the Arizona Homeland Security South Region. The EOC also supports all fifteen Arizona county Emergency Management programs as well as the Arizona Division of Emergency Management.

Facility

EOC Facility Name: Pima County Emergency Operations Center

Street Address: 130 W. Congress B-Level

City: Tucson, Az Zip+4:85701

Latitude:-32.22198 Longitude: -110.973786

Name of Power Company: Tucson Electric Power

What is the building/structure type?

_____ Unreinforced Masonry_____ Reinforced Masonry XSteel _____Wood

XConcrete_____Other (specify)

Does this EOC serve more than one governmental jurisdiction? Yes

Is this a primary or Secondary EOC? Primary

Is this a Multi-agency or Inter-agency EOC or does it only serve a single agency Interagency that supports multi-jurisdictional partners.

Is the EOC occupied on a daily basis? Yes

What agencies occupy the EOC on a daily basis? Pima County Office of Emergency Management and Homeland Security

External Communications

Radio Channel Utilization

What radio channels/talk groups do you use regularly? (Daily or more than weekly)
HAM-VHF, UHF, HF. SIMPLEX AND REPEATER STATE EOC via APS 800 MHz STATEWIDE TRUNKED SYSTEM VOIP technology are also used to link other geographical areas to the Tucson area for NETS via HAM/Amateur Radio.

What radio channels/talk groups do you use occasionally? (Major events, disasters, task force, etc)
We are in the process of receiving a defined talk group for the EOC utilizing the Sheriff's Departments 800 Trunked system. STATE EOC via APS 800MHz STATEWIDE TRUNKED SYSTEM. Digital HAM-VHF, HF, SIMPLEX AND REPEATER (PACKET, PACTOR, AMTOR, RTTY and CW). Varies with event but with TOAD we have linked many agencies (First Responder) to other agencies with ACU-1000 to provide interoperability for a given event/disaster. VOIP technology is also used to link other geographical areas to the Tucson area for larger events/disasters via HAM/Amateur Radio.

Do you have the ability to monitor the communications of key emergency services (police, fire, EMS, and others?Yes Is it adequate? No

Do you have the capability to contact state, regional and other locality EOCs? Yes/No

Please describe briefly how you communicate with other EOCs: Telephone, E-Team. AZ 211 System, APS radio system. Not all of the EOC's throughout the state have communication systems. Satellite phone, Blackberry, ACU1000 communications platform, HF. APS ADEM 800 MHz Statewide System. HF, VHF and UHF HAM/Amateur Radio Systems.

Is this facility the primary warning point for the jurisdiction: Yes? If not who is?

If this facility is a warning point (primary/secondary), describe the facilities and equipment used to activate the warning system:
Emergency Alert Systems (EAS), AZ 211 system, NOA

How do you ALERT Key EOC/Emergency Management Staff: Phone tree, new product being installed at the end of February 2006 called communicator (predefined talk groups-call down lists) can be setup with 100's of variations of call down lists.

Communications Service	Current Provider	Number of Lines	Special Services Available	Secure Facilities Available
Voice Lines				
Fax Lines	Pima County	Unlimited		
Data Lines	Pima County	Unlimited		
Wireless Phones				
Pagers				
E-Mail	Pima County	Unlimited		

Internet Access	Pima County	Unlimited		

Amateur Radio

Does the EOC use amateur radio? Yes

What types of communications do the Amateur Radio Operators provide?

☒ VHF/UHF X HF X Packet ☒ Video

Where are the amateur radio operators located in the EOC? Front office, far East (approximately 32 sq ft) 8 foot of linear desktop with shelves above and below the work surface.

Are antennas and coaxial cable runs provided? Yes

Do you have access to Geographic Information Systems (GIS) data for your area?Yes

If, yes, then what type? Arcview

Do you have access to a Computer Assisted Dispatch system (CAD) through an ECC or other dispatch center? No, will have a Sheriff MDE in the EOC soon.

If, yes, then what type?_____

Internal Communications

Do you have a Local Area Network within the EOC? Yes

If yes, please describe: Ethernet 10/100 using Cisco 2950 Layer 2 switches connected to a 4507 Distribution Switch., 100 Mb connected to Central Servers through Cisco switches and fiber.

Is the EOC connected to a Wide Area Network? Yes

If yes, please describe: The 4507 Distribution is connect to the 6509 Core which has Internet and Pima County Intranet Connectivity. Equipment is maintained by Pima County IT Networking Group Staff and protected with firewall, ISP is Time Warner. The bandwith is 65 Mb.

Is there a wireless LAN available in the EOC? No

Is the network secure? Pima County is currently behind the Cisco firewall, the firewall has rules which prevents access from outside Pima County unless special rules have been approved and implimented.

Does the EOC use an *Automated Disaster Management System?* Yes- E-Team

If yes, please describe the system: E-team software that is purchase by ADEM for all county EM programs.

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

Document1

5. Documentation Provided

Pima County 2005 Emergency Response and Recovery Plan.doc

TABLE 3.3.3A
INTEROPERABILITY TABLE

	Federal Agencies									State Agencies	
Fire Agencies	Burea of Alcohol, Tobacco, Firearms & Explosives	Customs and Border Protection	Drug Enforcement Administration	Emergency Man. & Homeland Security	Federal Bureau of Investigation	Immigration and Customs Enforcement	National Park Service	U.S. Forest Service	U.S. Marshals Service	Arizona Dept. of Public Safety	Arizona Game and Fish
Pima County OEM & Homeland Security	x	x	x	x	x	x	x	x	x	x	x

TABLE 3.3.3A
INTEROPERABILITY TABLE

	Fire Agencies									
Fire Agencies	Pascua Pueblo FD	Picture Rocks Fire District	Rincon Valley Fire District	Rural Metro Southwest Ambulance	South Tucson FD	Three Points FD	Tohono O' odham FD	Tucson Airport Authority FD	Tucson FD	Why Fire District
Pima County OEM & Homeland Security	x	x	x	x	x	x	x	x	x	x

TABLE 3.3.3A
INTEROPERABILITY TABLE

	Police and Emergency Services Agencis											
Agencies	Marana PD	Oro Valley PD	Pascua Yaqui PD	Pima College Dept. of Public Safety	Pima County OEM & Homeland Security	Pima County Sheriff's Dept.	Sahuarita PD	South Tucson PD	Tohono O'odham Tribal Police	Tucson Airport Authority	Tucson PD	University of Arizona Police
a County OEM & Homeland Security	x	x	x	x		x	x	x	x	x	x	x

TABLE 3.3.3A
INTEROPERABILITY TABLE

	Fire Agencies										
Fire Agencies	Ajo/Gibson Vol. FD	Arivaca Vol. FD	Avra Valley Fire District	Corona de Tucson Fire District	Drexel Heights Fire District	Elephant Head Vol. FD	Golder Ranch Fire District	Green Valley Fire District	Helmet Peak Fire District	Mt. Lemmon Fire District	Northwest Fire District
Pima County OEM & Homeland Security	x	x	x	x	x	x	x	x	x	x	x

TABLE 3.3.3A
Pima County OEM & Homeland Security

	ATTRIBUTE	Pima County OEM & Homeland Security
Sufficient Capacity		
1	Dispatch Center Size	
2	Dispatch Center Staff	
3	Technology	
Environment		
4	Light	
5	Temperature and Air Control	
6	Cleanliness	
7	Furniture	
8	Technical	
9	External Facilities	
10	Internal Facilities	
Effectiveness		
11	Radio System	
12	Console	
13	Computer Aided Dispatch (CAD)	
14	Telephone	
15	Interoperability with Other Agencies	
Technology		
16	Reliability	
17	Maintenance	
18	Back-Up	

Ranking Scale:

0 - Attribute is NOT IMPORTANT to the user.

1 - Attribute is MINIMALLY IMPORTANT to the user.

2 - Attribute is NICE TO HAVE, could enhance operations.

3 - Attribute is USEFUL, will promote more efficient day to day operation.

4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.

5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

3.4 Other Entities

3.4.1 Rural Metro Fire Department

A. Current Environment

1. Operational

Rural Metro Corporation is a private provider of fire and emergency medical services. Rural Metro Fire provides fire protection for portions of unincorporated Pima County, Sahurita, and Oro Valley. There are a total of twelve Rural Metro Fire Department stations in Pima County.

Southwest Ambulance is a subsidiary of Rural Metro and provides both emergency and non-emergency medical transport services. In Pima County, Southwest Ambulance provides primary advanced life support emergency medical response and transport services to the following communities: South Tucson, Northwest Fire District; Golder Ranch Fire District, and Sahurita. In addition, Southwest Ambulance provides basic life support transport service to the City of Tucson. Southwest Ambulance operates from eight stations in Pima County. Southwest Ambulance also provides interfacilty transports.

The dispatch center has ten positions. Eight of those positions are equipped with radio capability and eight positions are staffed during the day shift. Seven positions are staffed on the night shift. One position is used by the supervisor, two of the positions function as fire dispatch; a third position is the EMS dispatch and the remaining positions function as call takers. The dispatch staff works twelve hour shifts.

In addition to the communities that Rural Metro provides fire service to, the dispatch center also dispatches for several other fire departments and four medical helicopter services. They will be taking over dispatch for Green Valley fire effective July 1.

2. Functional

Rural Metro's Southern Arizona dispatch center is located at Southwest Ambulance's headquarters in Tucson. In addition to the fire and EMS units in Pima County, the center dispatches for units in Pinal and Graham Counties in Arizona as well as Las Cruses and Roswell, New Mexico.

Activity	2003	2004	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received			
Total 911 Calls Received		**15000**	**25000**
Wireless Call %			
Average 911 Answer Time		**5 secs**	**5 secs**
Other Emergency Calls Received		**5000**	**7000**
Administrative/Non-Emergency Calls		**125000**	**218000**
Total Incoming Calls		**145000**	**250000**
Police Calls Dispatched			
Police Officer Initiated			
Fire Events Dispatched	**20000**	**21000**	**24000**
Emergency Medical Incidents	**83000**	**90000**	**95000**
Medical Pre-Arrival Instructions Given			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries			
CJIS File Maintenance (Entries, Mods, Cancels, etc			
Administrative Messages			
Total CJIS			

3. Technical

The center is equipped with Plant VESTA 911 Customer Premises Equipment. The ORION mapping system is included. They use a GEAC Text-based CAD system. Motorola Gold Elite Radio Consoles are used.

Rural Metro Fire and Southwest Ambulance use a combination of VHF radio channels.

Interoperability is an issue. Tucson Fire uses UHF channels and Rural Metro and Southwest use VHF channels

B. Positive Attributes of Current Environment

1. Operational

The staff provides a high level of professionalism and dedication to serving the community.

2. Functional

Rural Metro and Southwest Ambulance are able to provide communities with an alternative service delivery model that may meet the community's needs in a cost-effective manner.

Seven of the nine hospitals in the Tucson area have emergency rooms. The University of Arizona Medical Center is a Level One Trauma Center. There is a voice and data interface with the emergency rooms. A web-based hospital tracking system is in place.

3. Technical

Rural Metro's Southern Arizona dispatch center is equipped with good equipment and is well maintained.

C. Desired Attributes of Current and Future Environment

1. Operational

It is highly desirable to be able to fully staff the dispatch center.

2. Functional

The Tucson area continues to experience rapid growth. It is desirable for the resources available to increase to meet the increased demand for services.

3. Technical

Additional positions are needed. This can only be accomplished after the space available is expanded. A back-up center is needed. Improved interoperability is needed. Mobile data terminals are also desirable

D. Supporting Information

1. Interview Record

CTA COMMUNICATIONS
FINAL INTERVIEW RECORD

Organization/Agency: Dispatch	-	**Rural Metro Fire/Southwest Ambulance**
File Name:	-	**Rural Metro Dispatch Interview Record Final.doc**
Date of Interview:	-	**March 3, 2006**
Location of Interview:	-	**3739 N Commerce Drive, Tucson**
Persons Interviewed:	-	**Marco Rivera, Communications Director** **Mathew Perlman, Information Services & Technology**
CTA Interviewer:	-	**Nate McClure**

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. Rural Metro Corporation is a private provider of fire and emergency medical services. Rural Metro Fire provides fire protection for portions of unincorporated Pima County, Sahurita, and Oro Valley. There are a total of twelve Rural Metro Fire Department stations in Pima County.

2. Southwest Ambulance is a subsidiary of Rural Metro and provides both emergency and non-emergency medical transport services. In Pima County, Southwest Ambulance provides primary advanced life support emergency medical response and transport services to the following communities: South Tucson, Northwest Fire District; Golder Ranch Fire District, and Sahrita. In addition, Southwest Ambulance provides basic life support transport service to the City of Tucson. Southwest Ambulance operates from eight stations in Pima County. Southwest Ambulance also provides interfacilty transports.

3. Rural Metro's Southern Arizona dispatch center is located at Southwest Ambulance's headquarters in Tucson. In addition to the fire and EMS units in Pima County, the center dispatches for units in Pinal and Graham Counties in Arizona as well as Las Cruses and Roswell, New Mexico.

Present Situation

1. The dispatch center has ten positions. Eight of those positions are equipped with radio capability and eight positions are staffed during the day shift. One position is used by the supervisor, two of the positions function as fire dispatch; a third position is the EMS dispatch and the remaining positions function as call takers. The dispatch staff works twelve hour shifts.

2. In addition to the communities that Rural Metro provides fire service to, the dispatch center also dispatches for several other fire departments and four medical helicopter services. They will be taking over dispatch for Green Valley fire effective July 1.

3. The Rural Metro Dispatch Center is a secondary PSAP and uses a Plant Vesta PALLAS 911 system. They use a GEAC CAD system and Motorola Gold Elite Radio consoles.

4. The headquarters facility was occupied in 2004. Southwest Ambulance will be building a second building adjacent to the current facility which will allow the dispatch center to expand.

5. Seven of the nine hospitals in the Tucson area have emergency rooms. The University of Arizona Medical Center is a Level One Trauma Center. There is a voice and data interface with the emergency rooms. A web-based hospital tracking system is in place.

Present Problems

1. Neither Southwest Ambulance nor Rural Metro Fire has mobile computer terminals. They do not have an automatic vehicle location (AVL) system either.

2. There is no back-up for the dispatch center. It is also located close to a wash that floods during heavy rains.

3. The GEAC CAD system is currently test-based. They would like to upgrade to the GEAC GUI-based system.

4. Interoperability is an issue. Tucson Fire uses UHF channels and Rural Metro and Southwest use VHF channels.

Future Requirements

1. None.

Additional Comments

1. None.

The draft of this record was sent to Matthew Perlman on March 31, 2006.

Corrected draft was returned to CTA Communications on _____.

Interviewee Name & Address: Matthew Perlman
Rural Metro Fire Department
490 W. Magee Road
Tucson, AZ 85704

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2. Dispatch Center Survey

3/3

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

CTA COMMUNICATIONS
DISPATCH CENTER
INFORMATION SURVEY

Pima County has engaged the services of CTA Communications to evaluate Dispatch Centers as part of the PCWIN Project. Please assist us in understanding your current situation and future needs. Please print legibly and attach a business card if you have one. Thank you for your help.

Organization/Agency Name: Rural/Metro Fire Dept. - Southwest Ambulance

Contact Name: Matthew Perlman **Position:** _____

Phone: 520-407-4397 **Email:** Matt_Perlman@rmetro.com

Jurisdiction: Please list the number of agencies and/or jurisdictions in each of the following categories for which your communications center provides dispatch services for. If you do not provide services for agencies of a particular type, enter NA for not applicable.

Police/ Law Enforcement N/A Combined Fire/EMS 1

Fire only (paid/volunteer) 4 Emergency Medical Services (EMS) 5

Other: 1

Please list the agencies and describe the geographic area served by your communications center

Rural/Metro Fire Department
Southwest Ambulance,
Corona De Tucson Fire Department
Oracle Fire Department
Southwest Ambulance of New Mexico - Roswell & Las Cruces

911 Services Provided:

Primary PSAP ____ Secondary PSAP X

Basic 911 X Enhanced 911 X Wireless Phase I X Wireless Phase II X

VOIP 911 N/A

Page 1 of 6

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

Operations Information

How many positions does your PSAP have that can answer 911 calls and dispatch? 10

How many positions does your PSAP have that can answer 911 calls but not dispatch? 8

How many positions does your PSAP have that can dispatch but not answer 911 calls? 10

Activity	2003	2004 (May 2004-Dec 2004)	2005
Wireline 911 Calls Received			
Wireless 911 Calls Received		UNK.	UNK
Total 911 Calls Received		15,000	25,000
Wireless Call %		UNK.	UNK.
Average 911 Answer Time		5.0 sec.	5.0 sec.
Other Emergency Calls Received		5,000	7,000
Administrative/Non-Emergency Calls		125,000	218,000
Total Incoming Calls		145,000	250,000
Police Calls Dispatched	N/A	N/A	N/A
Police Officer Initiated	N/A	N/A	N/A
Fire Events Dispatched	20,000	21,000	24,000
Emergency Medical Incidents	83,000	90,000	95,000
Medical Pre-Arrival Instructions Given (Transports)			
Number of 911 Transfers			
CJIS (SCIC/NCIC) Inquiries	Ø	Ø	Ø
CJIS File Maintenance (Entries, Mods, Cancels, etc	Ø	Ø	Ø
Administrative Messages			

Tasks Performed: Please check all tasks that are performed in the communications center.

Call Taking (9-1-1) ✓

Call Answering (administrative) ✓

Call Answering (Other) (i.e. after hours, etc.) ✓

Traffic Monitoring ____

Dispatch Police/Law Enforcement ____

Dispatch Fire ✓

Dispatch EMS ✓

Dispatch City/County Services/DPW ____

Page 2 of 6

Warrant/Article Entry/Confirm N/A

Dispatch Animal Control N/A

NCIC/state CIC checks N/A

Other tasks performed:

Facilities & Equipment

Item	Manufacturer	Model	Software Version	Install Date
ANI/ALI Controller (911 Switch				
Answering Position Equipment	Plant Equip.	Vesta Palace	V. 2.60	Install 3/04 Upgrade 2/06
Map	Plant Equip.	Orion Mapstar	V 5.01	2/04
CAD	Geac	Text Based		1993
Radio Console	Motorola	CentraCom Gold Elite		3/04
UPS	Power Ware	Model 20		3/04
Instant Recall Recorder	Dictaphone	SBA000		3/04
Logging Recorder	Dictaphone	SBA 000		3/04
PBX	Nortel	BCM400		3/04
Master Clock	ES-911	ESE 911	—	3/1990

9-1-1 System

Number of 911 lines 5 combined Fire/Ems & 2 EMS

Number of other lines 10 Administrative

ANI & ALI printers – number & location N/A – Replaced by Magic Mis.

Abandoned call alarm Yes, Visual & Audio

Single Button Transfers Infinite

Ring down circuits 6

Pima County, Arizona
Wireless Integrated Network (PCWIN)

Dispatch Center Information Survey
February 6, 2006

Telephone Service Provider Qwest Communications

911 Service Provider Qwest Communications

ALI Database Provider Intrado

Is 9-1-1 Equipment 20 digit ANI capable (YES) NO

Can 9-1-1 Equipment "rebid" ALI (YES) NO

CAD System

Redundant processor Y/N? Yes

911 interface Y/N? Yes

RMS interface Y/N? Yes

NCIC/State interface Y/N? N/A

Mobile Data & AVL Y/N? No

Logging Recorder

Channel Capacity 32

Recording format (tape, DAT, VHS, etc.) Electronic/Digital

Staffing

On-Duty Staff	Call Taker Only	Dispatcher Only	Call Taker/Dispatcher	Shift Supervisor/Lead Dispatcher
Day Shift	2		5	1
~~**Afternoon Shift**~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
Night Shift	2		4	1

Page 4 of 6

Authorized/Actual Staffing

	Telecommunicators	Shift Supervisors	Database/ GIS	Tech Support	Training	Public Education	Mgmt/ Admin
Authorized Full Time	35	5	1	4	N/A	N/A	2
Actual FT	30	4	Ø	4	N/A	N/A	2
Authorized Part Time	5	Ø	Ø	1	N/A	N/A	Ø
Actual Part Time	3	Ø	Ø	1	N/A	N/A	Ø

OTHER SYSTEMS

RADIO ENVIRONMENT

Radio Channel Utilization:

What radio channels/talk groups do you use regularly? (Daily or more than weekly)

Rural Metro F-2
Rural Metro F-7
Southwest F-3
Southwest F-6
Southwest F-9
Corona F 1

What radio channels do you use occasionally? (Major events, disasters, task force, etc.)

Pima County Gateway
Rural Metro Special Events
Rural Metro F-4
Rural Metro F-5
Rural Metro F-8

What agencies do you need to communicate with but cannot?

_____ _____

_____ _____

_____ _____

_____ _____

Problems and concerns with present communications situation:

Please describe any problems and concerns you have with the present two-way communications situation. These might include equipment reliability, radio coverage, radio interference, radio procedures, or any other concerns which you might have. Continue on a separate sheet of paper if you wish.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Please hand this survey in during your interview or return to:

CTA Communications, Inc.
P.O. Box 4579
Lynchburg, VA 24502-0579

Fax: (434) 239-9221
Phone: (434) 239-9200
PCWIN@ctacommunications.com

If returning via email, please also send to Captain Paul Wilson: Paul.Wilson@pimasheriff.net

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3. Documentation Provided

- Fire Rescue Frequency Bands
- WIN Frequency Self Evaluation

4.0 PCWIN COMMUNICATIONS NETWORK ATTRIBUTES

A necessary step in the needs assessment process is to allow each agency to express the importance of certain system characteristics for their operation. From input received during the PCWIN interview process, we developed a list of attributes for voice radio communications. These attributes, or design requirements are positive characteristics that may be emphasized in the design of future radio systems.

We have divided the attributes into three categories: Voice Radio System; Mobile Data and AVL Systems; and Communications / Emergency Operations Center. Within each of these categories we have further subdivided the attributes into the following three areas: Operational; Functional; and Technical.

Each attribute has a designator number which is the numerical placement of the attribute in the original listing provided to each agency for their individual rating.

4.1 Voice Radio System

4.1.1 Operational Requirements

1. Improved Voice Radio Coverage – Eastern County

   The voice radio system shall provide coverage over the majority of the eastern half of the County including metropolitan Tucson.

   Coverage will be designed with areas for portable coverage, in-building portable coverage where appropriate, and street level coverage for mobiles. The coverage area will include specific areas outside the County where service is required. Coverage should be evenly distributed over the service area.

2. Improved Voice Radio Coverage – Central County

   The voice radio system shall provide as much coverage as possible in areas within the central area of the County.

The coverage design will maximize the coverage that can be obtained from the available tower sites.

3. Improved Voice Radio Coverage – Western County

The voice radio system shall provide coverage over the majority of the populace and highway areas of the western areas of the County. Coverage will be designed with areas for portable coverage and street level coverage for mobiles. Coverage should be evenly distributed over the service area.

4. In-building Coverage

The radio system shall be designed to provide in-building coverage in the metropolitan Tucson area and in other areas where appropriate. In-building coverage will be provided first by increasing coverage in areas of light, medium, and heavy buildings, and then through the application of in-building coverage systems in targeted buildings.

5. Minimize Local Interference

The system shall eliminate inter-site (co-channel), and local bleed-over interference.

22. Increased Dispatch Channel Capacity

The system shall provide for sufficient channels for dispatch operations

23. Dispatch Capacity

The dispatch system shall provide sufficient consoles and dispatcher positions so that a dispatcher can be contacted whenever one is needed.

24. Dispatch Coverage

Users can contact dispatchers via radio from anywhere in the operational area.

4.1.2 Functional Requirements

6. Increased Channel Capacity

The system design shall include additional channels for current and future capacity. Additional channels are important to alleviate congestion on the dispatch and incident channels.

7. On-scene Fire Channels

The system design shall include licensed simplex frequencies for use by fire departments on-scene. Direct radio-to-radio frequencies (firegrounds) enable local incident communications in-building, below grade, and in other situations where repeated channels do not offer solid coverage.

8. Monitored Firegrounds

The system design shall provide a means or routing fireground channels to dispatch. Fireground communications must be available to be monitored by dispatch, command personnel, or recording.

9. Emergency Alerting

The radios and system shall provide an emergency function for alerting dispatch and supervisors to the need for assistance.

10. Workgroup Oriented Operation

The system shall be organized with sufficient channels or talk groups to allow departmental workgroups to have their own channel or talk group.

11. Voice Security

The system shall provide encrypted communications for users that need to prevent unauthorized interception of sensitive information.

18. Person Location

The radio system shall include radio location technology to map the location of user radios. Dispatch can determine the location of a user (to his portable or mobile radio), useful for example when sending assistance.

19. System Control

The City is significantly more comfortable with the high level of system control that comes with exclusive use and system ownership.

20. Recorded Operations

The system design shall provide the capability of recording audio for all Public Safety agencies using the system. Logged audio is important for all dispatch and incident communications.

21. Simplified User Operations

The user radios shall offer advanced functionality but emphasize simple user operation. It is important for user radios to be easy to use and operate, require little attention, resist accidental setting changes, interface to advanced accessories (including wireless), exhibit good battery life, and be of rugged design.

4.1.3 Technical Requirements

34. Private Personnel Paging

The radio infrastructure shall include a private paging system and pagers for alerting individuals and groups of users in any agency. Private paging helps assure rapid and reliable paging using dedicated equipment with guaranteed capacity.

35 Fire Station Alerting

The radio infrastructure shall include equipment for alerting individual fire stations.

36. Paging over Cellular

The paging system shall include a means of delivering pages over a secondary path through commercial wireless service to cellular phones or PDA devices. This capability provides a backup paging service and also out-of-town paging.

37. Future Expansion

The system shall be capable of future expansion in the number of channels and the number of users. System design shall incorporate expansion to the level of usage predicted for the next 10 years with only the addition of equipment.

38. Owner-Controlled Backbone

The system shall be interconnected using a dedicated interconnecting backbone network. The goal is to maximize reliability, minimize use of leased carriers and associated costs, and maintain control of the network.

39. Microwave Connectivity

The system design shall include a microwave network to carry radio and mobile data traffic. The goal is to have a dedicated, highly reliable network interconnecting all major radio locations.

40. Microwave Additional Capacity

The network design shall include extra capacity, over and above the radio and mobile data needs, for other County uses. The County intends to add the microwave network into the overall County network for transport of various types of information.

41. Regional Connectivity

The system design shall provide infrastructure connectivity to adjacent areas. For example, PCWIN may be connected, either directly through the infrastructure, or through a gateway, to the Phoenix/ Mesa system, adjacent County systems, or State infrastructure.

42. Survivability

The system shall be designed to survive in severe weather or emergency conditions. If dispatch points are shifted from their primary to a backup location, radio control shall be available at the backup location to the same degree it was available at primary dispatch.

43. Reliability/Failure Hierarchy

The radio system and equipment must be designed such that single-mode failures do not perceptibly impact the routine operations of the system.

The following requirements shall apply to failure conditions:

- Channel failure: no operating impact due to failed voice channel.

- Site failure: no operating impact except reduced coverage area.

- Primary power failure: UPS backup shall be supplied for all computer/control equipment, and generator backup for the radio equipment.

- Console failures: Single console failure: use reserve console. Console common equipment failure, dispatchers operate co-located radio control station. Communications Center failure: Dispatch using radio control stations at a backup dispatch center.

44. Single Points of Failure

The system shall, as much as practical, minimize single points of failure. This is accomplished through redundant equipment, multiple paths, backup equipment, etc.

45. Power Backup

All fixed radio equipment shall require backup power with automatic transfer, capable of handling 100 percent loading of radio equipment. An uninterruptible power system (UPS) shall be required for computer control equipment.

46. Staffing and Training

The system vendor shall provide formal training for system administrators, supervisors, dispatchers, radio users, and maintenance technicians.

47. Centralized Maintenance

The County prefers to centrally maintain and administer the radio system, dispatch systems, and user radios, either in-house or using a service shop. Centralized maintenance provides consistent and coordinated services for all user departments.

48. Competitive Procurement Process

The overall system concept shall be available from more than one vendor allowing a competitive procurement process. Equipment shall be procured using open non-restrictive, competitive specifications. Award to be based on the most cost-effective system meeting the regions operational and functional requirements.

49. Commonality of Equipment

A single vendor shall install and supply all required equipment. As much as possible, user equipment shall be similar in operation and maintenance requirements. The goal is to minimize spare parts inventory and multiple vendor training requirements.

50. Multiple Sources

Compatible user equipment shall be available from multiple vendors. Competitive procurement of user equipment is more important than equipment commonality.

51. Phased Implementation

As much as possible, system procurement and implementation shall occur on a phased basis, allowing costs to be spread over several years. The radio system shall be designed to add user groups to the system over time.

52. Tiered Subscriber Cost

High-, mid-, and low-tier radio equipment with feature sets and costs matched to the user group shall be provided. The initial cost of user radios is a prime concern in the evaluation of proposed alternatives.

4.1.4 Interoperability Requirements

12. Operational Boundary Transparency

The radio system design shall utilize multiple tower sites, and to the extent possible, automatically switch to the correct site, transparent to the radio user. System operation will be logical, with the focus on whom the user wants to call rather than where they are located.

13. One System Serves All Agencies

One radio system shall support all Public Safety agencies in Pima County including all Fire agencies and all Police and Emergency Service agencies. Convenient, same-radio communications is important between all Public Safety agencies within the County.

14. Interoperability through Dispatch

The radio system shall provide a connection between all dispatch operations allowing dispatchers to facilitate information flow between agencies. The various Public Safety agencies in Pima County prefer to communicate with one another through dispatch and incident command, rather than at the user level.

15. Interoperability with Adjacent Counties

The radio system design shall emphasize compatibility with radio systems in the adjacent counties. Public safety users need to assist in adjacent counties (and visa versa) and communicate with users from other Public Safety agencies using their assigned radios.

16. Interoperability with State Agencies

The radio system design shall emphasize compatibility with radio systems in use by the State of Arizona. This will facilitate communications between State agencies and agencies within Pima County.

17. Interoperability with Federal Agencies

The radio system design shall emphasize compatibility with radio systems in use by the Federal agencies operating in Pima County. While local agencies cannot operate radio on Federal channels, compatible equipment would facilitate Federal/local cooperative efforts if Federal users could communicate over County infrastructure.

4.1.5 Attributes Matrix

TABLE 4-1 summarizes the relative importance of each Voice Radio System attribute to PCWIN survey respondents. Each agency was offered the opportunity to rank the attributes according to importance to their agency's mission. Ranking ranges from most important (5) to least important (0) according to the definitions at the bottom of the table.

TABLE 4-1 illustrates the composite ranking for all respondents. Average Rank is the average number for all agencies. The Law Average includes inputs from just the law enforcement agencies. The Fire Average includes inputs from just the fire departments.

Thirty three departments were invited to rank the list of attributes. Of the twelve law enforcement agencies, all responded. Of the twenty two fire departments, nineteen responded.

CTA will use the PCWIN ranking results to evaluate the suitability of several potential system architecture alternatives. Ultimately, this evaluation will contribute to a viable system architectural concept that will satisfy PCWIN's needs.

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4.2 Mobile Data and AVL Systems

4.2.1 Operational Requirements

25. One Mobile Data Network Serves All Agencies

One mobile data system shall support all Public Safety agencies in Pima County including all Fire agencies and all Police and Emergency Service agencies or the ability to interface multiple systems. A common interface would allow for compatibility and to avoid duplication of equipment, operation, and maintenance.

26. Cross CAD Interconnection

The system design shall include a means of exchanging information across the three major CAD systems used in the County: Spillman, ADSI, and PRC. CAD information exchange is important for information database sharing.

4.2.2 Functional Requirements

31. Mobile Applications

The mobile data system shall be designed around an application set suitable for routine law enforcement and fire operations. These capabilities typically include:

- CAD dispatch
- Records access
- Unit status
- Sheriff civil process
- In-car mapping
- Automatic Vehicle Location
- Messaging
- Email

- State and National Queries
- Access to electronically stored reference materials
- Other law, fire, public service specific applications

32. Advanced Mobile Applications

The mobile data system shall include capacity and capability for advanced applications for law enforcement and fire operations. Advanced capabilities include:

- Video Surveillance
- Field biometrics
- Mobile access to many types of County information
- Larger photos
- Field citations
- Field reports

4.2.3 Technical Requirements

27. Mobile Data Criticality

The mobile data system is equally important to public safety communication as the voice radio system. The mobile data system will be design to the same critical communications standards as the voice radio system.

28. Vehicle Location

Automatic Vehicle Location (AVL) shall allow vehicles to be located by users in other vehicles and by dispatch. Unit location information can assist dispatch in selecting units for incident response and by incident commanders for checking location status of assigned units.

29. EMS Telemetry

The mobile data radio network shall support telemetry of EMS patient data. This function is needed in the vehicle while en route and patient-side in the field.

30. High-Speed Broadband Service

The system design shall include locations with access to wireless broadband service. High bandwidth service is important for advanced surveillance applications, exchange of bulky files, access to bandwidth intensive County/City information, and laptop maintenance.

33. Access County Information

The mobile data radio network shall provide access to County GIS (AIMS) information. Transfer of this type information tends to require significant bandwidth and may be offered over wireless broadband or be provided as local MDC files.

4.2.4 Attributes Matrix

TABLE 4-2 summarizes the relative importance of each mobile data system attribute to PCWIN survey respondents. Each agency was offered the opportunity to rank the attributes according to importance to their agency's mission. Ranking ranges from most important (5) to least important (0) according to the definitions at the bottom of the table.

TABLE 4-2 illustrates the composite ranking for all respondents. Average Rank is the average number for all agencies. The Law Average includes inputs from the law enforcement agencies. The Fire Average breaks out just the fire departments.

Thirty three departments were invited to rank the list of attributes. Of the twelve law enforcement agencies, all responded. Of the twenty two fire departments, nineteen responded.

CTA will use the PCWIN ranking results to evaluate the suitability of several potential system architecture alternatives. Ultimately, this evaluation will contribute to a viable system architectural concept that will satisfy PCWIN's needs.

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4.3 Communications/Emergency Operations Center

4.3.1 Operational Requirements

1. Dispatch Center Size

The dispatch center shall have sufficient space to house comfortably the dispatchers, call-takers, management and supervision, and technical support for the dispatch operation

2. Dispatch Center Staff

The dispatch center system shall provide enough personnel to provide services such as dispatching, call taking, management and supervision, and technical support for the operation at high peak activity and high call volume periods.

11. External Facilities

The Dispatch center shall have easy outside access with mass transit and traffic access. The parking lot shall be well lighted and secure. The center should be located with convenient access to restaurants, and day care facilities.

12. Internal Facilities

The dispatch center shall be designed with adequate break areas, restrooms, and quiet rooms. The restrooms shall be located near to but not in the dispatch area. There shall be un-recorded telephones for personal use.

13. Radio system

The radio system shall allow access for the dispatchers to all field personnel in all areas of the jurisdiction. Communications shall be clear and easily understood.

14. Console

The Console system will adequately interface and support the radio system. The dispatcher can easily operate the console system features. All controls and information readouts shall be clear and easily understood. The system shall support headsets.

15. Computer Aided Dispatch (CAD)

The CAD system will adequately support all of the features needed for the operation. It shall handle all types of calls, provide adequate transaction speed and capacity, provide automatic functions (location validation, 10/28 and 10/29's; and hydrant locations), interface with the radio and telephone system, and provide activity tracking and reporting facilities.

17. Interoperability with Other Agencies

The systems designs shall emphasize compatibility with other jurisdictions whenever possible. This shall include such devices as the "Gateway".

4.3.2 Functional Requirements

4. Light

The dispatch center will be lighted in such a manner as to improve the operating environment. This will include individual controlled task lighting, natural light and/or windows, non-glare, and in-direct lighting.

7. Temperature and air control

The dispatch center shall have an effective heat and air conditioning system that provides for a wide range of conditions, from chilly nights to hot days. Humidity shall be controlled. There shall be sufficient movement of air and infusion of fresh air to allow the dispatch area to have a non-stuffy atmosphere.

8. Cleanliness

The center shall be designed to allow for proper cleaning and dirt/dust removal. The center shall be kept clean on a routine basis.

9. Furniture

The furniture shall be of a full featured design. This will allow raising and lowering the work positions, tilting work surfaces, management of the required cables and power cords. The design of the furniture shall assist the dispatcher and call takers with a convenient and comfortable layout.

4.3.3 Technical Requirements

3. Technology

The technology in the dispatch center shall provide adequate support for the operations. There shall be sufficient radios and telephones and computers. The systems aid the dispatcher and call takers in answering calls, event locations, unit selection, report and incident numbering, and associative needs.

10. Technical

The dispatch center technology shall make the dispatch and call taking easier not more difficult. Systems shall be designed for single entry and automation when possible to reduce work activities.

16. Telephone

The telephone system shall operate seamlessly for all in-coming and out-going telephone lines. All controls and information shall be easy to read and understandable. The system will require as few buttons pushes as possible to operate.

18. Reliability

The systems that support the dispatch operation shall be reliable. Failures shall be far between and the dispatcher shall have a sense of confidence that the systems will be running when needed.

19. Maintenance

In the rare occasions when a system or device fails the repairs are quickly begun and performed. Overall there shall be a high confidence level that the system will be kept running.

20. Back-Up

The dispatchers and call takers shall be provided with adequate back-up technology and plans that provide for continuing service in a catastrophe. The back-up systems shall be well understood by the dispatchers and call takers and readily employed when needed.

4.3.4 Attributes Matrix

TABLE 4-3 summarizes the relative importance of each Dispatch Center attribute to PCWIN survey respondents. The Pima County Sheriff's Department and City of Tucson Police and Fire Departments (planned occupants for a new communications center) each ranked the attributes according to importance to their agency's mission. Ranking ranges from most important (5) to least important (0) according to the definitions at the bottom of the table.

TABLE 4-3 illustrates the composite ranking for all respondents. Average Rank is the average number for all agencies. The Law Average breaks out just the law enforcement agencies. The Fire Average breaks out just the fire department.

CTA will use the PCWIN ranking results to evaluate the suitability of several potential alternatives. Ultimately, this evaluation will lead us to a viable concept that will satisfy PCWIN's needs.

TABLE 4-1
Voice Attribute Ranking Summary

DESIGNATOR NO.	ATTRIBUTE	OVERALL AVERAGE	LAW AVERAGE	FIRE AVERAGE
43	Reliability/Failure Hierarchy	4.6	4.8	4.4
45	Power Backup	4.5	4.7	4.4
42	Survivability	4.5	4.8	4.3
44	Single Points of Failure	4.3	4.6	4.2
4	In-building Coverage	4.3	4.6	4.1
46	Staffing and Training	4.3	4.5	4.2
9	Emergency Alerting	4.2	3.7	4.4
8	Monitored Firegrounds*	4.1		4.1
5	Minimize Local Interference	4.0	4.4	3.8
21	Simplified User Operations	3.9	4.3	3.7
37	Future Expansion	3.9	4.2	3.8
14	Interoperability through Dispatch	3.9	3.7	4.0
20	Recorded Operations	3.9	4.2	3.7
24	Dispatch Coverage	3.9	3.8	3.9
11	Voice Security**	3.8	3.8	
7	On-scene Channels	3.7	2.9	4.1
35	Fire Station Alerting*	3.6		3.6
23	Dispatch Capacity	3.6	3.6	3.6
49	Commonality of Equipment	3.6	3.5	3.6
52	Tiered Subscriber Cost	3.5	3.6	3.4
18	Person Location	3.5	3.7	3.3
13	One System Serves All Agencies	3.4	3.4	3.5
19	System Control	3.4	3.5	3.3
6	Increased Channel Capacity	3.4	3.4	3.4
47	Centralized Maintenance	3.3	3.7	3.2
16	Interoperability with State Agencies	3.3	3.0	3.5
10	Workgroup Oriented Operation	3.3	3.2	3.4
15	Interoperability with Adjacent Counties	3.3	2.9	3.5
17	Interoperability with Federal Agencies	3.3	3.1	3.4
48	Competitive Procurement Process	3.3	3.3	3.3
22	Increased Dispatch Channel Capacity	3.2	3.4	3.2
39	Microwave Connectivity	3.2	3.6	3.0
38	Owner-Controlled Backbone	3.2	3.4	3.1
12	Operational Boundary Transparency	3.2	3.5	3.1
41	Regional Connectivity	3.2	3.1	3.2
34	Private Personnel Paging	3.1	3.1	3.1
3	Improved Voice Radio Coverage – Western Count	3.0	3.6	2.6
40	Microwave Additional Capacity	3.0	3.3	2.8
51	Phased Implementation	3.0	3.4	2.8
1	Improved Voice Radio Coverage – Eastern County	2.9	3.5	2.6
2	Improved Voice Radio Coverage – Central County	2.9	3.4	2.7
36	Paging over Cellular	2.9	3.0	2.9
50	Multiple Sources	2.7	2.9	2.6

Ranking Scale:
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.
*** Overall average includes only Fire Departments**
**** Overall average includes only Law Enforcement Agencies**

TABLE 4-1A

Voice Attribute Ranking by Agency

DESIGNATOR NO.	ATTRIBUTE	Ajo/Gibson Vol. Fire Dept	Arivaca Vol. Fire Dept.	Avra Valley Fire Dept.	Corona de Tucson Fire Dist.	Drexel Heights Fire Dist.	Elephant Head Vol. Fire Dept.	Golder Ranch Fire Dist.	Green Valley Fire Dist.	Helmet Peak Fire Dist.	Marana Police Dept.	Mt. Lemmon Fire Dist.	Northwest Fire Dist.	Oro Valley Police Dept.	Picture Rocks Fire Dist.	Rincon Valley Fire Dist.	South Tucson Fire Dept.	Three Points Fire Dist.	Tohono O'odham Fire Dept.	Tucson Fire Dept.	Why Fire Dist.	Pascua Pueblo Fire	Tucson Airport Authority Fire	Pascua Pueblo Police	Tucson Airport Authority Police	Pima College Dept. of Public Safety	Sahuarita Police Dept.	South Tucson Police Dept.	Tohono O'odham Tribal Police	University of Arizona Police	Tucson Police Dept.	Pima County Sheriff's Dept.	Pima County SD-AJO	Pima County OEM & Homeland Security
43	Reliability/Failure Hierarchy	4.0	4.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0		3.0	5.0	4.0	3.0	3.0		5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
45	Power Backup	4.0	3.0	5.0	5.0	5.0		5.0	5.0	3.0	5.0		4.0	5.0	5.0	4.0	3.0		5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0
42	Survivability	5.0	4.0	4.0	5.0	4.0		5.0	5.0	2.0	5.0		2.0	5.0	5.0	2.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
44	Single Points of Failure	5.0	3.0	5.0	5.0	5.0		5.0	5.0	1.0	5.0		3.0	5.0	4.0	3.0	3.0		4.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
4	In-building Coverage	5.0	5.0	5.0	5.0	4.0		4.0	5.0	0.0	5.0		3.0	5.0	5.0	3.0	2.0		4.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0
46	Staffing and Training	5.0	5.0	5.0	3.0	4.0		4.0	5.0	3.0	5.0		3.0	4.0	5.0	3.0	3.0		5.0	5.0	5.0	3.0	5.0	3.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	4.0	5.0	4.0
9	Emergency Alerting	5.0	5.0	5.0	5.0	5.0		5.0	5.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	2.0	5.0	2.0	5.0	5.0	3.0	3.0	3.0	5.0	1.0	4.0	5.0	5.0
8	Monitored Firegrounds*	5.0	5.0	4.0	3.0	5.0		5.0	5.0	2.0			3.0		5.0	3.0	4.0		5.0	5.0	5.0	0.0	5.0	0.0	5.0	0.0	0.0	3.0	3.0		1.0	1.0	5.0	4.0
5	Minimize Local Interference	5.0	3.0	4.0	5.0	4.0		3.0	4.0	3.0	5.0		3.0	3.0	5.0	3.0	2.0		3.0	4.0	5.0	3.0	5.0	3.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	4.0
21	Simplified User Operations	4.0	5.0	4.0	3.0	4.0		5.0	5.0	1.0	4.0		2.0	4.0	5.0	2.0	3.0		3.0	5.0	4.0	3.0	5.0	3.0	5.0	4.0	5.0	4.0	4.0	3.0	5.0	5.0	5.0	4.0
37	Future Expansion	4.0	3.0	4.0	4.0	5.0		3.0	4.0	3.0	5.0		3.0	4.0	5.0	3.0	3.0		4.0	5.0	4.0	2.0	4.0	2.0	4.0	5.0	5.0	4.0	5.0	3.0	5.0	4.0	5.0	4.0
14	Interoperability through Dispatch	5.0	5.0	4.0	4.0	5.0		5.0	4.0	4.0	4.0		3.0	3.0	4.0	3.0	3.0		5.0	4.0	5.0	3.0	3.0	3.0	3.0	4.0	5.0	4.0	5.0	3.0	3.0	2.0	5.0	4.0
20	Recorded Operations	4.0	2.0	4.0	2.0	5.0		4.0	5.0	1.0	5.0		2.0	4.0	4.0	2.0	3.0		5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	3.0	4.0	3.0	5.0	4.0	5.0	3.0
24	Dispatch Coverage	4.0	2.0	5.0	4.0	5.0		3.0	5.0	5.0	5.0		2.0	5.0	5.0	2.0	2.0		4.0	5.0	4.0	2.0	5.0	2.0	5.0	5.0	0.0	2.0	5.0	4.0	5.0	5.0	5.0	4.0
11	Voice Security**	3.0	3.0	2.0	1.0	2.0		1.0	4.0	0.0	4.0		2.0	2.0	2.0	2.0	2.0		3.0	4.0	3.0	3.0	4.0	3.0	4.0	1.0	5.0	4.0	4.0	4.0	5.0	4.0	5.0	3.0
7	On-scene Channels	5.0	5.0	5.0	5.0	4.0		4.0	5.0	4.0			3.0	4.0	4.0	3.0	4.0		4.0	5.0	5.0	0.0	5.0	0.0	5.0	1.0	0.0	3.0	2.0	5.0	2.0	5.0	5.0	4.0
35	Fire Station Alerting*	5.0	2.0	5.0	2.0	5.0		5.0	4.0	1.0			3.0		5.0	3.0	2.0		4.0	5.0	5.0	2.0	4.0	2.0	4.0	0.0	0.0	3.0	4.0	0.0	2.0	0.0	5.0	3.0
23	Dispatch Capacity	4.0	2.0	5.0	3.0	5.0		3.0	5.0	0.0	5.0		3.0	5.0	3.0	3.0	2.0		4.0	5.0	4.0	2.0	5.0	2.0	5.0	5.0	0.0	2.0	4.0	4.0	5.0	4.0	5.0	4.0
49	Commonality of Equipment	5.0	4.0	4.0	3.0	4.0		4.0	4.0	5.0	5.0		2.0	3.0	5.0	2.0	3.0		3.0	3.0	4.0	3.0	3.0	3.0	3.0	2.0	5.0	3.0	5.0	3.0	3.0	3.0	5.0	4.0
52	Tiered Subscriber Cost	4.0	5.0	4.0	2.0	4.0		3.0	3.0	5.0	4..0		2.0	3.0	4.0	2.0	3.0		4.0	4.0	4.0	2.0	3.0	2.0	3.0	5.0	3.0	3.0	4.0	3.0	5.0	5.0	4.0	3.0
18	Person Location	5.0	3.0	5.0	4.0	3.0		3.0	5.0	0.0	4.0		3.0	2.0	2.0	3.0	3.0		3.0	4.0	5.0	2.0	4.0	2.0	4.0	2.0	3.0	3.0	5.0	5.0	4.0	4.0	5.0	4.0
13	One System Serves All Agencies	4.0	3.0	4.0	4.0	4.0		3.0	4.0	4.0	5.0		3.0	2.0	3.0	3.0	4.0		5.0	3.0	4.0	2.0	2.0	2.0	2.0	0.0	5.0	4.0	5.0	3.0	4.0	3.0	5.0	4.0
19	System Control	3.0	5.0	4.0	3.0	4.0		3.0	4.0	1.0	4.5		2.0	3.0	3.0	2.0	3.0		5.0	4.0	3.0	3.0	4.0	3.0	4.0	2.0	3.0	3.0	5.0	3.0	4.0	4.0	5.0	3.0
6	Increased Channel Capacity	5.0	2.0	3.0	4.0	4.0		1.0	5.0	2.0	4.0		2.0	4.0	4.0	2.0	3.0		4.0	4.0	5.0	3.0	4.0	3.0	4.0	0.0	3.0	3.0	3.0	5.0	5.0	2.0	5.0	4.0
47	Centralized Maintenance	4.0	5.0	4.0	2.0	4.0		3.0	5.0	0.0	5.0		1.0	4.0	3.0	1.0	3.0		2.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	4.0	5.0	3.0	UNKNOWN	4.0	4.0
16	Interoperability with State Agencies	5.0	4.0	5.0	3.0	4.0		5.0	4.0	2.0	4.0		3.0	3.0	4.0	3.0	3.0		4.0	1.0	5.0	1.0	4.0	1.0	4.0	2.0	3.0	2.0	4.0	3.0	2.0	3.0	5.0	4.0
10	Workgroup Oriented Operation	5.0	3.0	5.0	1.0	3.0		3.0	5.0		5.0		2.0	3.0	3.0	2.0	3.0		4.0	4.0	5.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	4.0	5.0	4.0	3.0	4.0	4.0
15	Interoperability with Adjacent Counties	5.0	3.0	5.0	4.0	3.0		5.0	4.0	1.0	5.0		3.0	3.0	3.0	3.0	3.0		4.0	1.0	5.0	2.0	4.0	2.0	4.0	0.0	2.0	3.0	4.0	3.0	2.0	3.0	5.0	4.0
17	Interoperability with Federal Agencies	5.0	5.0	5.0	3.0	3.0		5.0	4.0	2.0	4.0		2.0	3.0	3.0	2.0	3.0		4.0	1.0	5.0	1.0	4.0	1.0	4.0	2.0	4.0	2.0	4.0	3.0	2.0	3.0	5.0	4.0
48	Competitive Procurement Process	4.0	5.0	4.0	2.0	3.0		4.0	4.0	2.0	5.0		2.0	0.0	3.0	2.0	3.0		5.0	4.0	5.0	3.0	2.0	3.0	2.0	5.0	2.0	4.0	3.0	3.0	5.0	5.0	1.0	3.0
22	Increased Dispatch Channel Capacity	4.0	2.0	3.0	3.0	4.0		3.0	5.0	0.0	5.0		1.0	4.0	3.0	1.0	2.0		4.0	5.0	4.0	2.0	5.0	2.0	5.0	2.0	0.0	2.0	4.0	4.0	5.0	4.0	5.0	4.0
39	Microwave Connectivity	1.0	2.0	4.0	3.0	4.0		5.0	3.0	0.0	5.0		2.0	4.0	5.0	2.0	3.0		4.0	5.0	1.0	1.0	3.0	1.0	3.0	2.0	5.0	3.0	5.0	3.0	5.0	4.0	5.0	4.0
38	Owner-Controlled Backbone	2.0	3.0		2.0	4.0		3.0	4.0		5.0		2.0	4.0	4.0	2.0	2.0		4.0	5.0	2.0	2.0	3.0	2.0	3.0	2.0	3.0	3.0	5.0	3.0	4.0	4.0	5.0	3.0
12	Operational Boundary Transparency	5.0	3.0	2.0	3.0	4.0		3.0	4.0	1.0	4.0		2.0	3.0	2.0	2.0	2.0		4.0	3.0	5.0	2.0	4.0	2.0	4.0	1.0	3.0	3.0	5.0	4.0	4.0	4.0	5.0	3.0
41	Regional Connectivity	5.0	2.0	4.0	3.0	4.0		4.0	4.0	0.0	5.0		2.0	3.0	5.0	2.0	3.0		3.0	3.0	5.0	0.0	4.0	0.0	4.0	2.0	2.0	2.0	5.0	3.0	4.0	3.0	5.0	4.0
34	Private Personnel Paging	5.0	2.0	3.0	3.0	3.0		4.0	4.0	4.0	2.0		2.0	3.0	2.0	2.0	2.0		3.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	4.0	4.0
3	Improved Voice Radio Coverage – Western Cou	5.0	3.0	2.0	0.0	5.0		0.0	2.0	0.0	5.0		1.0	4.0	3.0	1.0	1.0		5.0	4.0	5.0	0.0	4.0	0.0	4.0	0.0	3.0	4.0	5.0	4.0	5.0	5.0	5.0	5.0
40	Microwave Additional Capacity	1.0	2.0	4.0	2.0	5.0		5.0	3.0	0.0	5.0		2.0	3.0	5.0	2.0	3.0		3.0	4.0	1.0	1.0	3.0	1.0	3.0	2.0	2.0	3.0	5.0	3.0	4.0	4.0	5.0	4.0
51	Phased Implementation	2.0	2.0	3.0	2.0	3.0		5.0	3.0	0.0	3.5		2.0	3.0	4.0	2.0	3.0		4.0	4.0	2.0	2.0	3.0	2.0	3.0	2.0	3.0	3.0	4.0	4.0	4.0	4.0	5.0	3.0
1	Improved Voice Radio Coverage – Eastern Coun	0.0	3.0	2.0	5.0	5.0		0.0	2.0	0.0	3.0		4.0	5.0	2.0	4.0	1.0		2.0	5.0	0.0	2.0	5.0	2.0	5.0	5.0	0.0	4.0	4.0	4.0	5.0	5.0	0.0	4.0
2	Improved Voice Radio Coverage – Central Coun	0.0	3.0	2.0	0.0	4.0		0.0	2.0	5.0	4.0		1.0	4.0	5.0	1.0	4.0		4.0	5.0	0.0	3.0	4.0	3.0	4.0	0.0	5.0	4.0	4.0	5.0	5.0	3.0	0.0	4.0
36	Paging over Cellular	3.0	2.0	3.0	3.0	4.0		3.0	4.0	3.0			2.0	3.0	3.0	2.0	3.0		3.0	1.0	3.0	2.0	5.0	2.0	5.0	2.0	3.0	3.0	4.0	3.0	2.0	1.0	4.0	4.0
50	Multiple Sources	1.0	4.0	4.0	0.0	4.0		3.0	4.0	0.0	5.0		2.0	2.0	3.0	2.0	3.0		4.0	4.0	1.0	2.0	1.0	2.0	1.0	2.0	3.0	3.0	3.0	3.0	4.0	3.0	5.0	3.0

Ranking Scale:

TABLE 4-2

Mobile Data Attribute Ranking Summary

DESIGNATOR NO.	ATTRIBUTE	OVERALL AVERAGE	LAW AVERAGE	FIRE AVERAGE
29	EMS Telemetry*	3.5		3.5
28	Vehicle Location	3.5	3.5	3.5
27	Mobile Data Criticality	3.5	3.6	3.3
31	Mobile Applications	3.5	3.9	3.2
30	High-Speed Broadband Service	3.2	3.5	3.0
32	Advanced Mobile Applications	3.2	3.5	3.0
26	Cross CAD Interconnection	3.0	3.2	2.9
25	One Mobile Data Network Serves All Agenci	2.9	3.0	2.8
33	Access County Information	2.9	3.3	2.7

Ranking Scale:

0 - Attribute is NOT IMPORTANT to the user.

1 - Attribute is MINIMALLY IMPORTANT to the user.

2 - Attribute is NICE TO HAVE, could enhance operations.

3 - Attribute is USEFUL, will promote more efficient day to day operation.

4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.

5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

*** Overall average includes only Fire Departments**

TABLE 4-2A

Mobile Data Attribute Ranking by Agency

DESIGNATOR NO.	ATTRIBUTE	Ajo/Gibson Vol. Fire Dept	Arivaca Vol. Fire Dept.	Avra Valley Fire Dept.	Corona de Tucson Fire Dist.	Drexel Heights Fire Dist.	Elephant Head Vol. Fire Dept.	Golder Ranch Fire Dist.	Green Valley Fire Dist.	Helmet Peak Fire Dist.	Marana Police Dept.	Mt. Lemmon Fire Dist.	Northwest Fire Dist.	Oro Valley Police Dept.	Picture Rocks Fire Dist.	Rincon Valley Fire Dist.	South Tucson Fire Dept.	Three Points Fire Dist.	Tohono O'odham Fire Dept.	Tucson Fire Dept.	Why Fire Dist.	Pascua Pueblo Fire	Tucson Airport Authority Fire	Pascua Pueblo Police	Tucson Airport Authority Police	Pima College Dept. of Public Safety	Sahuarita Police Dept.	South Tucson Police Dept.	Tohono O'odham Tribal Police	University of Arizona Police	Tucson Police Dept.	Pima County Sheriff's Dept.	Pima County SD-AJO	Pima County OEM & Homeland Security
29	EMS Telemetry*	3.0	5.0	4.0	4.0	4.0		5.0	4.0	1.0			3.0		4.0	3.0	3.0		4.0	5.0	3.0	1.0	4.0	1.0	4.0	0.0	0.0	4.0	4.0	5.0	5.0	N/A	1.0	3.0
28	Vehicle Location	3.0	2.0	4.0	4.0	5.0		5.0	4.0	1.0	4.0		3.0	3.0	4.0	3.0	3.0		4.0	5.0	3.0	2.0	4.0	2.0	4.0	3.0	3.0	3.0	4.0	5.0	4.0	3.0	5.0	3.0
27	Mobile Data Criticality	3.0	2.0	4.0	3.0	3.0		3.0	4.0	1.0	4.5		3.0	4.0	5.0	3.0	4.0		4.0	5.0	3.0	2.0	3.0	2.0	3.0	3.0	5.0	4.0	3.0	3.0	5.0	3.0	5.0	4.0
31	Mobile Applications	1.0	2.0	4.0	3.0	4.0		4.0	4.0	1.0	4.5		3.0	4.0	4.0	3.0	3.0		4.0	5.0	1.0	2.0	4.0	2.0	4.0	5.0	5.0	3.0	4.0	3.0	4.0	5.0	4.0	4.0
30	High-Speed Broadband Service	2.0	2.0	4.0	2.0	4.0		4.0	4.0	1.0	5.0		3.0	3.0	4.0	3.0	3.0		3.0	4.0	2.0	1.0	3.0	1.0	3.0	2.0	3.0	4.0	4.0	5.0	5.0	3.0	5.0	4.0
32	Advanced Mobile Applications	1.0	2.0	4.0	3.0	3.0		4.0	4.0	1.0	4.5		3.0	4.0	3.0	3.0	3.0		3.0	4.0	1.0	2.0	4.0	2.0	4.0	4.0	5.0	3.0	4.0	3.0	2.0	3.0	4.0	4.0
26	Cross CAD Interconnection	0.0	2.0	3.0	3.0	5.0		5.0	4.0	1.0	5.0		3.0	3.0	5.0	3.0	4.0		1.0	2.0	0.0	3.0	3.0	3.0	3.0	2.0	4.0	4.0	1.0	3.0	3.0	UNKNOWN	5.0	4.0
25	One Mobile Data Network Serves All Agencie	3.0	2.0	3.0	3.0	3.0		4.0	4.0	1.0	4.5		2.0	3.0	5.0	2.0	4.0		0.0	2.0	3.0	3.0	2.0	3.0	2.0	0.0	5.0	4.0	3.0	3.0	2.0	3.0	4.0	4.0
33	Access County Information	1.0	2.0	3.0	3.0	1.0		3.0	4.0	1.0	4.5		3.0	2.0	5.0	3.0	3.0		3.0	3.0	1.0	3.0	2.0	3.0	2.0	3.0	5.0	4.0	3.0	3.0	2.0	2.0	5.0	4.0

Ranking Scale:

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1 - Attribute is MINIMALLY IMPORTANT to the user.

2 - Attribute is NICE TO HAVE, could enhance operations.

3 - Attribute is USEFUL, will promote more efficient day to day operation.

4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.

5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

*** Overall average includes only Fire Departments**

TABLE 4-3

Dispatch Attribute Ranking

	ATTRIBUTE	OVERALL AVERAGE	LAW AVERAGE	FIRE AVERAGE	South Tucson Police Dept.	Tucson Fire Dept.	Tucson Police Dept.	Pima County Sheriff's Dept.
2	Dispatch Center Staff	5.0	5.0	5.0	5.0	5.0	5.0	5.0
13	Computer Aided Dispatch (CAD)	4.8	4.7	5.0	4.0	5.0	5.0	5.0
14	Telephone	4.8	4.7	5.0	4.0	5.0	5.0	5.0
16	Reliability	4.8	4.7	5.0	4.0	5.0	5.0	5.0
17	Maintenance	4.8	4.7	5.0	4.0	5.0	5.0	5.0
3	Technology	4.5	4.3	5.0	4.0	5.0	5.0	4.0
18	Back-Up	4.5	4.3	5.0	4.0	5.0	5.0	4.0
8	Technical	4.3	4.0	5.0	4.0	5.0	4.0	4.0
11	Radio System	4.3	4.0	5.0	4.0	5.0	3.0	5.0
1	Dispatch Center Size	4.0	3.7	5.0	4.0	5.0	3.0	4.0
12	Console	4.0	3.7	5.0	4.0	5.0	3.0	4.0
15	Interoperability with Other Agencies	4.0	3.7	5.0	5.0	5.0	3.0	3.0
4	Light	3.8	3.3	5.0	4.0	5.0	3.0	3.0
6	Cleanliness	3.8	3.3	5.0	4.0	5.0	3.0	3.0
7	Furniture	3.8	3.3	5.0	4.0	5.0	3.0	3.0
10	Internal Facilities	3.8	3.3	5.0	4.0	5.0	3.0	3.0
5	Temperature and Air Control	3.5	3.0	5.0	3.0	5.0	3.0	3.0
9	External Facilities	2.8	3.0	2.0	4.0	2.0	2.0	3.0

Ranking Scale:

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1 - Attribute is MINIMALLY IMPORTANT to the user.

2 - Attribute is NICE TO HAVE, could enhance operations.

3 - Attribute is USEFUL, will promote more efficient day to day operation.

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5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.