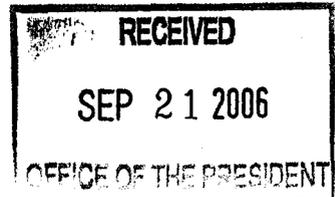




JANET NAPOLITANO
GOVERNOR

WILLIAM BELL
DIRECTOR



ARIZONA DEPARTMENT OF ADMINISTRATION
DIRECTOR'S OFFICE
100 N. 15TH AVENUE, SUITE 4001
PHOENIX, ARIZONA 85007

September 18, 2006

The Honorable Russell Pearce, Chairman
Joint Legislative Budget Committee
House of Representatives
1700 W. Washington Street
Phoenix, AZ 85007

Dear Representative Pearce:

As stipulated in the Laws of 1998, 4th Special Session, Chapter 6, Section 5 – Emergency telecommunications fund: report of expenditure plans, the Department of Administration shall report its expenditure plans to the Joint Legislative Budget Committee for review. In fulfillment of this requirement, I am enclosing:

- The Wireless Program Report for fiscal year 2006.
- The 9-1-1 financial forecast for fiscal years 2006 through 2010 incorporating the Fund Balance transfers to the General Fund during FY2003 and FY2004.
- The Status of Arizona 9-1-1 and the Estimated Costs and Deployment Schedule to Implement Wireless Phase I and Phase II.
- The 9-1-1 Phase I & II Wireless Implementation Plan.
- State of Arizona 9-1-1 GIS Standards.

Please note that the financial forecast shows a program deficit in fiscal year 2010. With additional Wireless Phase II deployments and transitioning to an IP Enabled Network, costs will continue to increase. This anticipated deficit will prevent the full implementation of the critical wireless program and may require a revenue enhancement or increase.

Should you have any questions, please contact me at 602-542-1500 or Barbara Jaeger, the State 9-1-1 Administrator at 602-542-0911,

Sincerely,



William Bell
Director

c: The Honorable Robert Burns, Chairman, Joint Committee on Capital Review
~~The Honorable Tom Bennett, Senate President~~
The Honorable James P. Weiers, Speaker of the House of Representatives
Mr. Richard Stavneak, Staff Director, JLBC
Mr. Gary Yaquinto, OSPB

Enclosures (5)

Arizona Department of Administration
State 9-1-1 Office
Wireless Program Report
2006

The State 9-1-1 program was established, through legislation in 1985, to provide a funding mechanism for the deployment and on-going costs of providing 9-1-1 services in Arizona.

Under A.R.S. § Title 43, Article 6, Telecommunications Services Excise Tax, a tax is levied for each activated wire line and wireless service account for the purpose of financing emergency telecommunications services. Current law reduced the tax from thirty-seven cents per month to twenty-eight cents per month in July 1, 2006. The tax will again be reduced to twenty cents per month on July 1, 2007.

The funds collected are administered by the Arizona Department of Administration under A.R.S. § 41-704 and rules have been established that govern the allowable expenditures and funding eligibility requirements by communities and political sub-divisions in the State.

Components eligible for funding include necessary and/or appropriate network, equipment and maintenance to handle the processing of 9-1-1 emergency calls. Of the revenue generated, the program distributes 98% of the fund for 9-1-1 call service delivery of wire line and wireless services. One percent of the revenue is allocated for local network management of contracts through the 9-1-1 system coordinators.

Accounting methodology is in effect to track all expenditures by community and/or 9-1-1 system. The revenue is also collected and reported separately between the wire line and wireless services. All Public Safety Answering Point (PSAP) equipment used to answer and handle 9-1-1 calls are budgeted under wire line expenditures, although it should be understood that the equipment is used to answer both wire line and wireless 9-1-1 calls.

The Arizona 9-1-1 Wireless Phase I & II Implementation Plan has been updated during FY06 to expand the program moving specified sites toward deployment of Phase II Wireless. Costs associated with legislative cost recovery and a copy of the plan is enclosed. The Statewide System Project plan covering each 9-1-1 System for FY07 has been updated and is also attached.

The wireless program criteria established for rollouts, stipulate that Enhanced 9-1-1 (voice, telephone number and address) has been completed for either and entire county or significant portions of a county. Each county or system must complete a Wireless 9-1-1 Service Plan, utilizing the format specified in the State guidelines and appoint a single point of contact for each county or area. The Geographic Information System (GIS) data must be completed and meet the same 95% accuracy rate as established for Enhanced Wire Line 9-1-1. Equipment mapping components will be installed prior to implementation of Wireless Phase II.

Wireless Deployment

Significant progress continues to be made in the deployment of Wireless Phase II. The two major regions in the state, Maricopa and Pima have completed their Phase II deployments constituting approximately 80% of the state's population. Additionally, the Northern Yavapai County area, which encompasses the City of Cottonwood, City of Sedona, Town of Camp Verde and surrounding Yavapai County was upgraded to Wireless Phase II.

During FY06, funds were expended from the \$1 million dollar Public Safety Answering Point (PSAP) Readiness Fund grant to complete the Geographic Information Systems (GIS) work necessary to move three counties from Wireless Phase I to Wireless Phase II. GIS completion for Graham, Pinal and Santa Cruz Counties is scheduled for September 2006, with mapping equipment being order for eight Public Safety Answering Points (PSAPs) in the three counties. Carrier Phase II service requests will go out on October 1, 2006, with implementation scheduled spring of 2007.

The completion of these projects will provide wireless Phase II service from Nogales all the way to Phoenix. Recently, Pinal County was identified as the third fastest growing county in the nation and with this deployment, the citizens will have an added level of public safety protection.

The GIS work for Graham, Pinal and Santa Cruz counties was completed for significantly less than what was originally estimated under the Scope of Work. The PSAP Readiness Fund Board is already pleased that their grant dollars have been used for specifically what it was intended for. With the funds remaining, we have been authorized to submit a subsequent Scope of Work to include other regions and counties in Arizona. Preliminary planning has identified that the next areas for deployment include the southern portion of Yavapai County, Cochise County and Mohave County and GIS work will be scheduled during FY07.

During FY06, the southern portion of Yavapai County completed their Enhanced 9-1-1 project and with the northern portion of the county already Wireless Phase II, it is logical to implement the remainder of the county. Cochise County is scheduled to complete their Enhanced 9-1-1 project during FY07, with accurate GIS data being developed in conjunction with the addressing project. These projects will be scheduled to be deployed with wireless Phase I and Phase II service during FY08.

Wireless Expenditures

During FY06, the majority of one time charges were expended for completed Wireless Phase II projects. The Northern Yavapai County project completed late in FY06 and all one time charges have not been invoiced.

The FY06 expenditures for Wireless Phase I & II are outlined in the table below.

System	FY06 Expenditures	PI/PII
Maricopa Region	\$ 4,271,456	PII
Pima County	\$ 1,528,209	PII
No. Yavapai County	\$ 308,775	PII
Pinal County	\$ 640,817	PI
Santa Cruz County	\$ 178,582	PI
Graham County	\$ 118,060	PI
City of Page	\$ 245,123	PI
City of Winslow	\$ 118,970	PI
	\$ 7,409,992	

It should be emphasized that the 9-1-1 answering equipment is fiscally allocated to wire line equipment although this equipment handles calls for both wire line and wireless 9-1-1. In future years, with the reduction of wire line services, an equitable division of equipment costs and maintenance may have to be explored.

The FY07 budget includes the following expenditures for those systems which are currently Wireless Phase I and/or Phase II. As noted some systems are scheduled for transition during the current fiscal year.

System	FY07 Budget	PI/PII
Maricopa Region	\$ 4,262,000	PII
Pima County	\$ 1,636,400	PII
No. Yavapai County	\$ 926,750	PII
Pinal County	\$ 1,364,900	PI to PII
Santa Cruz County	\$ 385,405	PI to PII
Graham County	\$ 290,150	PI to PII
City of Page	\$ 253,200	PI
City of Winslow	\$ 180,120	PI
	\$ 9,298,925	

Additional expenditures under consideration and budgeted for fiscal year 2007 are a frame relay network for deployment of an Enterprise Mapping System. With significant county boundary issues recognized, this system will allow GIS data to be distributed to the 9-1-1 centers within their county or share the data with other counties. These costs are already being expended in the Maricopa Region and Pima County because of the number of 9-1-1 centers located within that system. When a new map data is available, information can be sent via the network and updated information can be published more efficiently.

With an emphasis on Homeland Security and network restoration, the Telecommunications Service Priority (TSP) provisioning will be added during FY2007. This federal program is designed to ensure elevated network restoration to anyone who registers and pays for the service. In the event of a national disaster and federal intervention is required for network continuity, the service will ensure that Arizona's 9-1-1 systems will be restored in a timely manner.

All network components including 9-1-1 circuits, Automatic Location Identification circuits, emergency back circuits and circuits that run to all selective routers will be included in the service package.

The State 9-1-1 Office strives to reduce costs for network and equipment components. Negotiations recently completed with Qwest, will reduce the wireless selective router charges significantly in fiscal year 2007.

Revenue – FY07 Projections

Effective July 1, 2006, the Wireless Tax and Wire line Excise Tax was reduced from \$.37/mo. to \$.28/mo. by statute. The reduction for FY07 in projected revenues is based on an overall 5% increase in carrier services and the twenty per cent reduction in the tax.

There is an additional statutory reduction to \$.20/mo is scheduled for FY08 beginning in July 2007. The overall decrease reduces the revenue by almost 40% over a two year time period.

The wireless revenue for FY06 closed at \$13,620,376, a 12% increase over FY05. With these figures available and the new tax rate taken into consideration, projections indicate that the program will generate approximately \$11.5 million dollars from wireless providers in FY07.

Whereas the wireless customer base is increasing, the wire line customer base is decreasing. The original projections for FY06 estimated that the wire line base would be reduced by 3%. In reality, the base only reduced by 1%. The wire line (Excise Tax) revenue for FY06 closed at \$ \$14,116,318. Again, we offset the wire line revenue with the wireless revenue to come up with an overall 5% increase when preparing the projections.

	FY05 Actual	FY06 Actual	F07 Projected	% of Difference
	@\$.37	@\$.37	@\$.28	FY05-FY06
Wireless Tax	12,927,897	14,620,376	11,522,436	12%
Excise Tax	14,317,661	14,116,318	11,125,184	-1%
	27,245,558	28,736,694	22,647,620	5%

	FY06 Budget	FY06 Actual	% of Difference
	@\$.37	@\$.37	FY05-FY06
Wireless Tax	13,186,455	14,620,376	10%
Excise Tax	14,604,015	14,116,318	-3%
	27,790,470	28,736,694	3%

In preparing the 911 Project Plan through FY11, the tax decrease and customer base has been taken into consideration indicating that the program will reach a deficit in FY10.

In addressing the Voice over the Internet, or Internet based telephone services issues, two distinct classes of service have been identified. The broadband providers may be collecting the tax, as they view the service as similar to wire line. These carriers upload location data into the 9-1-1 data base and already have connectivity to the 911 selective routers.

The taxation issue arises with the nomadic VoIP customers, such as Vonage, who can purchase this service at a local retail store. These companies rely on the customer to make changes to the location data base in order for the call to be correctly delivered to the right PSAP. Currently, these providers do not collect the Excise Tax, because they are of the opinion that they fall outside the tax language established in Arizona Statutes. There are several such companies operating in Arizona that are not remitting taxes under existing law.

Vonage has approached the ADOA 9-1-1 Office regarding developing an MOU to collect the tax as long as the tax is specifically used for 9-1-1 purposes. Acceptable language is being reviewed at this time. None of the other nomadic vendors has made any offer and are of the opinion they fall outside Arizona's statute. It should also be noted that taxes for emergency telecommunications are not being collected today on prepaid wireless service.

Several other states have modified their legislation to include any telecommunications services that have access to 911. The ADOA 911 Office is collecting samples of these changes in order to develop legislative language that will include all types of technology services.

The Future of 9-1-1

The 911 Project Plan addresses the need to transition to a more robust and technology forward network in coming years. The IP enabled network or Next Generation 9-1-1 designs are on the drawing board today. Once industry standards are developed, costs can be determined. The move toward a single network that provides ubiquitous service will ensure that calls can be routed anywhere without current boundary restrictions.

Beginning in fiscal year 2008, funds have been allocated to begin transitioning to an IP enabled network. It must be noted that this project may take several years to come to fruition and during this time all legacy network components will require continued support.

The 9-1-1 system was designed to ensure that in an emergency, citizens have one reliable number to call for public safety assistance. The State 9-1-1 program strives to ensure that this goal is met in the most efficient and cost effective manner.

9-1-1 PROJECT PLAN (w/ \$15,000,000 Fund Transfers)
Includes Capital Cost Recovery for Wireless Phase I and Phase II

Assumes Change In Tax Rates

As of July 31, 2006

Includes Wireless & Excise Taxes at a Flat Rate of \$.37 through FY 2006, a Flat Rate of \$.28 for FY 2007 and a Flat Rate of \$.20 for FY 2008-2011

					ANNUAL INCREASE ASSUMPTIONS: 5% Operations Cost; Wireless Tax and Excise Tax based on tax rate reduction				
	Actual FY03	Actual FY04	Actual FY05	Actual FY06	Budgeted FY07	Budgeted FY08	Budgeted FY09	Budgeted FY10	Budgeted FY11
Administration	\$ 253,532	\$ 296,513	\$ 469,822	\$ 431,290	\$ 481,824	\$ 360,052	\$ 370,261	\$ 381,340	\$ 393,012
PSAP Network Management	\$ 237,059	\$ 258,625	\$ 277,526	\$ 339,232	\$ 240,912	\$ 180,026	\$ 185,130	\$ 190,670	\$ 196,506
Sub-Total	\$ 490,591	\$ 555,138	\$ 747,348	\$ 770,522	\$ 722,735	\$ 540,078	\$ 555,391	\$ 572,010	\$ 589,519
Wireline - (Existing Network Technology)	\$ 13,001,668	\$ 11,087,417	\$ 12,925,882	\$ 10,162,966	\$ 18,024,700	\$ 18,925,935	\$ 19,872,232	\$ 20,865,843	\$ 21,909,136
Wireline - (Proposed transition to IP enabled network)**						\$ 10,000,000	\$ 5,000,000	\$ 5,000,000	\$ 0
Phase I Wireless - (Includes Cost Recovery)	\$ 1,566,822	\$ 1,948,627	\$ 2,581,835	\$ 1,392,829	\$ 1,400,000	\$ 1,470,000	\$ 1,543,500	\$ 1,620,675	\$ 1,701,709
Phase II Wireless - (Includes Cost Recovery)	\$ -	\$ 3,338,435	\$ 4,341,115	\$ 5,985,541	\$ 7,989,485	\$ 8,388,959	\$ 8,808,407	\$ 9,248,828	\$ 9,711,269
TOTAL PROGRAM COSTS	\$ 15,059,080	\$ 16,929,617	\$ 20,596,180	\$ 18,311,858	\$ 28,136,920	\$ 39,324,972	\$ 35,779,530	\$ 37,307,356	\$ 33,911,632
FUNDS FROM PRIOR	\$ 22,503,370	\$ 19,497,150	\$ 25,736,153	\$ 33,122,221	\$ 44,996,452	\$ 40,950,709	\$ 19,628,322	\$ 2,361,825	\$ -
WIRELESS TAX	\$ 9,596,186	\$ 11,972,954	\$ 12,927,897	\$ 14,620,376	\$ 11,522,436	\$ 8,483,496	\$ 8,797,252	\$ 9,122,612	\$ 9,460,005
EXCISE TAX	\$ 13,914,520	\$ 13,748,484	\$ 14,317,661	\$ 14,116,318	\$ 11,125,184	\$ 8,191,015	\$ 8,493,954	\$ 8,808,097	\$ 9,133,858
INTEREST INCOME	\$ 539,577	\$ 447,181	\$ 736,690	\$ 1,449,395	\$ 1,443,558	\$ 1,328,073	\$ 1,221,826	\$ 1,136,300	\$ 1,056,759
Total Collections	\$ 24,050,284	\$ 26,168,620	\$ 27,982,249	\$ 30,186,088	\$ 24,091,178	\$ 18,002,584	\$ 18,513,033	\$ 19,067,009	\$ 19,650,622
TOTAL FUNDS	\$ 46,553,654	\$ 45,665,770	\$ 53,718,402	\$ 63,308,310	\$ 69,087,630	\$ 58,953,293	\$ 38,141,355	\$ 21,428,834	\$ 19,650,622
PRIOR PERIOD ADJ OR PROJECT CARRY-FORWARD	\$ 2,576	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TRANSFER TO GENERAL FUND	\$ 12,000,000	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
EXPENDITURES	\$ 15,059,080	\$ 16,929,617	\$ 20,596,180	\$ 18,311,858	\$ 28,136,920	\$ 39,324,972	\$ 35,779,530	\$ 37,307,356	\$ 33,911,632
FUNDS FORWARD	\$ 19,497,150	\$ 25,736,153	\$ 33,122,221	\$ 44,996,452	\$ 40,950,709	\$ 19,628,322	\$ 2,361,825	\$ (15,878,523)	\$ (14,261,010)
Wireless Tax Rate	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.28	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20

** Transition to robust IP enabled network in FY08 is pending approved standards development.

9-1-1 System	Basic	E/ANI	E9-1-1	Phase I	Phase II	Program Plan FY07
Benson			X	FY08	FY08	
Camp Verde				FY06	FY06	Proposed Enterprise Mapping Network
Clifton	X		FY08	FY11	FY11	E911 Service Plan Development
Cochise County	X		X	FY08	FY08	Complete Enhanced 9-1-1/Eq. Upgrades
Colorado City			X	FY09	FY09	Network Solution to Transfer Calls to MCSO
Cottonwood				FY06	FY06	Proposed Enterprise Mapping Network
Douglas			X	FY08	FY08	Equipment Upgrades
Flagstaff/Coconino County			X	FY09	FY09	Complete County Addressing
Gila County		X	FY08	FY11	FY11	Complete Enhanced 9-1-1
Gila River Tribal Property		X	FY07	FY08	FY08	Complete Enhanced 9-1-1
Grand Canyon		X	FY08	FY09	FY09	Complete Wireless Phase II/Enterprise Mapping
Greenlee County	X		FY08	FY11	FY11	E911 Service Plan Development
Hopi Reservation						Addressing Program
Huachuca City			X	FY08	FY08	
La Paz County			X	FY11	FY11	Equipment Replacement
Maricopa County					X	Equipment Replacement
Mohave County			X	FY09	FY09	Littlified/Beaver Dam E911 Implementation
Navajo Reservation						E911 Service Plan Development
Northeastern Ariz. Users Asso.			X	FY10	FY10	
Page				X	FY09	
Payson			X	FY11	FY11	
Prescott			X	FY08	FY08	Complete Wireless Phase II/Enterprise Mapping
Pima County					X	Equipment Upgrades
San Carlos Reservation					FY07	Service Plan Development
Sedona				FY06	FY06	Complete Wireless Phase II/Enterprise Mapping
Sierra Vista			X	FY08	FY08	Proposed Enterprise Mapping Network
Supai Reservation		X	FY09	FY09	FY09	Equipment Upgrades
Willcox			X	FY08	FY08	
Williams	X		FY07	FY09	FY09	Data Base Prep for E9-1-1
Yavapai County			X	FY08	FY08	
Yuma County			X	FY09	FY09	Proposed Enterprise Mapping Network
		None				
		Basic				
		E w/ANI				
		E9-1-1				
		WPI				
		WPPI				

The Estimated Costs and Deployment Schedule to Implement Wireless Phase I and Phase II

ADOA has worked in concert with the political subdivision to ensure compliance with the established requirements prior to deployment Wireless Phase I and Phase II. PSAPs that have not completed Phase I are being encouraged to move directly to Phase II. The 9-1-1 Program Office has established a 12 month time standard for completion of a Phase I or Phase II project. Direct deployment to Wireless Phase II will cut down on the time necessary and reduce some of the costs.

The Wireless Phase I and Phase II Systems Deployment Timeline and estimated implementation costs are listed below in chart 1. Projections are based on figures obtained from the Local Exchange Carrier (LEC), equipment vendors and the Wireless Carriers. The information in chart 2 outlines implementation and going costs for Wireless Phase I and Phase II. Additionally, these figures were obtained through the cooperative effort of the Local Exchange Carriers and the Wireless Carriers. The State 9-1-1 Office continues to negotiate with vendors to reduce the costs.

The costs outlined below may not match those figures outlined in the 9-1-1 Project plan and it is possible that projects will need to be delayed until sufficient revenue is available.

It should be noted that three Tribal Nations have not been included in the projections. Service Plans for 9-1-1 deployment have not yet been submitted for funding consideration by the Navajo Nation, Hopi Tribe or San Carlos Tribe.

The Navajo Nation is in the process of completing their 9-1-1 Service Plan and are working diligently to meet the criteria for funding eligibility. The ADOA 9-1-1 Office has an outreach program in place designed to work with the other tribes to help them to address deployment issues.

Chart 1

9-1-1 System	FY	LEC Network	Equipment & Misc. Products and Services	Wireless Carrier	Totals (Tax Included)
Apache	FY10	\$ 178,028	\$ 149,706	\$ 473,071	\$ 800,806
Cochise	FY08	\$ 433,688	\$ 1,059,320	\$ 734,681	\$ 2,227,689
Coconino	FY09	\$ 456,568	\$ 848,758	\$ 2,442,126	\$ 3,747,452
Gila	FY11	\$ 328,966	\$ 640,631	\$ 132,656	\$ 1,102,252
Graham	FY07	\$ 115,906	\$ 209,368	\$ 177,456	\$ 502,729
Greenlee	FY11	\$ 158,045	\$ 401,189	\$ 180,097	\$ 739,331
La Paz	FY11	\$ 416,237	\$ 177,908	\$ 508,090	\$ 1,102,235
Maricopa Implemented	FY06				\$ -
Mohave	FY09	\$ 422,694	\$ 692,945	\$ 254,713	\$ 1,370,352
Navajo	FY10	\$ 628,208	\$ 1,071,243	\$ 1,223,801	\$ 2,923,252
Page	FY08	\$ 232,957	\$ 326,983	\$ 167,706	\$ 727,646
Pima - Implemented	FY06				\$ -
Pinal	FY07	\$ 575,934	\$ 680,581	\$ 1,089,702	\$ 2,346,217
Santa Cruz	FY07	\$ 159,223	\$ 282,072	\$ 171,396	\$ 612,691
Winslow	FY07	\$ 167,487	\$ 326,983	\$ 253,868	\$ 748,338
Yavapai, No	FY06	\$ 92,023	\$ 8,802	\$ 671,049	\$ 771,874

Chart 2

E9-1-1 Wireless Phase I II
 Actual and Projected Expenditures
 FY06 - FY11

FY	9-1-1 System	LEC Network	Equipment Etc.	Wireless Carrier	Totals
2006 Expended					
	Graham	\$ 87,948	\$ -	\$ 30,112	\$ 118,060
	Maricopa	\$ 647,451	\$ 1,471,279	\$ 2,152,726	\$ 4,271,456
	Page	\$ 25,382	\$ -	\$ 219,741	\$ 245,123
	Pima	\$ 901,597	\$ -	\$ 626,612	\$ 1,528,209
	Pinal	\$ 524,053	\$ -	\$ 116,764	\$ 640,817
	Santa Cruz	\$ 157,858	\$ -	\$ 20,724	\$ 178,582
	Winslow	\$ 118,970	\$ -	\$ -	\$ 118,970
	Yavapai No.	\$ 63,840	\$ 159,067	\$ 85,868	\$ 308,775
2006 Total		\$ 2,527,099	\$ 1,630,346	\$ 3,252,547	\$ 7,101,217
2007 Budget					
	Graham	\$ 106,394	\$ 76,950	\$ 107,606	\$ 290,950
	Maricopa	\$ 950,000	\$ 64,000	\$ 3,248,000	\$ 4,262,000
	Page	\$ 253,320	\$ -	\$ -	\$ 253,320
	Pima	\$ 1,200,000	\$ 4,400	\$ 636,400	\$ 1,840,800
	Pinal	\$ 575,934	\$ 137,150	\$ 651,816	\$ 1,364,900
	Santa Cruz	\$ 212,400	\$ 102,200	\$ 70,805	\$ 385,405
	Winslow	\$ 118,970	\$ -	\$ 61,150	\$ 180,120
	Yavapai No.	\$ 398,380	\$ 5,000	\$ 452,370	\$ 855,750
2007 Total		\$ 3,815,398	\$ 389,700	\$ 5,228,147	\$ 8,577,495
2008					
	Cochise	\$ 133,688	\$ 1,059,320	\$ 734,681	\$ 1,927,689
	Graham	\$ 121,777	\$ 7,716	\$ 123,175	\$ 252,668
	Maricopa	\$ 716,644	\$ 53,913	\$ 2,453,353	\$ 3,223,910
	Page	\$ 232,957	\$ 326,983	\$ 167,705	\$ 727,645
	Pima	\$ 1,153,906	\$ 79,387	\$ 881,325	\$ 2,114,618
	Pinal	\$ 593,176	\$ 31,561	\$ 738,297	\$ 1,363,034
	Santa Cruz	\$ 218,542	\$ 14,309	\$ 148,355	\$ 381,206
	Winslow	\$ 167,487	\$ 326,983	\$ 253,868	\$ 748,338
	Yavapai No.	\$ 409,773	\$ 30,719	\$ 928,065	\$ 1,368,557
	Yavapai So.	\$ 336,975	\$ 274,794	\$ 190,240	\$ 802,009
2008 Total		\$ 4,084,925	\$ 2,205,685	\$ 6,619,064	\$ 12,909,674
2009					
	Cochise	\$ 387,132	\$ 50,691	\$ 518,132	\$ 955,955
	Coconino	\$ 456,568	\$ 848,758	\$ 2,442,126	\$ 3,747,452
	Graham	\$ 126,461	\$ 8,013	\$ 127,912	\$ 262,386
	Maricopa	\$ 744,207	\$ 55,987	\$ 2,547,713	\$ 3,347,907
	Mohave	\$ 422,694	\$ 692,945	\$ 2,056,067	\$ 3,171,706
	Page	\$ 240,167	\$ 13,985	\$ 111,566	\$ 365,718
	Pima	\$ 1,198,288	\$ 82,441	\$ 915,223	\$ 2,195,952
	Pinal	\$ 615,991	\$ 32,776	\$ 766,693	\$ 1,415,460
	Santa Cruz	\$ 226,947	\$ 14,859	\$ 154,061	\$ 395,867
	Winslow	\$ 172,179	\$ 13,985	\$ 171,874	\$ 358,038
	Yavapai No	\$ 425,533	\$ 31,901	\$ 963,760	\$ 1,421,194
	Yavapai So	\$ 300,851	\$ 8,013	\$ 113,760	\$ 422,624
	Yuma	\$ 367,784	\$ 730,906	\$ 1,190,087	\$ 2,288,777
2009 Total		\$ 5,684,802	\$ 2,585,260	\$ 12,078,974	\$ 20,349,036

P11 Implementation

Chart 2

E9-1-1 Wireless Phase II
 Actual and Projected Expenditures
 FY06 - FY11

FY	9-1-1 System	LEC Network	Equipment Etc.	Wireless Carrier	Totals
2010	Apache	\$ 178,028	\$ 149,706	\$ 473,071	\$ 800,805
	Cochise	\$ 401,470	\$ 52,569	\$ 537,322	\$ 991,361
	Coconino	\$ 409,140	\$ 27,797	\$ 1,655,845	\$ 2,092,782
	Graham	\$ 133,145	\$ 8,310	\$ 132,650	\$ 274,105
	Maricopa	\$ 771,771	\$ 58,061	\$ 2,717,828	\$ 3,547,660
	Mohave	\$ 380,729	\$ 51,529	\$ 855,310	\$ 1,287,568
	Navajo	\$ 628,209	\$ 1,071,243	\$ 1,223,801	\$ 2,923,253
	Page	\$ 249,063	\$ 14,503	\$ 115,697	\$ 379,263
	Pima	\$ 1,242,669	\$ 85,494	\$ 949,120	\$ 2,277,283
	Pinal	\$ 638,805	\$ 33,989	\$ 795,090	\$ 1,467,884
	Santa Cruz	\$ 235,353	\$ 15,410	\$ 159,767	\$ 410,530
	Winslow	\$ 178,556	\$ 14,503	\$ 178,240	\$ 371,299
	Yavapai No	\$ 441,294	\$ 33,082	\$ 999,455	\$ 1,473,831
	Yavapai So	\$ 311,994	\$ 8,309	\$ 117,973	\$ 438,276
	Yuma	\$ 330,918	\$ 27,796	\$ 869,136	\$ 1,227,850
2010 Total	\$ 6,531,144	\$ 1,652,301	\$ 11,780,305	\$ 19,963,750	
				\$ -	
2011	Apache	\$ 159,512	\$ 10,673	\$ 320,972	\$ 491,157
	Cochise	\$ 415,808	\$ 54,446	\$ 556,512	\$ 1,026,766
	Coconino	\$ 423,752	\$ 28,789	\$ 1,714,983	\$ 2,167,524
	Gila	\$ 328,965	\$ 640,630	\$ 132,655	\$ 1,102,250
	Graham	\$ 135,828	\$ 8,806	\$ 137,388	\$ 282,022
	Greenlee	\$ 158,045	\$ 401,189	\$ 180,097	\$ 739,331
	La Paz	\$ 416,237	\$ 177,909	\$ 508,091	\$ 1,102,237
	Maricopa	\$ 799,334	\$ 80,134	\$ 2,814,893	\$ 3,694,361
	Mohave	\$ 394,326	\$ 53,369	\$ 916,929	\$ 1,364,624
	Navajo	\$ 566,867	\$ 106,738	\$ 949,983	\$ 1,623,588
	Page	\$ 257,958	\$ 15,021	\$ 119,829	\$ 392,808
	Pima	\$ 1,287,050	\$ 88,547	\$ 983,017	\$ 2,358,614
	Pinal	\$ 661,620	\$ 35,204	\$ 823,485	\$ 1,520,309
	Santa Cruz	\$ 243,758	\$ 15,961	\$ 165,473	\$ 425,192
	Winslow	\$ 184,933	\$ 15,021	\$ 184,606	\$ 384,560
Yavapai No	\$ 457,054	\$ 34,264	\$ 1,035,150	\$ 1,526,468	
Yavapai So	\$ 323,136	\$ 8,607	\$ 122,187	\$ 453,930	
Yuma	\$ 342,737	\$ 28,789	\$ 900,176	\$ 1,271,702	
2011 Total	\$ 7,556,920	\$ 1,804,097	\$ 12,566,426	\$ 21,927,443	
Totals	\$ 30,200,288	\$ 10,267,389	\$ 51,525,463	\$ 90,828,615	

State of Arizona

9-1-1

Phase I & II Wireless

Implementation

Plan

Updated 8/28/06
Version 3

STATE OF ARIZONA
DEPARTMENT OF ADMINISTRATION
STATE 9-1-1 OFFICE

**State of Arizona
Phase I & II Wireless
Implementation Plan**

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Attachment A – “Standard” Phase I Service Agreement
Senate Bill 800 & AZ Revised Statute 12-713

Attachment B – Current Fiscal Year Wireless Budget

Attachment C – Deployment Schedule

Attachment D – Arizona GIS Standards

Phase I & II Wireless Implementation Plan

A. AUTHORITY

The Federal Communications Commission (FCC) began to explore the possibilities of extending Enhanced 9-1-1 (E9-1-1) service to wireless communications systems with FCC Docket No. 94-102. In a Report and Order issued on July 26, 1996 (FCC 96-264), the FCC ordered that the development and implementation of E9-1-1 service for wireless communications systems be accomplished in two phases.

Phase I of the requirement specifies that wireless E9-1-1 calls provide Automatic Number Identification (ANI) and the location of the base station or cell site receiving the call. Phase II requires that covered carriers have the capability to identify the latitude and longitude of a mobile unit making the 9-1-1 call, within a radius of no more than 125 meters in 67 percent of all cases. Wireless carriers were to be ready to deliver Phase II calls by October of 2001. However, an extension has been given to the carriers until December 2005. To date, there are still a handful of rural carriers that have requested an extension to their original waivers.

The criteria for deployment of Phase II versus Phase I will be the readiness of the county, as well as, the availability of 9-1-1 funds.

The covered carriers are to deliver enhanced wireless service within six months of receipt of a "Request for Service" letter from the Public Safety community, or their representative.

In response to the FCC Report and Order, in 2001 the State of Arizona passed legislation (House Bill 2625) to develop parity between the wire line and wireless excise tax and set a rate of \$.37 per month per access/service line, and to include cost recovery for carrier services.

Currently there are two tax reductions in the statutes. In FY07 the tax is set at \$.28 and in FY08 it is set at \$.20. Our updated budget projections indicate a deficit will occur in FY10.

Arizona's Administrative Code (Section R2-1-409) defines what costs, subject to available monies, shall be reimbursed.

Phase I & II Wireless Implementation Plan

B. HISTORY OF WIRE LINE & WIRELESS 9-1-1 IN ARIZONA

Wire Line E9-1-1

History

1975 – Arizona’s first 9-1-1 system was installed in the City of Sierra Vista. Safford and Sedona followed shortly thereafter.

January, 1985 – The City of Tucson was the first Arizona city to implement Enhanced 9-1-1 service.

July 1985 - The Arizona State Legislature adopts the Emergency Telecommunications Services Revolving Fund. The fund was established for on-going implementation of emergency 9-1-1 systems throughout the state.

Surcharge

2001 – House Bill 2625 develops parity between wire line and wireless, and the excise tax is increased to \$.37 per month.

Coverage

September 2003 –100% of the state has 9-1-1 access, and 96% of telephone service is served by Enhanced 9-1-1.

Wireless E9-1-1

History

July 1996 - In a Report and Order issued on July 26, 1996 (FCC 96-264), the FCC ordered that the development and implementation of E9-1-1 service for wireless communications systems be accomplished in two phases and carriers are entitled to full cost recovery for delivering the E9-1-1 call. The covered carriers were to deliver Phase I calls within six months of receipt of a “Request for Service” letter from the Public Safety community, or their representative. Covered carriers were to be ready to deliver Phase II calls by October of 2001..

1998 – Arizona’s first Phase I Wireless project is kicked off in Pima County.

1999 – Verizon Wireless is the first Phase I compliant wireless service provider in Pima County.

Phase I & II Wireless Implementation Plan

2000 – As recommended by the FCC in their 1996 ruling, the State of Arizona passed legislation allowing the wireless carriers full cost recovery. Within a week of that legislation being placed into law, the FCC reversed their cost recovery decision. They wrote, “disputes about the meaning of the cost recovery mechanism have become a significant impediment to implementation of Phase I”. The agency therefore determined to “delete from the E911 rules the condition that requires a cost recovery mechanism for carriers to be in place before a wireless carrier is obligated to implement E911”.

2002 – Pima County’s Phase I project is completed with 8 wireless carriers providing Phase I service.

August 2002 – The State’s 9-1-1 Office begins a project to deploy Phase I wireless statewide.

2003 – Pinal County completed implementation of Phase I service with 8 wireless service providers.

2003 - Graham County completed implementation of Phase I service with 2 wireless service providers.

2004 – Santa Cruz County completed implementation of Phase I service with 7 wireless service providers.

2005 – The City of Page, E9-1-1 system and the City of Winslow, E9-1-1 system completed implementation of Phase I service.

February 2005 – Pima County completed implementation of Phase II with the exception of Tier III provider, Comnet.

September 2005 – Maricopa completed implementation of Phase II with exception of Tier III provider, Comnet.

October 2005 – GIS work underway for compliance in Graham, Pinal and Santa Cruz counties for deployment of Phase II

April 2006 – Northern Yavapai County completed implementation of Phase II. This area consists of the Sedona, Camp Verde and Cottonwood and surrounding Yavapai County.

Surcharge

1997 – Senate Bill 1441 adds a \$.10 per month excise tax on wireless service.

Phase I & II Wireless Implementation Plan

2001 – House Bill 2625 develops parity between wire line and wireless, and the excise tax is increased to \$.37 per month.

2006 – Excise tax reduced to \$.28 per month beginning July 1, 2006.

2007 – Excise tax scheduled for reduction to \$.20 per month beginning July 1, 2007.

Coverage

Approximately 80% of the population base is Phase II. During fiscal year 2007, Graham, Pinal and Santa Cruz counties are scheduled for implementation to Phase II.

Phase I -
Graham County
Pinal County
Santa Cruz County
City of Page
City of Winslow.

Phase II –
Maricopa Region includes Apache Junction
Pima County
Northern Yavapai County

Phase I & II Wireless Implementation Plan

C. CONSIDERATIONS

In order to deliver Phase I or Phase II Wireless service to Arizona's public safety community there are a number of issues that need consideration.

Funding

First and foremost, funding must be available to cover the projected costs. Fortunately, with the signing of House Bill 2625 (May 2001), Governor Hull increased the wire line excise tax from 26 cents to 37 cents per access line. That same legislation mandated that wireless service lines should be taxed at the same rate. This increase made strides to ensure that the project would be sufficiently funded.

Within the 2001 legislation, stipulations were also made to reduce the tax basing the conclusion that system Phase II deployment would be completed by FY2008.

The current projections for total statewide deployment will extend the date to FY2011 and implementation is subject to progress being made by local jurisdictions.

Technology Platform

A second consideration is ensuring that, within budget parameters, the most effective and efficient enhanced wireless system is deployed. A key issue is ensuring that all wireless 9-1-1 calls, along with their associated data, can be transferred without delay to other PSAPs in the state. Further, it is necessary that the systems have the ability to transfer the wireless call to another PSAP's wire line and/or wireless 9-1-1 network.

Based on expertise level and customer preference, all counties in the state (with the exception of Maricopa County) will utilize a network solution. That is, the wireless platform will be built around a Local Exchange Carrier's (LEC's) enhanced wireless offering.

Maricopa Region decided to utilize a private switch solution which would better serve their technical and financial needs.

Frontier Communications serves parts of Apache and Navajo County, and all of Mohave County. In order to provide these entities with Phase II service, Frontier is currently in the process of upgrading their platform around CML Selective Routers.

Phase I & II Wireless Implementation Plan

Phase I versus Phase II

If a county is ready to receive Phase II service – i.e., they have developed an MSAG (Master Street Address Guide) valid GIS (Geographic Information System) file and there are processes in place to keep it current – then Phase II will be deployed if requested by the county (funds permitting). If the county has not completed that task, Phase I will be deployed.

Phase I & II Wireless Implementation Plan

FCC Mandated Prerequisites

The FCC (Federal Communications Commission) has ruled that a PSAP shall document their ability to receive and utilize the E9-1-1 data being requested. Therefore, the PSAP must meet, and in some cases exceed, the prerequisites set forth.

Deployment Schedule

Deployment can only be achieved through a phased approach. Therefore, the sequence of deployment is also a consideration. The State's 9-1-1 Office has developed a schedule (Section I) which uses greatest need and regional efficiencies as the criteria for deployment. In addition, the agreement, readiness, and cooperation of the individual PSAPs also came into play.

Project Management

The State of Arizona's 9-1-1 Office has resources available to provide project management for Phase I and Phase II projects. Those resources will be made available as defined in the deployment schedule (Section I).

Should a County/9-1-1 jurisdiction choose to manage the project themselves, that is acceptable. The rules and requirements stated in this document still apply.

Should a County/9-1-1 jurisdiction reject the rules and/or requirements stated in this document, the State of Arizona's 9-1-1 Office will not provide project management support. Penalties defined or not defined, fiscal and otherwise, will be borne by the County/9-1-1 jurisdiction.

Phase I & II Wireless Implementation Plan

D. RULES & PSAP/COUNTY REQUIREMENTS

Although the State's 9-1-1 Office will manage the Phase I and II projects, the public safety community has a role and responsibilities as well. Following are the PSAP/county requirements that will be used to administer the project.

Qualified Applicants

Since Phase I and II technologies require an ALI display, deployment will be offered only to those PSAPs that are fully Enhanced (receiving both ANI and ALI). PSAPs that have Basic or Enhanced with ANI Only service will not qualify for enhanced wireless until they are upgraded to fully Enhanced service with their wire line service.

9-1-1 Wireless Administrator

Each county/wireless 9-1-1 system will identify a person that will serve as their single point of contact. This person will be known as the "9-1-1 Wireless Administrator" and will be responsible to:

- Work with PSAPs within their wireless system, and as necessary with 9-1-1 Wireless Administrators from adjoining counties, to ensure that the wireless needs of all PSAPs are being met.
- Organize and attend related project meetings.
- Drive/make the decisions relevant to the project, including routing and network design.
- Serve as the "single point of contact" to the State's 9-1-1 Office, wireless service providers (WSPs), and other individuals/organizations involved in delivery of Enhanced Wireless service.
- Determine whether service agreements are appropriate; and if so, negotiate contacts.
- Ensure that PSAP personnel are provided the information necessary to handle Phase I and/or Phase II calls.
- Complete a Wireless 9-1-1 Service.
- Continue to manage, on a going forward basis, the relationship with the wireless service providers.

Note: Some of the aforementioned tasks will need input from the respective PSAPs in the county. It will be the 9-1-1 Wireless Administrator's responsibility to work with the PSAPs to ensure decisions are made, and tasks are performed.

Phase I & II Wireless Implementation Plan

Note: If the 9-1-1 system will not name a 9-1-1 Wireless Administrator, the State's 9-1-1 Office will not provide project management support. If the 9-1-1 system does fill that position, but the person fails to perform the assigned tasks, the 9-1-1 Office will stop project management of that system's enhanced wireless deployment until another person is named and gets engaged in his/her assigned responsibilities. In the event that the 9-1-1 Office does not provide project management support, all responsibilities will fall to the PSAP(s)/9-1-1 system. Additionally, any costs incurred because of non-performance or unreasonably slow performance by the 9-1-1 Wireless Administrator, and/or his representatives, will be the responsibility of the county (versus Arizona's 9-1-1 Fund).

Countywide Deployment

All applicable PSAPs (those that will receive Phase I or Phase II wireless calls) within a given county will work together so that:

- Decisions regarding routing are agreed to by all involved, and
- Implementation of enhanced wireless service can be accomplished at the same time, countywide

To facilitate this, it may be appropriate that the 9-1-1 Wireless Administrator heads a working group represented by all applicable PSAPs.

Network Design Decisions

The 9-1-1 Wireless Administrator will facilitate decisions concerning network design. Each PSAP has options concerning how they want to receive wireless 9-1-1 calls. The options are:

- Receive wireless calls over the existing wire line EM trunks (selective router to PSAP) or
- Receive wireless calls over a new set of EM trunks (selective router to PSAP) dedicated to wireless.

Additionally, depending on the 9-1-1 platform being utilized, there may be the necessity to design ALI circuits and/or interoffice circuits.

Routing

The 9-1-1 Wireless Administrator will facilitate decisions concerning routing. There should be collective agreement between all PSAPs in the county regarding:

- Which PSAPs will be a "primary" wireless PSAP, and which will serve as "secondary" wireless PSAP. The choice of primary or secondary does not need to follow suit with the choices made in the wire line environment.
- Which PSAP will receive the call for each cell site and/or each cell face.

Phase I & II Wireless Implementation Plan

Phase I/II Service Agreements

Each 9-1-1 Wireless Administrator will be responsible to work with the appropriate people within their county to determine whether they wish to pursue service agreements with the WSPs. If they do, the responsibility of presenting, negotiating, and finalizing those agreements are the total responsibility of the 9-1-1 Wireless Administrator. The 9-1-1 Office will serve as a resource; however, will not manage nor negotiate the contracts.

The 9-1-1 Office has worked with Pinal County's legal division to develop a "standard" Phase I agreement (Attachment A). If desired, this agreement can be used by the County to negotiate service.

Indemnity protection has been provided to the PSAPs under federal and state legislation. Senate Bill 800 and Arizona Revised Statute 12-713 is provided, in part, in Attachment A.

Non-Disclosure Agreements (NDA)

As with the service agreement, the 9-1-1 Office will not manage nor negotiate a NDA on behalf of the county – that will be the responsibility of the 9-1-1 Wireless Administrator.

It should be noted that if the county decides to pursue a service agreement and uses the "standard" agreement in Attachment A, there is non-disclosure language included in that agreement.

Payment Responsibility

Each 9-1-1 system and/or county will be responsible to receive and process bills with the State of Arizona's 9-1-1 Office in the same manner as they manage their wire line 9-1-1 service.

Wireless Service Plan

Arizona's Administrative Code states that a service plan shall be submitted as part of the County/9-1-1 jurisdiction application for funds. This process holds true for both wire line and wireless funding. The wireless service plan should be started prior to the Request for Service Letter being sent and should continue to be developed (as information becomes available) throughout the project. Completion of the plan should coincide with the completion of the project.

Phase I & II Wireless Implementation Plan

Equipment Requirements

In order for a PSAP to qualify for Phase I or Phase II service, that communications center must ensure that:

- Their PSAP equipment is capable of receiving Phase I ALI fields. (If on the Qwest platform ALI formats - 30B, 30C, 30D and 30W meet the requirements.)
- Their PSAP equipment is capable of receiving 10-digit ANI.
- Their PSAP equipment is equipped to receive new EM trunks, if new EM trunks are requested.
- A GIS (Graphic Information System) file and mapping equipment is in place if requesting Phase II service.

Meeting FCC Mandated Prerequisites

The FCC has established rules that must be met and documented by the PSAP prior to the agency requesting Phase I or Phase II service. Those three rules, and Arizona's requirements relevant to those rules, follow:

Rule #1 - Funding Mechanism

- **FCC Rule:**
A funding mechanism must exist for recovering the PSAP's cost for the facilities and equipment that are necessary to receive and utilize the E9-1-1 data elements being requested.
- **PSAP's Responsibility Regarding Meeting Rule #1**
Phase I & II Wireless Implementations
A) This requirement is met for Phase I & II. The following Arizona Revised Statutes provides the funding mechanism required.
ARS §41 Emergency Telecommunications Services; Administration;
Revolving Fund 41-704, B.

Rule #2 - Equipment Requirement

- **FCC Rule:**
The PSAP has ordered the equipment necessary to fulfill its obligations, and that equipment is already installed or is scheduled to be installed and operable by the end of the six-month period (e.g., provide a list of facilities and copies of relevant purchase orders, with purchase orders demonstrating commitment to vendor performance within six month period or other substantiation of vendor commitment to perform within six month period).

Phase I & II Wireless Implementation Plan

- **PSAP's Responsibility Regarding Meeting Rule #2**

Phase I & II Wireless Implementations

A) This implementation plan requires that a PSAP be fully Enhanced in the wire line environment (i.e., the PSAP receives both ANI and ALI) before the State's 9-1-1 Fund will reimburse for Phase I or II costs. Therefore, a fully Enhanced PSAP automatically meets this requirement since the call center is already provisioned with the necessary equipment, as well as, ALI circuits and data stream to receive Phase I features.

Phase II Wireless Implementations

A) In order to meet this requirement certain equipment and features (which are not necessary for wire line E9-1-1 or Phase I Wireless) must be provisioned. Specifically, a data stream that will allow the delivery of the X and Y coordinates (for PSAPs served by Qwest's 9-1-1 service, this is the 30W ALI data stream). Plus, mapping equipment to capture and pinpoint the X/Y coordinates (a.k.a. latitude and longitude).

B) There is a widely accepted interpretation regarding meeting this rule. Some reason that the PSAP needs to be able to receive the X and Y coordinates; but that the PSAP does not need electronic/digital equipment to receive and pinpoint the coordinates. It is argued that tools such as paper maps or manually accessed web sites can serve as the equipment. The State of Arizona's 9-1-1 Office, and this plan, does not totally accept this interpretation. Rather, Arizona's criteria are as follows:

- 1) All call centers that serve as a Primary PSAP for wireless 9-1-1 calls, must have electronic/digital equipment in place at the time the "Request for Service" letter is sent to the WSP. This equipment can be a component of the PSAP's 9-1-1 equipment, or a component of the CAD (Computer Aided Dispatch).
- 2) In addition, that Primary PSAP must also have the data stream that receives the X and Y coordinates (in Qwest's environment that's 30W) provisioned and working at the time the Request for Service letter is sent.
- 3) Call centers that serve as a Secondary PSAP for wireless 9-1-1 calls, are not required to have equipment in place before the request letter is sent. However, that PSAP must be in the planning/implementation stage of provisioning electronic/digital mapping equipment – with turn-up set two months prior to the end of the WSP's 6-month window. (In other words, the target date for turn-up of this equipment should be no more than 4 months from the date of the request letter.)
- 4) The same conditions that are outlined for mapping equipment in a Secondary PSAP (above in section 3) apply to the implementation of the X and Y coordinates.

Phase I & II Wireless Implementation Plan

C) It is very important to note that if the Secondary PSAP(s) can not receive the X/Y coordinates or have their mapping equipment completely installed and operational 6 months from the date of the request letter, there will be financial penalties. From the date that the 6 month installation period ends, until the date that all Secondary PSAPs have fully met the equipment and data stream requirements, the State's 9-1-1 Fund will not reimburse the Qwest Communications' or Wireless Service Providers' monthly costs associated with Phase II. These amounts are substantial and will fall to the County/9-1-1 jurisdiction to pay. Additionally, should the WSPs or FCC assign financial penalties because the 9-1-1 system is not ready, these cost will also fall to the County/9-1-1 jurisdiction.

Phase I and/or II Wireless Implementations

A) Two necessary and critical equipment components of Phase I and II service are the selective router and ALI database. When a PSAP chooses to utilize an existing 9-1-1 platform, such as provided by Qwest Communications, those components are in place and operational and need no consideration. Should, however, a PSAP/jurisdiction determine that it is in their best interest to provision and/or own their own 9-1-1 platform then these components must be considered. Specifically, the selective router should be installed and accepted by the customer before the Request for Service letter is sent, with the ALI database ready to accept records at that time.

B) If the timeline defined above is not adhered to, and the PSAP(s)/jurisdiction are not ready to accept service when the wireless service provider(s) are ready to deliver it, there will be financial penalties. Specifically, from the date that the 6 month installation period ends, until the date that the selective router is fully operational (including all associated network components) and the ALI database is loaded and operational, the State's 9-1-1 Fund will not reimburse the Qwest Communications', Wireless Service Providers, or other related vendors the monthly costs associated with the service. These amounts are substantial and will fall to the County/9-1-1 jurisdiction to pay. Additionally, should the WSPs or FCC assign financial penalties because the 9-1-1 system is not ready, these cost will also fall to the County/9-1-1 jurisdiction.

Phase I & II Wireless Implementation Plan

Documentation of Meeting Equipment Requirements

A) Because the wireless service providers request documentation relevant to the PSAP's status, the 9-1-1 Wireless Administrator must compile information (per PSAP) relevant to their mapping equipment, ALI data stream, and (where appropriate) selective router status. (A form will be provided by the State's 9-1-1 Office to meet this need.)

Rule #3 – LEC Trunking

- **FCC Rule:**

The PSAP has made a timely request to the proper LEC for the facilities and any facility related equipment necessary to receive and utilize Phase I and II data elements (e.g., letter of request and any pertinent correspondence between the PSAP and the LEC).

- **PSAP's Responsibility Regarding Meeting Rule #3**

Phase I & II Wireless Implementations

A) Relevant to the Qwest 9-1-1 platform, the only network facility that might apply is the addition and/or rearrangement of EM trunks (trunks between the selective router and the PSAP). These trunks must be ordered shortly before, or after, the Request for Service letter, with turn-up targeted in the middle of the six-month implementation period. It may also be necessary to order trunk interface cards if the PSAP is increasing their total number of EM trunks.

B) Relevant to a 9-1-1 platform where the networking (i.e., ALI circuits and interoffice facilities) is not already in place, those facilities must be ordered 30 days prior to the Request for Service Letter is sent with an installation date set for 4 months prior to the six-month end date.

Additonal State of AZ Phase II Requirements

- A) A GIS file that meets all requirements set forth in Arizona Standards (Attachment D)
- B) A GIS file that is complete for all areas served by Phase II
- C) A process in place to maintain and distribute updates to GIS
- D) An approved Wireless 9-1-1 Service Plan
- E) Sufficient funds in the State's 9-1-1 Fund to cover Phase II costs

To facilitate this, it may be appropriate that the 9-1-1 Wireless Administrator heads a working group represented by all applicable PSAPs.

Phase I & II Wireless Implementation Plan

E. NETWORK DESIGN

Non-Call Path Associated Signaling

The network technology that will be utilized to deliver the Phase I wireless calls in Arizona will be a form of the Non-Call-Path Associated Signaling (NCAS) solution (the specific solution will be the call of the WSP). Arizona's PSAPs are not provisioned to receive a CAS (Call-Path Associated Signaling).

Wireless Service Providers Network

The wireless service providers will have the option of connecting to the selective router with Signaling System Seven (SS7) or with CAMA Enhanced MF trunks. They will also be free to elect the Service Control Point (SCP) vendor and database vendor of their choice.

Routing

Routing for Phase I wireless calls will be determined by the location of the tower receiving the E9-1-1 call. The call will be routed to a pre-determined PSAP based on location of the tower within an E9-1-1 area. In cases where the tower is in close proximity to two or more E9-1-1 service areas; and the tower has a three-sector antenna; and if a majority of one of the sectors lies in a different E9-1-1 service area, routing can be done based on tower sectors.

Routing Phase II will be determined by the location of the wireless caller. A CRDB (Co-ordinate Routing Database) is part of the Phase II network configuration and will facilitate routing.

It will be responsibility of the public safety community to work with the carrier to designate the appropriate routing and response boundaries.

EM Trunks (a.k.a. 9-1-1 Trunks)

The trunks delivering calls from the selective router to the PSAP are known as EM trunks. Each PSAP has a trunk group of two or more trunks for their wire line E9-1-1 calls. Each PSAP that will receive Phase I or Phase II calls will be given the option to utilize the existing EM trunk group for wireless calls (in addition to the existing wire line calls), or to install a new set of EM trunks that will be used only for wireless call delivery.

With the assistance of Qwest, the provider of those trunks, the PSAP will also determine the appropriate size of those trunk groups.

F. DEPLOYMENT SCHEDULE

The deployment schedule, is updated annually using (1) greatest needs (2) regional efficiencies and (3) ,PSAP agreement, readiness and cooperation as the criteria. Available funding is also ensured.

The most recent schedule was included with the April 2006 report and has been reviewed and included in this report.

Deployment is only scheduled for those areas currently, or soon to be, provisioned with Enhanced 9-1-1 service. As other 9-1-1 systems become Enhanced, they will be added to the schedule.

G. GLOSSARY

Following is a listing of relevant definitions and abbreviations that are contained in this plan.

Access Line - means the telephone service line which connects a subscriber's main telephone(s) or equivalent main telephone(s) to the telephone company's switching office.

Automatic Location Identification (ALI) - means a system capability that enables an automatic display of information defining a geographical location of the telephone used to place the 9-1-1 call.

Automatic Number Identification (ANI) - means a capability that enables the automatic display of the number of the telephone used to place the 9-1-1 call.

Call Attendant - means the person who initially answers a 9-1-1 call.

Call Transfer - means the call attendant determines the appropriate responding agency and transfers the 9-1-1 caller to that agency.

Central Office (CO) - means a telephone company facility that houses the switching and trunking equipment serving telephones in a defined area.

Centralized Automated Message Accounting (CAMA) - An MF signaling protocol originally designed for billing purposes, capable of transmitting a single telephone number.

Customer Premises Equipment (CPE) - Terminal equipment at a PSAP.

Emergency Call - means a telephone request for service which requires immediate action to prevent loss of life, reduce bodily injury, prevent or reduce loss of property and respond to other emergency situations determined by local policy.

Emergency Service Number (ESN) - A three to five digit number representing a unique combination of emergency service agencies designated to serve a specific range of addresses within a particular geographical area. The ESN facilitates selective routing and selective transfer, if required, to the appropriate PSAP and the dispatching of the proper services.

Enhanced 9-1-1 (E9-1-1) - means the general term referring to emergency telephone systems with specific electronically controlled features, such as ALI, ANI, and selective routing.

Phase I & II Wireless Implementation Plan

Exchange - means a defined geographic area served by one or more central offices in which the telephone company furnishes services.

Feature Group D (FGD) - An MF signaling protocol, originally developed to support equal access to long distance services, capable of carrying one or two ten digit telephone numbers.

Implementation - means the activity between the formal product/delivery agreement reached by the PSAPs and the carriers, and commencement of operations.

Integrated Services Digital Network (ISDN) - A digital interface providing multiple channels for simultaneous functions between the network and CPE.

Mobile Directory Number (MDN) - The callback number associated with a wireless phone.

Mobile Switching Center (MSC) - The wireless equivalent of a Central Office, which provides switching functions from wireless calls.

Multi-Frequency (MF) - A type of signaling used on analog interoffice and 9-1-1 trunks.

Local Exchange Carrier (LEC) - A telecommunications carrier under the state/local Public Utilities Act that provide local exchange telecommunications services.

9-1-1 Call - means any telephone call that is made by dialing the digits 9-1-1.

9-1-1 System - means a telephone system that automatically connects a caller, dialing the digits 9-1-1, to a PSAP.

Nonrecurring Costs - means one-time charges incurred by a joint E9-1-1 service board or operating authority including, but not limited to, expenditures for E9-1-1 service plan preparation, surcharge referendum, capital outlay, installation, and initial license to use subscriber names, addresses and telephone information.

One-Button Transfer - means another term for a (fixed) transfer which allows the call attendant to transfer an incoming call by pressing a single button. For example, one button would transfer voice and data to a fire agency, and another button would be used for police, also known as "selective transfer."

Phase I, Wireless 9-1-1 Service - means an emergency wireless telephone system with specific electronically controlled features such as ANI, specific indication of wireless communications tower site location, selective routing by geographic location of the tower site.

Phase I & II Wireless Implementation Plan

Phase II, Wireless 9-1-1 Service - means an emergency wireless telephone system with specific electronically controlled features such as ANI and ALI and selective routing by geographic location of the 9-1-1 caller.

Political Subdivision - means a geographic or territorial division of the state that would have the following characteristics: defined geographic area, responsibilities for certain functions of local government, public elections and public officers, and taxing power. Excluded from this definition are departments and divisions of state government and agencies of the federal government.

Provider - means a person, company or other business that provides, or offers to provide, 9-1-1 equipment, installation, maintenance, or access services.

Pseudo Automatic Location Identification (pALI) - An ALI record associated with a pANI, configured to provide the location of the wireless cell of sector and information about its coverage or serving area.

Pseudo Automatic Number Identification (pANI) - A telephone number used to support routing of wireless 9-1-1 calls. It may identify a wireless cell, cell sector of PSAP to which the call should be routed.

Public or Private Safety Agency - means a unit of state or local government, a special purpose district, or a private firm, which provides or has the authority to provide firefighting, police, ambulance, or emergency medical services.

Public Safety Answering Point (PSAP) - means a 24-hour, state, local, or contracted communications facility, which has been designated by the local service board to receive 9-1-1 service calls and dispatch emergency response services in accordance with the E9-1-1 service plan.

Public Switched Telephone Network - means a complex of diversified channels and equipment that automatically routes communications between the calling person and called person or data equipment.

Recurring Costs - means repetitive charges incurred by a joint E9-1-1 service board or operating authority including, but not limited to, database management, lease of access lines, lease of equipment, network access fees, and applicable maintenance costs.

Selective Routing (SR) - means an enhanced 9-1-1 system feature that enables all 9-1-1 calls originating from within a defined geographical region to be answered at a pre-designated PSAP.

Phase I & II Wireless Implementation Plan

Service Control Point (SCP) – means a centralized database system used for, among other things, wireless E9-1-1 service applications. It specifies the routing of 9-1-1 calls from the cell site to the PSAP and includes all relevant cell site location information.

Signaling System 7 (SS7) - An inter-office signaling network separate from the voice path network, utilizing high-speed data transmission to accomplish call processing.

Subscriber - means any person, firm, association, corporation, agencies of federal, state and local government, or other legal entity responsible by law for payment for communication service from the telephone utility.

Tariff - means a document filed by a telephone company with the state telephone utility regulatory commission that lists the communication services offered by the company and gives a schedule for rates and charges.

Telecommunications Device for the Deaf (TDD) - means any type of instrument, such as a typewriter keyboard connected to the caller's telephone and involving special equipment at the PSAP which allows an emergency call to be made without speaking, also known as a TTY.

Trunk - means a circuit used for connecting a subscriber to the public switched telephone network.

Wireless Communications Service - means cellular, broadband PCS, and SMR that provide real-time two-way interconnected voice service, the networks of which utilize intelligent switching capability and offer seamless handoff to customers. This definition includes facilities-based service providers and non-facilities based resellers. For purposes of wireless 9-1-1 surcharge, wireless communications service does not include services whose customers do not have access to 9-1-1, or a 9-1-1-like service, a communications channel utilized only for data transmission, or a private telecommunications system.

Wireless Communications Surcharge - means a surcharge imposed on each wireless communications service number provided in this state and collected as part of a wireless communications service provider's monthly billing to a subscriber.

Wireless Service Provider (WSP) – a communications carrier who provides wireless service.

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Arizona 9-1-1 GIS Standards

Document Description and Purpose

This document contains the State of Arizona's 9-1-1 Geographic Information System (GIS) standards. These standards were developed for two reasons; 1) to ensure a high level of accuracy for State funded mapped ALI systems and 2) to assist each 9-1-1 system with their GIS/mapped ALI endeavors.

The State of Arizona Phase I & II Wireless Implementation Plan states:

If a county is ready to receive Phase II service – i.e., they have developed an MSAG and valid GIS file and there are processes in place to keep it current – then Phase II will be deployed if requested by the county (funds permitting).

The purpose of this document is to define a “valid GIS file”. This document also contains GIS requirements for 9-1-1 systems that plan to upgrade to mapped ALI (i.e., mapping on wire line calls).

NOTE: 9-1-1 Systems that were installed prior to these standards being put in place must still adhere to the GIS requirements listed below. Their GIS data will be evaluated and deadlines will be set for making modifications.

These standards have been developed during a period when no national standards are in place. Should national standards be developed and approved, Arizona's 9-1-1 Office will evaluate those standards and make modifications to AZ's standards, as deemed appropriate.

GIS Data Requirements

In order to have an effective, fully operational Mapped ALI/Dispatch mapping software program, three GIS data layers are required for use with the mapped ALI software. These data layers include the street centerlines, Emergency Service Number (ESN)/Emergency Service Zone (ESZ) boundaries, and community boundaries. There are also certain data layer attributes that are required for these data layers to be effective. The required data attributes for these GIS data layers are listed below. In addition, the NENA GIS Data Model can be found in APPENDIX A. This model may be helpful to agencies that are modifying or creating new GIS layers for use in 9-1-1 and/or public safety.

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Required GIS Data Layers

Mapped ALI software requires three GIS data layers to function properly. The three layers are street centerlines, ESN/ESZ boundaries, and community boundaries. The specific field requirements for these layers are outlined below.

Street Centerline

1. Must include the following fields (see APPENDIX A for field type and length):

- a. Prefix Directional
Examples: N, S, E, W
- b. Street Name
Examples: Main, 1ST, Jefferson
- c. Street Type
Examples: Rd, Ave, Blvd
- d. Suffix Directional
Examples: N, S, E, W
- e. Left From Address
Examples: 1, 101, 1200
- f. Left To Address
Examples: 99, 199, 1298
- g. Right From Address
Examples: 2, 100, 1201
- h. Right To Address
Examples: 98, 198, 1299
- i. Left ESN and/or Left Community
Examples: 100, PHX
- j. Right ESN and/or Right Community
Examples: 100, PHX

Other Recommended Fields:

- k. Oneway (if oneways exist)
Examples: Y, N, 1, 0
- l. Alias Street Name (if one or more streets contain multiple names)
Examples: W Marconi Ave
- m. Road Classification
Examples: 1, 2, 3, A, B, C
- n. Source of Update
Examples: AI, adamiten
- o. Date of Update
Examples: 20041222

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ESN/ESZ Boundaries

1. Must include the following fields (see APPENDIX A for field type and length):

a. ESN

Examples: 100, 201, 286

b. PSAP Name

Examples: Sedona FD, Yuma PD

c. Fire

Examples: Sedona FD, Yuma FD

d. Medical

Examples: Southwest Ambulance, Sedona FD

e. Law

Examples: Sedona PD, Yuma PD

Community Boundaries

1. Must include the following fields (see APPENDIX A for field type and length):

a. Community Name

Examples: Phoenix, Page

Other Useful GIS Layers (not required)

Address Points: point locations of all addressable sites/structures

Parcel Boundaries: map layer of property parcel boundaries

Hydrology: lines and polygons depicting water ways

Railroads: lines depicting railroads

Fire Hydrants: point locations of fire hydrants

Mile Markers: point locations of mile markers

Township/Range Boundaries: map layer of township and range boundaries

Emergency Buildings: point locations of emergency buildings

Cell Towers: point locations of cell towers

Cell Coverages: pie-shaped polygons depicting cell coverage areas

Common Places: point locations of well known structures and/or areas

Parks/Cemeteries: polygons representing park and cemetery locations

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Metadata

Every 9-1-1 System will eventually exchange GIS data with surrounding 9-1-1 Systems. For this reason, it is necessary for agencies to maintain metadata for each GIS data layer used in the mapped ALI systems.

Metadata, as defined by ESRI:

Information about the content, quality, condition, and other characteristics of data. Metadata for geographic data may document its subject matter; how, when, where, and by whom the data was collected; accuracy of the data; availability and distribution information; its projection, scale, resolution, and accuracy; and its reliability with regard to some standard.

A sample GIS metadata form can be found in APPENDIX B. The State of Arizona requires that the following information be included in your GIS metadata:

Publication Data (Author and Date): see metadata under *Identification Information*

Map Projection: see metadata under *Spatial Reference Information*

Spatial Accuracy: see metadata under *Data Quality Information*

Contact Information: see metadata under *Identification Information*

***Please contact the State's 9-1-1 GIS Coordinator with any metadata related questions.

Spatial Accuracy Requirements

The advent of FCC Wireless Phase I and II wireless 9-1-1 has elevated the importance of having spatially accurate GIS data. With the implementation of Phase II, the location of the wireless caller is plotted on a digital map based on Latitude and Longitude (XY) coordinates provided to the PSAP via the Automatic Location Information (ALI). These XY coordinates will be determined by one of three technologies: 1) network-based (location determining equipment on each wireless tower), 2) handset-based (GPS receiver on the caller's mobile phone), or 3) combination of the network and handset-based solutions. The FCC has adopted accuracy requirements for the wireless caller's XY. These requirements are listed below in an excerpt from *FCC 01-351, Fifth Report and Order*:

The FCC adopted accuracy and reliability requirements for ALI as part of its rules for wireless carrier enhanced 911 (E911) service in CC Docket No. 94-102, Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems. Those rules were

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adopted in 1996 and revised in the Third Report and Order in that docket (released October 6, 1999). The revised rules set the following accuracy and reliability requirements for E911 Phase II operations:

- *For network-based solutions: 100 meters for 67 percent of calls, 300 meters for 95 percent of calls;*
- *For handset-based solutions: 50 meters for 67 percent of calls, 150 meters for 95 percent of calls.*

Data Collection

These Arizona GIS standards require that the GIS centerline file be collected at a minimum of 10 meters 95% of the time. The scale of vector GIS data must be 1:24,000 or better and the scale of raster GIS data (digital orthoimagery, satellite imagery, etc) must be 1:2400 or better. It is recommended that updates to the centerline file be made with the most spatially accurate data and/or means available.

Map Projection

In a wireless Phase II environment, the wireless 9-1-1 caller's XY coordinates are provided to the PSAP in a WGS 84 projection. Thus, the standard map projection for 9-1-1 GIS map data must utilize the WGS 84 map datum.

Attribute Accuracy Requirements

The attribute information must be accurate in order for 9-1-1 calls to locate properly. Below is a list of attribution accuracy requirements:

Street centerlines

- ✓ The ALI database must have **at least a 95% match rate** to the GIS centerline layer
- ✓ Street names must be MSAG-valid
- ✓ All street segments must be broken and snapped at street intersections, ESN boundaries, and community boundaries
- ✓ Direction of street segment must follow real-world ranges
- ✓ Ranges may not overlap
- ✓ "To" range must be greater than "From" range on each street segment

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- ✓ Street segments must be free of parity errors (i.e. – cannot have both even and odd ranges on the same side of a segment)
- ✓ Left and right ESN information must match boundary files
- ✓ Major highways and freeways must be depicted as two line segments

ESN and Community boundaries

- ✓ Must be free of sliver polygons (i.e. – gaps or tiny unwanted polygons)
- ✓ Must be snapped to street segments
- ✓ ESN boundaries must cover the 9-1-1 system's entire response area

Testing Methods

The GIS tests and validations will be performed by the State's 9-1-1 GIS Coordinator. Before funding will be approved from the State's 9-1-1 Fund, each 9-1-1 System (city or county jurisdiction) will be required to send complete copies of the following GIS layers to the State 9-1-1 GIS Coordinator for validation. Tests will be run to ensure they meet Arizona's standards.

- Street centerlines
- ESN/ESZ boundaries
- Community boundaries

Ongoing GIS Maintenance

Maintaining accurate GIS data is as important as acquiring accurate GIS data. Since up-to-date GIS data is required for 9-1-1 mapping, it is imperative that the data be continually updated with new streets, sub-divisions, and annexations. Each 9-1-1 System is responsible for maintaining their GIS data. Below are maintenance requirements that must be met in order to receive approval for State 9-1-1 funds to finance mapped ALI.

- The 9-1-1 System must identify their GIS department or GIS data maintenance source and MSAG Coordinator prior to installing a mapped ALI system. Please complete the *GIS Standards Checklist Form* and submit it to the State's 9-1-1 Administrator or GIS Coordinator. Contact the State 9-1-1 Office for a copy of the *GIS Standards Checklist Form*.
- Procedures for updating and correcting the GIS data must be developed prior to installing a mapped ALI system. These procedures include:

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- Methods for adding new streets and subdivisions
- Timeline for adding new street data/annexations
- Methods for collecting GPS points (if applicable)
- Methods for adjusting ESN/Community boundaries

- The following people play a key role in maintaining the 9-1-1 GIS data:
 - 9-1-1 dispatchers and call takers
 - MSAG Coordinators
 - GIS personnel
 - Addressing assignment sources such as the Planning and/or Assessors Office
 - Outside contracted data maintenance sources

- To ensure that GIS data is accurately maintained, each 9-1-1 System is required to complete an annual ALI to GIS comparison. This comparison should be performed by the 9-1-1 System's GIS personnel or the State's 9-1-1 GIS Coordinator. Each county is entitled to one free ALI dump per year. 9-1-1 Systems may also perform a GIS to MSAG comparison to assess GIS accuracy.

- **Please contact the State 9-1-1 GIS Coordinator if you ever need GIS assistance.**

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APPENDIX A

EXHIBIT 22 VERSION 1.0 GIS data model format

22.1 Preface

The *Geographic Information System (GIS) Data Model* identifies a geospatial data standard, but it outlines data layers for GIS data to be exchanged between neighboring public safety agencies or jurisdictions. This standard is for spatial datasets in a GIS environment. GIS utilizes linear style addressing technique for purposes of geocoding. Should an organization use non-linear style addressing such as an alphanumeric grid style system, this standard would not be effective. The primary purpose of this standard is for organizations that utilize a Geographic Information System.

This Standard will identify minimal attributes required in a spatial dataset, and define the structure of said attributes. This standard will help facilitate the development of new map products for use in Public Safety specifically as it pertains to implementing wireless locational technologies Longitude, Latitude and elevation are part of the spatial layers that are sent along with the data layers. Data specifies the map projections and coordinate system recommended for the display of the Longitude and Latitude coordinates. The standard format for Longitude, Latitude, Elevation and Datum is the following:

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Longitude	LON	11	AN	Longitude/X coordinate. Right Justified: pad field with zeros to left of decimal degrees. +Long: east of Greenwich; -long: west of Greenwich. . When Phase II location cannot be provided, Phase I information should be reported, i.e., the cell site or sector where the call is received. Sample: +000.000000
Latitude	LAT	10	AN	Latitude/Y coordinate. Right Justified: pad field with zeros to left of decimal degrees. +Lat: north of equator; -lat: south of equator. When Phase II location cannot be provided, Phase I information should be reported, i.e., the cell site or sector where the call is received. Sample: +00.#####
Elevation	ELV	5	AN	Elevation/Altitude indicated as height above mean sea level, measured in meters. Blank record indicates data not available. Sample: #####
Datum	NAD	2	N	Specifies the map projection and coordinate system recommended for the display of the Longitude and Latitude coordinates. Two systems are commonly used for North America. The code 83 identifies North American Datum for 1983 (NAD83). Code 84 identifies the World Geodetic System for 1984 (WGS84). Other codes may be added as additional datum becomes available through authorized entities. Where x = 83 = NAD83 84 = WGS84

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22.2 METADATA

Metadata is information about the content, quality, condition, and other characteristics of data being sent. The basic elements to be included in the metadata file are taken from the *1998 NSDI – Federal Geographic Data Committee Digital Geospatial Metadata Standards*. The following are the basic elements that need to be included in the metadata file:

Identification Information – basic information about the data set

- Citation
- Description
- Time Period of Content
- Status
- Spatial Domain
- Keywords
- Access Constraints
- Use Constraints
- Point of Contact
- Browse Graphic
- Data Set Credit
- Security Information
- Native Data Set Environment
- Cross Reference

Description – a characterization of the data set, including its intended use and limitations

Data Quality Information – a general assessment of the quality of the data set

- Attribute Accuracy
- Logical Consistency Report
- Completeness Report
- Positional Accuracy
- Lineage
- Cloud Cover

Spatial Data Organization Information – the description of the reference frame for, and the means to encode coordinates in the data set

- Indirect Spatial Reference
- Direct Spatial Reference Method
- Point and Vector Object Information
- Raster Object Information

Spatial Reference Information – the description of the reference frame for, and the means to encode, coordinates in the data set.

- Horizontal Coordinate System Definition
- Vertical Coordinate System Definition

Distribution Information – information about the distributor of and options for obtaining the data set.

- Distributor
- Resource Description
- Distribution Liability
- Standard Order Process
- Custom Order Process
- Technical Prerequisites
- Available Time Period

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Metadata Reference Information – information on the currentness of the metadata information, and the responsible party.

- Metadata Date
- Metadata Review Date
- Metadata Future Review Date
- Metadata Contact
- Metadata Standard Name
- Metadata Standard Version
- Metadata Time Conversion
- Metadata Access Constraints
- Metadata Use Constraints
- Metadata Security Information
- Metadata Extensions

Citation Information – the recommended reference to be used for the data set

- Originator
- Publication Date
- Publication Time
- Title
- Edition
- Geospatial Data Presentation Form
- Series Information
- Publication Information
- Other Citation Details
- Online Linkage
- Larger Work Citation

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22.3 LINE DATA

22.3A. Centerline Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Left Add Low	LLO	10	N	Lowest address on left side of street in ascending order
Left Add High	LHI	10	N	Highest address on left side of street in ascending order
Right Add Low	RLO	10	N	Lowest address on right side of street in ascending order
Right Add High	RHI	10	N	Highest address on right side of street in ascending order
Prefix Directional	PRD	2	AN	Leading street direction prefix. Valid Entries: N S E W NE NW SE SW
Street Name	STN	60	AN	Valid service address of the Calling Party Number
Street Suffix	STS	4	AN	Valid Street abbreviation, as defined by the US Postal Service Publication 28. (e.g. AVE)
Post Directional	POD	2	AN	Trailing street direction suffix. Valid Entries: N S E W NE NW SE SW
Road Class	ROC	3	AN	Road Class as defined by the USGS National Mapping Product Standard for 1:24,000-scale and 1:25,000- scale Quadrangle Map Products. http://rockyweb.cr.usgs.gov/nmpstds/acrodocs/qmaps/5PSYM499.PDF
One-way	ONW	1	A	One way road classification. Blank = No X = Opposite Direction of arc Y = In direction of arc
MSAG Community Name Left	MCL	35	A	Valid service community name as identified by the MSAG on the left side of the street
MSAG Community Name Right	MCR	35	A	Valid service community name as identified by the MSAG on the right side of the street
Segment ID	SID	8	N	Unique Road Segment ID number
County ID Left	COL	5	AN	County Identification code (usually the FIPS code) on the left side of the street in ascending order. <i>Note: County Identification field is used to identify the county of call origination. The Committee recommends use of the FIPS code assigned to each county by the U.S. Census Bureau</i>
County ID Right	COR	5	AN	County Identification code (usually the FIPS code) on the right side of the street in ascending order. <i>Note: County Identification field is used to identify the county of call origination. The Committee recommends use of the FIPS code assigned to each county by the U.S. Census Bureau</i>
Source of Data	SOD	5	A	Agency that last updated the record

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Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD
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¹] Where an MSAG exists, must fit the MSAG entry.

² Primary address associated with the Calling Party Number

³ Must include all TN USERS information on all Multi-Line Telephone Systems that will facilitate the implementation of enhanced 9-1-1 on all PBX, Key, Hybrid and Centrex Systems.

⁴ NA = not available – class of service for an ESCO failure

⁵ The Data Technical Committee strongly recommends that all processing edits be removed from this Label due to technological changes requiring improved data security measures.

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22.3B. Railroad Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Line	LIN	4	A	Railroad Line Owner (Code of Association of American Railroads)
Line Name	LNA	30	A	Railroad Line Name
Segment ID	SID	8	N	Unique Railroad Segment ID
Mile Post Low	MPL	5	AN	Beginning Linear Reference
Mile Post High	MPH	5	AN	Ending Linear Reference
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

22.3C. Hydrology Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Surface Water Line	SWL	1	A	Type of Surface Water (river, stream, etc.)
Surface Water Name	SWN	30	A	Name of river, stream etc.
Segment ID	SID	8	N	Unique Hydrology Segment ID
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

22.4. POINT DATA

22.4A Emergency Service Agency Location Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Agency Type	ATY	1	A	Law = L Fire = F Emergency Medical Service = E
County ID	COI	5	AN	County Identification code (usually the FIPS code). <i>Note: County Identification field is used to identify the county of call origination. The Committee recommends use of the FIPS code assigned to each county by the U.S. Census Bureau</i>
Community ID	CID	10	N	Unique Community ID Number i.e. FIPS, GEOCODES, etc.
Agency ID	AID	9	N	Emergency Service Agency ID defined with the first 5 digits as the County ID code and the last 4 digits as the locally assigned agency code

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Agency Name	ANA	35	A	Name of Agency
Agency Contact	ACO	25	A	Agency Contact Person
Agency Address	AAD	25	A	Street Address of Agency Facility
MSAG Community Name	MCN	35	A	Valid service community name as identified by the MSAG
State/Province	STA	2	A	Alpa U.S. State or Canadian province abbreviation i.e. TX (Texas), ON (Ontario)
Telephone Number	TEL	12	A	Telephone Number of Agency Format: NPA-NXX-XXXX
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

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22.4B. Cell Site Location Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
LDT Provider ID	LDT	8	AN	LDT Provider Identification Code. Codes to be developed and held by NENA
Tower ID	TIN	10	A	Tower Identification Number
Tower Address	TAD	35	A	Tower street address
Tower Community	TWN	25	A	Tower community
Tower State	TSA	2	A	Tower state
Number of sectors	TNO	1	N	Number of sector faces (1=360 deg)
Ground elevation	GEL	8	N	Ground Elevation (nnnnn.nn)
Tower height	THT	4	N	Height of tower
Height/elev. units	ZUN	1	A	F=feet, M=meters of Ground Elevation and Tower Height
Range	RNG	6	N	Default range of tower based on power settings of tower. Units: miles. Format: nnn.nn (two decimal places)
Antenna Orientations	AOR	20	A	List of antenna orientations, separated by spaces or commas (i.e. compass degrees or compass directional)
Cell Type	CTP	1	A	A=Analog (900MHz), P=Digital (PCS), T=TDMA (Digital AMPs) – could expand depending on needs
Comment	CCM	60	A	Comment
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

22.4C. Mile Marker Location Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Mile Post ID	MPI	10	N	Mile Post Identification Number
Mile Marker Type	MMT	2	A	Type of mile marker RR = Railroad name HW = Road name
Segment ID	SID	8	N	Unique Road or Railroad Segment ID number
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

22.4D. Site/Structure Location Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Community ID	CID	10	N	Unique Community ID Number i.e. FIPS, GEOCODES, etc.
Site ID	SIN	6	N	Unique Site ID Number
Site Address Number	SAN	10	N	Site Address Number
Prefix Directional	PRD	2	AN	Leading street direction prefix. Valid Entries: N S E W NE NW SE SW
Street Name	STN	60	AN	Valid service address of the Calling Party Number.
Street Suffix	STS	4	AN	Valid Street abbreviation, as defined by the US Postal Service Publication 28. (e.g. AVE)

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Post Directional	POD	2	AN	Trailing street direction suffix. Valid Entries: N S E W NE NW SE SW
ESN	ESN	5	N	Emergency Service Number associated with this House Number, Street Name and Community Name. <i>Note: The Service Provider, providing the E9-1-1 Selective Routing will assign ESN's.</i>

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22.4D. Site/Structure Location Layer (cont.)

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
MSAG Community Name	MCN	35	A	Valid service community name as identified by the MSAG
Site Type	STY	2	A	Type of Structure – Classification Field
LR	LRS	1	A	Left/Right side of the road
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLC	8	N	Date of last update Format: CCYYMMDD

22.5. POLYGON LAYER

22.5A. County Polygon Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
County ID	COI	5	AN	County Identification code (usually the FIPS code). <i>Note: County Identification field is used to identify the county of call origination. The Committee recommends use of the FIPS code assigned to each county by the U.S. Census Bureau</i>
County Name	CNA	35	A	Name of County
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

22.5B. Emergency Service Zone Boundary Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Community ID	CID	10	N	Unique Community ID Number i.e. FIPS, GEOCODES, etc.
County ID	COI	5	AN	County Identification code (usually the FIPS code). <i>Note: County Identification field is used to identify the county of call origination. The Committee recommends use of the FIPS code assigned to each county by the U.S. Census Bureau</i>
PSAP ID	PSI	4	AN	Code identifying the PSAP associated with the assigned ESN
Agency ID	AID	9	N	Emergency Service Agency ID
ESN	ESN	5	N	Emergency Service Number associated with this House Number, Street Name and Community Name. <i>Note: The Service Provider, providing the E9-1-1 Selective Routing will assign ESN's.</i>
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

22.5.C Municipal Boundary Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Community ID	CID	10	N	Unique Community ID Number i.e. FIPS, GEOCODES, etc.
MSAG Community Name	MCN	35	A	Valid service community name as identified by the MSAG

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Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

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22.5.D Emergency Service Agency Boundary Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
PSAP ID	PSI	4	AN	Code identifying the PSAP associated with the assigned ESN
County ID	COI	5	AN	County Identification code (usually the FIPS code). <i>Note: County Identification field is used to identify the county of call origination. The Committee recommends use of the FIPS code assigned to each county by the U.S. Census Bureau</i>
Agency ID	AID	9	N	Emergency Service Agency ID
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

22.5.E Cell Site Coverage Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
LDT Provider ID	LDT	8	AN	LDT Provider Identification Code. Codes to be developed and held by NENA
Cell Site ID	CEL	6	AN	Identification number indicating a geographic region of wireless coverage. When Phase II location cannot be provided, Phase I information should be reported, i.e., the cell site or sector where the call is received.
Sector number	SNO	1	N	Number of this sector (face) 1-9
Sector ID	SEC	2	AN	Sub set/section of a cell. When Phase II location cannot be provided, Phase I information should be reported, i.e., the cell site or sector where the call is received.
ESRD	ESD	10	N	ESRD (P-ANI) assigned to this cell/sector
Sector Antenna Orientation	ANT	3	N	Center of antenna orientation for this face (i.e. Compass degrees or compass directional)
Coverage angle	CAG	3	N	Maximum angle of coverage for this face in miles or kilometers.
Maximum Range	SRG	6	N	Maximum range for this face
Comment	COM	60	A	
Coverage source	SSR	1	A	C=Company Map, D=Digital data from Company, P=GIS Propagation Study, L=Line of Site analysis, R=Range Def
Ground elevation	GEL	8	N	Ground (surface) elevation (nnnnn.nn)
Tower height	THT	8	N	Height of tower (nnnnn.nn)
Observed height	OHT	8	N	Amount to add to each point visible from tower
Height/elev. units	ZUN	1	A	F=feet, M=meters of Ground Elevation, Tower Height, and Observed Height
Spot Elevation	SPO	8	N	Spot elevation for the tower
Vertical angle above	SV1	3	N	Possible angle above the horizon compass degrees or compass directional.
Vertical angle below	SV2	3	N	Possible angle below the horizon compass degrees or compass directional.
Inside radius	RD1	8	N	Starting radius (if any – Maximum range is outside radius) in feet or meters.

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Source of Data	SOD	5	A	Agency that last updated the record
Date updated	DLU	10	A	Date of last update Format: CCYY-MM-DD

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EXHIBIT 22

VERSION 1.0 GIS DATA MODEL FORMAT

22.5F. Hydrology Layer

<u>NAME</u>	<u>LABEL</u>	<u>MAX # BYTES</u>	<u>TYPE</u>	<u>DATA DESCRIPTION</u>
Surface Water Line	SWL	1	A	Type of Surface Water (pond, lake, large waterway, reservoir, etc.)
Surface Water Name	SWN	30	A	Name of Pond, lake, waterway, reservoir, etc.
Segment ID	SID	8	N	Unique Hydrology Segment ID
Source of Data	SOD	5	A	Agency that last updated the record
Date Updated	DLU	10	N	Date of last update Format: CCYY-MM-DD

APPENDIX B

Arizona 9-1-1 GIS Standards

Sample Metadata Form

ESN Boundaries

Metadata:

- Identification Information
- Data Quality Information
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Distribution Information
- Metadata Reference Information

Identification Information:

Citation:

Citation Information:

Originator: REQUIRED: The name of an organization or individual that developed the data set.

Publication Date: REQUIRED: The date when the data set is published or otherwise made available for release.

Title:

ESN

Geospatial Data Presentation Form: vector digital data

Online Linkage: \\WSITENA\C\$\Adam\GIS Data\Arizona.mdb

Description:

Abstract:

ESN Boundaries

Purpose:

REQUIRED: A summary of the intentions with which the data set was developed.

Time Period of Content:

Time Period Information:

Single Date/Time:

Calendar Date: 11/16/2004

Currentness Reference:

publication date

Status:

Progress: REQUIRED: The state of the data set.

Maintenance and Update Frequency: REQUIRED: The frequency with which changes and additions are made to the data set after the initial data set is completed.

Spatial Domain:

Bounding Coordinates:

West Bounding Coordinate: -113.334221

East Bounding Coordinate: -110.450439

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North_Bounding_Coordinate: 32.511578

South_Bounding_Coordinate: 31.507841

Keywords:

Theme:

Theme_Keyword_Thesaurus: REQUIRED: Reference to a formally registered thesaurus or a similar authoritative source of theme keywords.

Theme_Keyword: REQUIRED: Common-use word or phrase used to describe the subject of the data set.

Access_Constraints: REQUIRED: Restrictions and legal prerequisites for accessing the data set.

Use_Constraints:

REQUIRED: Restrictions and legal prerequisites for using the data set after access is granted.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Adam Iten

Contact_Organization: State of Arizona/9-1-1 Office

Contact_Position: 9-1-1 GIS Coordinator

Contact_Electronic_Mail_Address: adam.iten@ad.state.az.us

Native_Data_Set_Environment:

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI

ArcCatalog 9.0.0.535

Data_Quality_Information:

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

<3 meters

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: G-polygon

Point_and_Vector_Object_Count: 850

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.000000

Longitude_Resolution: 0.000000

Geographic_Coordinate_Units: Decimal degrees

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927

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Ellipsoid_Name: Clarke 1866
Semi-major_Axis: 6378206.400000
Denominator_of_Flattening_Ratio: 294.978698
Vertical_Coordinate_System_Definition:
Altitude_System_Definition:
Altitude_Resolution: 0.000010
Altitude_Encoding_Method: Explicit elevation coordinate included with horizontal coordinates

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: ESN

Attribute:

Attribute_Label: OBJECTID

Attribute_Definition:

Internal feature number.

Attribute_Definition_Source:

ESRI

Attribute_Domain_Values:

Unrepresentable_Domain:

Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute_Label: Shape

Attribute_Definition:

Feature geometry.

Attribute_Definition_Source:

ESRI

Attribute_Domain_Values:

Unrepresentable_Domain:

Coordinates defining the features.

Attribute:

Attribute_Label: AREA

Attribute:

Attribute_Label: PERIMETER

Attribute:

Attribute_Label: NAME

Attribute:

Attribute_Label: ESN

Attribute:

Attribute_Label: Shape_Length

Attribute_Definition:

Length of feature in internal units.

Attribute_Definition_Source:

ESRI

Attribute_Domain_Values:

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Unrepresentable_Domain:

Positive real numbers that are automatically generated.

Attribute:

Attribute_Label: Shape_Area

Attribute_Definition:

Area of feature in internal units squared.

Attribute_Definition_Source:

ESRI

Attribute_Domain_Values:

Unrepresentable_Domain:

Positive real numbers that are automatically generated.

Distribution_Information:

Resource_Description: Downloadable Data

Metadata_Reference_Information:

Metadata_Date: 20041117

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: REQUIRED: The organization responsible for the metadata information.

Contact_Person: REQUIRED: The person responsible for the metadata information.

Contact_Address:

Address_Type: REQUIRED: The mailing and/or physical address for the organization or individual.

City: REQUIRED: The city of the address.

State_or_Province: REQUIRED: The state or province of the address.

Postal_Code: REQUIRED: The ZIP or other postal code of the address.

Contact_Voice_Telephone: REQUIRED: The telephone number by which individuals can speak to the organization or individual.

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: local time

Metadata_Extensions:

Online_Linkage: <http://www.esri.com/metadata/esriprof80.html>

Profile_Name: ESRI Metadata Profile