



## **Statewide Wireless E9-1-1 Plan**

**Version 4/7/05**



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## EXECUTIVE SUMMARY/OVERVIEW

In 1990, the Pennsylvania General Assembly passed *The Public Safety Emergency Telephone Act of 1990*, commonly referred to as Act 78. The legislation provided for a statewide emergency number, 9-1-1, for "...any individual within this Commonwealth to gain rapid, direct access to emergency aid..." The Act places oversight of the state's landline E9-1-1 system with the Pennsylvania Emergency Management Agency (PEMA). Generally speaking, PEMA has the authority to review and approve or disapprove all county 9-1-1 plans. The PEMA was also authorized to establish performance, technical, and financial standards for county 9-1-1 plans. At the same time, the legislative intent was that the authority and responsibility for landline E9-1-1 service shall be vested with county government.

Act 56 of 2003 (i.e., HB 1018) amended Act 78 of 1990 for the following purposes:

- Encourage statewide deployment of Phase I and II in the most efficient and effective manner possible;
- Establish a statewide integrated wireless E9-1-1 state plan;
- Establish a statewide wireless E9-1-1 surcharge and collection thereof;
- Establish a Wireless E9-1-1 Emergency Services Fund for reimbursement of Public Safety Answering Point (PSAP) and wireless carrier costs for Phase I and II;
- Establish a Wireless E9-1-1 Advisory Subcommittee to advise PEMA on wireless E9-1-1 service and issues; and
- Provide PEMA with the authority to oversee the implementation and operation of the integrated statewide wireless E9-1-1 system.

In summary, Act 56 of 2003 gives PEMA the authority and responsibility to implement a statewide wireless E9-1-1 Plan and System, and provides PEMA with significant oversight of wireless E9-1-1 service in the Commonwealth. Although PEMA has oversight of the landline E9-1-1 system, its powers and responsibilities are far greater and more involved with wireless E9-1-1.

Section 11.2 of Act 78 (as amended by Act 56) requires and authorizes PEMA to oversee the development and implementation of a statewide wireless E9-1-1 Plan that provides for all aspects of the development, implementation, operation, and maintenance of an integrated statewide wireless E9-1-1 system. The overall goal is to provide PEMA with the authority to oversee the implementation of an integrated statewide wireless E9-1-1 system and oversee the deployment of wireless E9-1-1 service, while maintaining local autonomy and control over the day-to-day operations of E9-1-1 service.

The purpose of a state wireless 9-1-1 plan is to provide PEMA, 9-1-1 Directors, local government officials, and wireless carriers with the guidance needed to achieve the goal of an integrated statewide wireless E9-1-1 system. Currently, the provision of wireless E9-1-1 service has been on a county by county basis, and deployment status ranges from Phase 0 to 100



percent Phase II deployment. As a result, there are 67 counties in the Commonwealth that have implemented—or not—wireless E9-1-1 service in 67 different ways. The current system is a patchwork of sorts that is also characterized by fragmented and unequal levels of service. Some counties have deployed 100 percent of their carriers with Phase II service. Other counties have deployed some carriers with Phase II, and the remaining carriers with Phase I. Still other counties are at Phase 0.

PEMA's goals are two-fold. The first goal is to ensure equal and unilateral deployment of wireless E9-1-1 service across the Commonwealth. The second goal is to provide a transition from the current status of wireless E9-1-1 service to an integrated statewide wireless E9-1-1 system, where all Pennsylvania residents have the same level of wireless E9-1-1 service no matter where they live or travel in the Commonwealth.

Following are PEMA's goals and objectives for a statewide wireless E9-1-1 Plan:

- Assess each county's readiness to deploy Phase II wireless E9-1-1 service, including, but not limited to, mapping.
- Identify the resources needed to implement Phase I and II statewide.
- Identify the costs to each 9-1-1 Center (or county PSAP) to implement Phase I and II, and determine the total statewide costs to county PSAPs.
- Establish technical operating standards for Phase I and II for PSAPs, including but not limited to:
  - Customer Premise Equipment (CPE)
  - Computer Aided Dispatch (CAD) systems
  - Trunking/facilities
  - Connectivity
  - Automatic Location Identification (ALI) format
  - Mapping
- Establish revenue standards for PSAPs.
  - Establishing revenue standards will also increase accountability in that PEMA will be able to ensure that wireless E9-1-1 funds are used for equipment upgrades and implementations to prepare every 9-1-1 Center for the future of 9-1-1 service.
- Identify the wireless carriers operating in the Commonwealth and their respective service areas.
- Develop and implement a wireless remittance process to ensure maximum carrier compliance, ensure accountability, and achieve efficiencies of operation.



- Identify the costs to wireless carriers to implement and operate Phase I and Phase II statewide.
- Identify the total statewide costs for Phase I for PSAPs and wireless carriers.
- Identify the total statewide costs for Phase II for PSAPs and wireless carriers.
- Determine the method of and procedures for wireless E9-1-1 funding for PSAPs and wireless carriers that ensures the long-term solvency and integrity of the Fund.
- Determine the method of and procedures for annual “reconciliation” or “true-ups” of PSAP and wireless carrier cost recovery, to ensure that no PSAP or wireless carrier is reimbursed for amounts greater than the actual costs of implementation and maintenance.
- Ensure that the implementation of statewide wireless E9-1-1 service is done in the most cost effective and efficient manner possible.
- Provide assistance to any PSAP/county needing such for the deployment of Phase I and II.
- Develop a timeline for the statewide implementation of Phase I and II (including funding requirements).
- Review the progress made by each PSAP/county in implementing Phase I and II.
- Analyze and study PEMA’s staffing needs for wireless E9-1-1 service.
- Provide adequate training resources for PEMA staff to fulfill their job responsibilities.
- Establish performance standards for both PEMA and counties/PSAPs to ensure that goals are being met in the most cost effective and efficient manner possible.

PEMA’s overall goal is to deploy wireless E9-1-1 service in the most cost effective and efficient manner possible, while maintaining local autonomy and control over the day-to-day operations of E9-1-1 service. All aspects of the Plan should be implemented with that goal in sight. It might be that deployment takes relatively longer, but it will be done in a methodical and cost effective manner, and done right the first time. The citizens of Pennsylvania will not be served well if deployment occurs haphazardly and irrationally. The citizens will be better served if wireless E9-1-1 service is rolled out efficiently.



## THE FEDERAL COMMUNICATIONS COMMISSION

In 1996, the Federal Communications Commission (FCC) formally adopted CC Docket 94-102, or the *First E911 Report and Order and FNRPM*, and mandated that wireless carriers provide their subscribers with both basic and enhanced 9-1-1 service. In this order, the FCC mandated that wireless E9-1-1 service was to be achieved in two Phases, I and II. Under the FCC rules, PSAPs that are able to use E9-1-1 information must request wireless carriers to implement Phase I or Phase II wireless E9-1-1 service. That is, PSAP requests trigger carriers' wireless E9-1-1 requirements.

Under Phase I, wireless carriers have six months to provide a requesting PSAP (or the State Agency) with the address of the cell tower receiving the wireless E9-1-1 call along with the wireless caller's cell phone, or call back, number. Phase I location technology consists of addressing cellular towers and antenna arrays to provide a gross location or radio propagation area from where the wireless telephone call originated. Phase I information is used to determine which PSAP to route the call to based on the tower location or antenna pattern direction. This is the method by which most Phase 1 wireless calls are routed to a requesting PSAP today.

Under Phase II, wireless carriers have six months<sup>1</sup> to provide a requesting PSAP with the caller's call back number, along with the caller's location via longitude and latitude (i.e., X, Y coordinates), within a specific number of meters, in a set percentage of cases. Wireless carriers are required to select a specific location determining technology used to derive Phase II data, which is either handset-based or network-based. Since the original report and order, wireless carriers have requested and received waivers concerning the final deadline to implement Phase II service to those PSAPs requesting the service.

In areas where Phase I or II has not been implemented, several events can occur if a wireless phone user dials 9-1-1 from his or her cell phone. This situation is referred to as Phase 0. In some areas of the country, wireless 9-1-1 calls are not selectively routed. In these areas, a 9-1-1 call can be inadvertently routed to a PSAP in another county or state. In other areas of the country, Phase 0 calls are selectively routed to the appropriate PSAP for that area. Regardless of whether the Phase 0 call is selectively routed to the appropriate PSAP, when that call is delivered to the PSAP, the 9-1-1 call-taker's screen is usually blank; there is no callback number, and the caller's location (or even cell tower address) is not provided. The call-taker must verify this information, and try to determine not only where the caller is, but also where and how to transfer the call, if needed, to the appropriate jurisdictional PSAP. In some areas, wireless 9-1-1 calls are selectively routed over 10-digit (or administrative) lines. If the PSAP is "fortunate," then the wireless 9-1-1 caller's phone number will appear on the screen, but no tower or caller location is provided. This level is known as Phase 0.5 (or Phase I lite).

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<sup>1</sup> Some wireless carriers are operating under Consent Decrees reached with the FCC. Under the Consent Decrees, these carriers have modified Phase II deployment schedules. This factor will need to be considered during deployment and when estimating timelines for statewide deployment.



## **COST RECOVERY**

In its First Report and Order, the FCC mandated that a wireless carrier's obligations were only triggered upon request from a PSAP, provided that the PSAP was able to use the Phase I data, and that a cost recovery mechanism was in place for both the carrier and the PSAP. On December 8, 1999, in its *Second Memorandum Opinion and Order* (FCC 99-352), the FCC removed carrier cost recovery as a prerequisite for carriers, but affirmed PSAP cost recovery. In other words, the FCC ruled that PSAPs must still have a mechanism for recovering their costs, but cost recovery for carriers could not be used as a prerequisite for deployment by the carriers. In this decision, the FCC stated that removing carrier cost recovery would hasten the introduction and rollout of wireless E9-1-1 service. The FCC reaffirmed its decision on November 22, 2000,<sup>2</sup> when it denied two petitions for reconsideration of the rules to eliminate carrier cost recovery requirements for Phase I and II requests.

## **KING COUNTY DECISION**

On May 7, 2001, the Chief of the Wireless Telecommunications Bureau replied to a letter from officials in King County, Washington, who had requested FCC assistance in resolving a conflict concerning implementation of Phase I E9-1-1 service. In the letter, the FCC stated that the demarcation point in determining costs between a wireless carrier and a PSAP was the Selective Router. On July 24, 2002, in *Order on Reconsideration* (FCC 02-146), *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 9-1-1 Emergency Calling Systems: Request of King County, Washington*, the FCC affirmed its earlier decision. In this Order, the FCC ruled that the demarcation point in allocating E9-1-1 implementation costs between wireless carriers and PSAPs was the 9-1-1 Selective Router.

## **CITY OF RICHARDSON DECISION**

On October 17, 2001,<sup>3</sup> the FCC responded to a petition by the City of Richardson, Texas, for clarification of the Commission's rules regarding what constitutes a valid PSAP request so as to trigger a wireless carrier's obligation to provide E9-1-1 service to that PSAP. In its initial Richardson Order, the FCC established two three-part tests under which a PSAP request would be considered "valid."

Under the first test, a PSAP has to demonstrate that:

1. The PSAP already had a funding mechanism in place to recover the costs associated with receiving and using Phase I or II data;

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<sup>2</sup> *Fifth Memorandum Opinion and Order*, FCC 00-405.

<sup>3</sup> Order, FCC 01-293, *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 9-1-1 Emergency Calling Systems Petition of City of Richardson, Texas*, October 17, 2001.



2. The PSAP had ordered any CPE upgrades or equipment that would allow it to receive and use Phase I or II data, and that such upgrades or equipment would be in place within six months of the request date; and
3. The PSAP had made a timely request to the appropriate Local Exchange Carrier (LEC) for the necessary equipment and upgrades to provide for transmission of the E9-1-1 data to the PSAP.

In the alternative, a PSAP has to demonstrate that:

1. The PSAP already had a funding mechanism in place to recover the costs associated with receiving and using Phase I or II data;
2. The PSAP was already Phase I capable using the NCAS (Non-Call Associated Signaling) technology; and
3. The PSAP had made a timely request to the appropriate LEC for the necessary equipment and upgrades to provide for transmission of the E9-1-1 data to the PSAP.

The FCC did not initially specify any time limits for a PSAP to respond to a wireless carrier's request to supply *Richardson* documentation. On November 26, 2002, in *Order on Reconsideration* (FCC 02-318), the FCC established procedural guidelines for documenting PSAP readiness, by adopting a provision for "tolling" (or temporarily halting) the running of the six-month implementation period. Upon receipt of a Phase I or II request, a wireless carrier has 15 days to request—in writing—*Richardson* documentation from a PSAP. The PSAP must provide a written response to the wireless carrier within 15 days. If the PSAP fails to respond within 15 days, the request is delayed—or tolled—until the PSAP supplies the requested information. Once the PSAP supplies the information, the implementation clock resumes, beginning with Day 31.<sup>4</sup>

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<sup>4</sup> November 26, 2002, Order on Reconsideration, *Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 9-1-1 Emergency Calling Systems—Petition of the City of Richardson, Texas*, FCC 02-318 ("*Richardson Recon. Order*").



## LEGISLATIVE AUTHORITY

Section 11.2 of Act 78 (as amended) provides for PEMA's powers and duties related to a wireless E9-1-1 system. PEMA's legislated powers are as follows:

1. Designate at least one employee of PEMA who shall serve as the point of contact at PEMA for all wireless E9-1-1 matters, issues, and problems.
2. Oversee "...the development, implementation, operation and maintenance of a Statewide integrated wireless E9-1-1 system, formulate technical standards and determine permitted uses of and amounts disbursed from the Wireless E9-1-1 Emergency Services Fund..., including the costs of PSAPs and wireless providers that are eligible for payment from the fund..." [§11.2(a)(2)]
3. Approve each county's 9-1-1 plan that incorporates wireless E9-1-1 service capabilities.
4. Prepare, maintain, and keep current a wireless E9-1-1 State Plan that provides for all aspects of the development, implementation, operation, and maintenance of a statewide integrated wireless E9-1-1 system. As part of the plan, PEMA shall:
  - a. Establish model agreements for mutual aid,<sup>5</sup> cross-service, and service contracts<sup>6</sup> by and among public agencies, PSAPs, and wireless carriers.
  - b. Maintain a list of the counties served by each wireless carrier in the state.<sup>7</sup>
  - c. Maintain a list of a 24x7 number for each carrier, to be provided to PSAPs for use in exigent situations.<sup>8</sup>
  - d. Provide a mechanism for PEMA to settle disputes concerning cell site routing between and among PSAPs.<sup>9</sup>
  - e. Establish statewide standards for the format and display of ANI and ALI.

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<sup>5</sup> For the most part, mutual aid agreements between counties and emergency services agencies already exist with respect to emergency assistance. PEMA will focus on procedures for handling misrouted wireless E9-1-1 calls.

<sup>6</sup> The FCC has stated that service agreements between PSAPs and wireless carriers are not necessary and cannot be used as a prerequisite for deployment. The FCC has also said that its Order is very clear in delineating responsibilities between and among carriers, LECs, and PSAPs.

<sup>7</sup> Specifically, §11.2(b)(2) requires every wireless carrier to notify PEMA and affected counties of every county in which it is licensed and provides service to, and to notify PEMA when it initiates service in a county.

<sup>8</sup> Section 11.2(b)(5) requires wireless providers to provide PEMA with this number, which shall include resellers.

<sup>9</sup> Section 11.2(b)(2) authorizes PEMA to serve as the determining agency "...in the event of disputes among PSAPs regarding the PSAP to which a wireless provider routes 9-1-1 calls...."



## **THE WIRELESS E9-1-1 ADVISORY COMMITTEE**

Section 11.3 establishes the E9-1-1 Emergency Services Advisory Committee. This committee is made up of the following 23 members:

- PEMA Director (or designee)
- Two county commissioners
- Four county 9-1-1 managers
- Four wireless carrier representatives
- Two landline service representatives
- Two fire service representatives
- Two EMS representatives
- Two police representatives
- Chairman and minority Chairman of the Senate Communications and Technology Committee
- Chairman and minority Chairman of the House Veterans Affairs and Emergency Preparedness Committee

The capacity of this committee is advisory in nature. The committee is able to make recommendations to PEMA regarding the formulation of technical, administrative, and operational standards for statewide 9-1-1 programs. Members of this committee serve without compensation, but are eligible for all actual and necessary travel expenses for attendance at committee meetings.

Section 11.3(e)(1) creates a permanent wireless advisory subcommittee, to be selected from the Committee, comprised of the following 13 members:

- PEMA Director, or a designee
- Two county commissioners
- Four county 9-1-1 managers
- Four wireless carrier representatives
- Two landline telephone representatives



The capacity of this subcommittee is advisory in nature. The subcommittee is able to make recommendations to PEMA which is the legislated deciding agency with respect to wireless E9-1-1 service. The subcommittee's responsibilities are to

- ✓ advise PEMA regarding the development, implementation, operation, and maintenance of a statewide wireless E9-1-1 program;
- ✓ make recommendations to PEMA regarding revisions to the Statewide wireless E9-1-1 Plan;
- ✓ make recommendations to PEMA regarding the approval or disapproval of wireless provider service agreements;<sup>10</sup>
- ✓ make recommendations to PEMA regarding the formulation of technical standards;
- ✓ make recommendations to PEMA regarding the development of guidelines, rules, and regulations to administer the State Wireless E9-1-1 Plan;
- ✓ make recommendations to PEMA regarding the development of guidelines, rules, and regulations to administer the Wireless E9-1-1 Fund; and
- ✓ make recommendations to PEMA regarding PEMA's annual report, including recommendations concerning adjustment of the wireless E9-1-1 surcharge.

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<sup>10</sup> The FCC has opined numerous times that service agreements are not needed, nor can be used as a prerequisite for Phase I or II service. The FCC mandate is quite clear on the scope of services to be provided by a wireless carrier to a PSAP—i.e., the caller's call-back number and location. The FCC mandate is also clear on the scope of services to be provided by the PSAP—i.e., the PSAP must be able to receive and use the data provided by a wireless carrier to locate a wireless 9-1-1 caller. The same can be said of each party's respective roles and responsibilities. That is, the PSAP -- or in the case of Pennsylvania, PEMA -- submits a valid Phase I/II request and the wireless carrier implements Phase I/II service within the timeframes established by the FCC, or through a mutually agreed upon deadline between the wireless carrier and the PSAP.



## THE WIRELESS SURCHARGE AND WIRELESS REMITTANCE PROCEDURES

Section 11.4(b) sets the wireless E9-1-1 surcharge at \$1.00 per month per wireless service customer (including resellers and prepaid service). Section 11.4(c) requires each carrier to remit the fees at least quarterly to the State Treasurer for deposit into the 9-1-1 Fund. Wireless carriers collect the surcharge monthly, but are only required to remit the fee quarterly. The difference in collection period vs. remittance period means that the potential exists for carriers to earn interest on two months of revenue per quarter, for a total of eight months per year. This interest revenue could be significant and could raise the question of who should earn that interest—the state (i.e., the citizens) or the wireless carriers?

One of the most important aspects of a statewide plan is the remittance process. By statute, PEMA is responsible for disbursements from the Wireless E9-1-1 Fund, and is the only agency with such authority. To ensure that PEMA complies with all audit standards, it is essential that a wireless remittance process be established. A remittance process will ensure that the necessary and proper accounting controls are in place, and will increase the overall accountability of the wireless E9-1-1 Program.

Section 11.4(d)(1) authorizes wireless carriers to retain up to two percent (or two cents per dollar collected) of the gross receipts **collected** as reimbursement for the administrative costs associated with billing, collecting, and remitting the charge. Section 11.4(e) requires wireless carriers to provide certain information with each remittance. Failure to submit such information to PEMA shall constitute a violation of the Laws of the Commonwealth of Pennsylvania.

Essential to the remittance process is compliance by wireless carriers, and enforcement of the provisions for instances of non-compliance. §11.13 provides that "...in addition to any powers expressly enumerated in this act, the agency shall have full power and authority, and it shall be its duty to enforce, execute and carry out, by its rules and regulations or otherwise, all and singular, the provisions of this act, and the agency may institute injunction, mandamus or other appropriate legal proceedings to enforce the provisions of this act and regulations promulgated under it...."

PEMA has established wireless remittance procedures with which carriers must comply, along with a wireless remittance form for carriers to submit with each wireless remittance, and are contained in a separate document. PEMA has chosen to separate pre-paid wireless remittances from "regular" post-paid subscribers. Carriers that provide pre-paid service will need to submit a separate Wireless Remittance Form. Every wireless carrier providing wireless service in the Commonwealth of Pennsylvania is expected to comply with these procedures.

The Wireless Carrier Remittance procedures and forms can be found in **Appendix A**.



## THE DEPLOYMENT PLAN

The purpose of a state wireless 9-1-1 plan is to provide PEMA, PSAPs, and wireless carriers with the guidance to achieve the statutory requirement of an integrated statewide wireless E9-1-1 system. Much work remains to be done. Everyone involved in 9-1-1 needs to understand that the Plan is going to be modified and amended in response to new information and in response to unforeseen events. The State Plan is best viewed as a “living, breathing” document that will change to ensure that wireless deployment is achieved in the most cost effective and efficient manner possible that best serves the public. In addition, the State Plan is built in context of the FCC Report and Order, which is subject to periodic revision. Therefore, as the FCC ruling is amended, the Plan must be amendable to reflect such changes.

PEMA’s overall goal is to deploy wireless E9-1-1 service in the most cost effective and efficient manner possible. All aspects of the Plan should be implemented with that goal in mind. It might be that deployment takes relatively longer, but it will be done in a methodical and cost effective manner, and done right the first time. The citizens of Pennsylvania will not be served well if deployment occurs haphazardly and in a fragmented manner. The citizens will be better served if wireless 9-1-1 service is rolled out efficiently, by working with PSAPs, wireless carriers, and Local Exchange Carriers (LECs).

PEMA has determined that the best way to achieve Phase II statewide is to use a regional approach. A regional approach will allow PEMA to work with each county to ensure that each county PSAP is able to receive and use Phase II data, while achieving important cost-saving economies of scale associated with a cooperative regional effort. PEMA is advancing the program by working with “Public Safety Regions.” It should be noted that the regional approach is for the overall coordination of wireless E9-1-1 deployment. Each county 9-1-1 center will retain autonomy and control over their day-to-day operations, and will serve as the primary PSAP for the delivery of wireless E9-1-1 calls in their respective counties. It is also important to note that the focus of deployment is with each county 9-1-1 center or PSAP, and each county 9-1-1 director.

As part of the Plan, PEMA will conduct a “Deployment Readiness Assessment for Wireless” (or DRAW) for each county. The purpose of this assessment is to determine each PSAP’s ability to receive, display, and use Phase II (caller location) data. Generally speaking, this process will identify the degree to which each PSAP is prepared to deploy wireless E9-1-1 services. Included in the assessment will be network/PSAP connectivity, ALI formatting requirements, CPE/CAD/GIS-mapping assessment, database status, and carrier and LEC connectivity. For those PSAPs that are not ready, PEMA will provide technical and program assistance and will work with the PSAP to define and schedule the steps to successfully deploy wireless E9-1-1 and to ensure that expenditures comply with cost recovery regulations. Doing so will expedite the cost recovery process, and counties that participate in the regional deployment will maximize the ability to recover costs related to this program.

PEMA plans to work with the wireless carriers, on behalf of the PSAPs in participating Public Safety Regions, to deploy Phase II service to the entire Public Safety Region. PEMA will then work with each PSAP in each region to assist in the coordination of their individual deployment. By taking this regional approach, counties will not have to sacrifice funding, personnel, and resources by tying them up in the day-to-day matters of a deployment, all the while retaining



control of the decisions involved, such as call routing and scheduling of drive testing. That is, rather than taking a PSAP or county employee away from his or her regular duties, thereby leaving a gap in staffing and resources, PEMA will provide the staff assistance to deploy the entire region.

As part of the Deployment Plan, PEMA will also:

- Conduct a series of regional meetings with PSAPs, local governments, wireless carriers, Third Party Providers (e.g., Intrado and TCS), and LECs to ensure cooperation between and among all parties involved in wireless E9-1-1 deployment.
- Estimate statewide Phase I and II costs for both PSAPs and wireless carriers.
- Establish cost recovery procedures and applications for PSAPs and wireless carriers.
- Develop revenue standards for PSAPs/counties.
- Develop technical standards for both PSAPs and wireless carriers.
- Establish statewide policy that service agreements and NDAs between counties/PSAPs and wireless carriers are not necessary for the implementation of wireless E9-1-1 service.
- Establish deployment procedures and require wireless carriers to comply with them.
- Review and revise State Plan (as well as county 9-1-1 plans) as needed and as more information is known.
- As requested, submit Phase I and II requests on behalf of each county in each region to each wireless carrier in the county and ensure that each request is valid pursuant to *City of Richardson* criteria.
- Work with each county in each region to ensure proper and efficient routing of wireless calls for each relevant wireless carrier (including correct addressing of tower sites).
- Coordinate Phase II drive testing (i.e., acceptance testing and document completion) for each PSAP and relevant wireless carrier.



## TECHNICAL STANDARDS

Act 56 of 2003 charged PEMA with the responsibility for establishing technical standards for the provision of Phase I and II wireless E9-1-1 service. Pursuant to the authority granted to it, PEMA has established technical standards, which are contained in a separate document. It should be noted that these are draft standards and are subject to revision as operational needs dictate. PSAPs will need to ensure that their CPE and MIS are in compliance with these technical standards. Equipment not meeting technical standards will not be considered eligible for reimbursement by PEMA.

In the absence of specific standards established by PEMA, relevant NENA and APCO recommended standards, generally accepted as industry standards, shall apply to the extent possible, realizing that manufacturers may or may not abide by these recommended standards.

The technical standards can be found in **Appendix B.**



## GIS/MAPPING STANDARDS

Pursuant to the authority granted to the Pennsylvania Emergency Management Agency (PEMA) by the General Assembly of the Commonwealth of Pennsylvania in Act 56 of 2003, PEMA is authorized and required to develop and implement a plan for an integrated statewide wireless E9-1-1 system.

PEMA has determined that GIS software and mapping data are necessary requirements for Phase II wireless E9-1-1 service, and that GIS mapping expenditures are in furtherance of the Statewide Wireless E9-1-1 Plan. Computer Aided Dispatch (CAD) systems normally require mapping data and addressed roadway information in GIS format to function for landline 9-1-1 systems. The addition of wireless E9-1-1 has imposed additional requirements on such equipment and systems.

PEMA has established standards for the use of GIS technologies and mapping for Phase II wireless, and for counties to request and receive cost wireless funds for expenses incurred in meeting the requirements of the Statewide Wireless E9-1-1 Plan and FCC Docket 94-102. Mapping standards are effective March 1, 2005. The GIS standards generally follow the guidelines and standards established by the Pennsylvania Map program.

The Pennsylvania Map (PAMAP) statewide base mapping program is sponsored by the Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey (DCNR/BTGS) in conjunction with the Bureau of Geospatial Technologies in the Office for Information, Governor's Office of Administration. The purpose of the PAMAP program is to complete accurate and current statewide geospatial data layers for Pennsylvania for the benefit of all stakeholders. The first goal of this project is to complete the PAMAP statewide imagery, providing 67 counties with updated digital orthophotography at a minimum scale of 1:2400 for the entire Commonwealth. Some of the fundamental concepts of PAMAP are to:

- work collaboratively with county governments;
- set standards and procure imagery assets for use by all governments and shared with the enterprise;
- promote data sharing between and among state agencies and regional and county governments;
- reduce duplication of expense and data creation/maintenance activities;
- aggregate county data at the state level to create statewide data layers comprised of the best available county data; and
- promote data sharing standards to promote data interoperability.
  - The standards are defined as the PA Geospatial Data Sharing Standards (PGDSS). PGDSS will allow data to be shared horizontally (across municipality and county boundaries) and vertically (municipality, county, state, and federal).



PEMA has determined that a statewide GIS base map is the best possible solution for Phase II wireless E9-1-1 service, due to the requirement to visualize the location of wireless caller's GPS (latitude/longitude) coordinates. Imagery, elevation data, roadways, parcels, hydrography, and other statewide PAMAP/PGDSS data layers are key to providing an effective response for Phase II wireless E9-1-1 service. At the same time, the overall PAMAP base-mapping project may not be completed for several years. PEMA has determined that counties which do not have sufficient base map capability may use existing commercially available mapping data in the interim, provided that such mapping solutions comply with the established Mapping Technical Standards, and that all geospatial data assets are shared with the PAMAP program in PGDSS data standard formats; these assets are not part of any proprietary system, and do not have any restrictions for data sharing.

Any funds for GIS or mapping approved by PEMA as eligible for reimbursement, and any funds received by a PSAP/county for GIS or mapping shall be used only for GIS hardware/software, database, mapping and data creation related expenses for public safety purposes only. Any PSAP/county seeking reimbursement for GIS mapping shall meet the minimum geospatial data standards established as part of the PGDSS. Each county receiving reimbursement for GIS mapping shall share its base maps with each surrounding county and the Commonwealth. Mapping accuracies, at a minimum, shall comply with the Pennsylvania Geospatial Data Sharing Standard (PGDSS), Version 1.0, effective October 2004.

It should also be noted that the Bureau of Geospatial Technologies has procured an enterprise license for a commercial data set from TeleAtlas North America (TANA, formerly Geographic Data Technologies/GDT). This rich commercial data can be provided to all governments, Councils of Government, RPO/MPO/LDDs, first responders, K-12 schools, school districts, and their contractors. The entire state (67 counties) and all counties from surrounding states within 20 miles of the state border are available, and will be updated quarterly. The default format is an ESRI shapefile. This data can and should be used by those counties that do not currently have base map capability for Phase II purposes.

The GIS/Mapping Standards can be found in **Appendix C**



## REVENUE STANDARDS

Section 11.2, et seq., of Act 78, as amended, requires and authorizes PEMA to establish revenue standards for PSAPs and wireless carriers for Phase I and II. In furtherance of the Statewide Wireless E9-1-1 Plan, PEMA hereby establishes the following revenue standards.

The Revenue Standards are broken down into two categories: Eligible and Non-Eligible. These two categories were designed to mirror statutory language in Act 78 (as amended), and to ensure that every county/PSAP seeking cost recovery from PEMA will use wireless funds for wireless E9-1-1 service. The Revenue Standards will also help ensure a consistent and equal level of wireless E9-1-1 service across the Commonwealth. The Revenue Standards are provided in a separate document.

The Revenue Standards can be found in **Appendix D**.



## FUNDING FOR WIRELESS E9-1-1 SERVICE

Section 11.5(c), et seq., provides the statutory requirements and timelines for PSAPs and wireless carriers to receive funding from PEMA for Phase I and II costs. PSAPs and wireless providers, respectively, are required to submit to PEMA a funding application (for PSAPs) and cost recovery plan (for wireless carriers) no later than March 3<sup>11</sup> of each year (120 days before the start of the fiscal year). The funding application/cost recovery plan should consist of costs the PSAP/wireless provider expects to incur over the next fiscal year and costs that the PSAP or wireless provider has already incurred and which have not been reimbursed.

PEMA has three months (March, April, and May)<sup>12</sup> to review each plan for eligibility. PEMA must complete this review by June 1 of each year and then notify the PSAPs and carriers about which costs were deemed “eligible.” PEMA must reimburse PSAPs and wireless carriers for the eligible costs in four equal payments, paid during the first month of each quarter of PEMA’s fiscal year (July, October, January, and April), provided that such costs are in furtherance of the Statewide Wireless 9-1-1 Plan, and are determined to be eligible under the Revenue Standards. During the first quarter (July, August, September) of each fiscal year, PEMA must conduct a reconciliation for PSAPs and a “true-up” for carriers for disbursements that took place during the prior fiscal year.

Following are the statutory requirements for cost recovery:

- Carriers may only be reimbursed for counties/PSAPs in which they have received a valid request.
- Eligible costs not paid by PEMA during a given quarter or fiscal year are carried forward to the next period for funding (i.e., eventual 100 percent funding for PSAPs and wireless carriers).
- Every PSAP that receives wireless funds from PEMA is subject to a triennial audit of the PSAP’s use of wireless funds. The cost of the audit is an eligible expense.
- Every wireless carrier that received wireless funds from PEMA is subject to a triennial audit of the carrier’s “...collection, deduction, retention, remittance and use of the amounts collected by the wireless provider...or the disbursements it received...” from PEMA. (This provision only applies to those carriers seeking funding.) The cost of the audit is an eligible expense.
- Each PSAP and wireless carrier submitting a funding application and cost recovery plan, respectively, and receiving disbursements from the wireless fund is subject to an annual reconciliation (or “true-up”), to ensure that expenditures

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<sup>11</sup> For the first year of funding, PEMA has allowed PSAPs and wireless carriers to submit funding applications and cost recovery plans, respectively, on April 1, 2005.

<sup>12</sup> Because PEMA allowed PSAPs and wireless carriers to submit applications/cost recovery plans on April 1, 2005, PEMA will only have two months to review these submissions.



are in furtherance of the Statewide Wireless 9-1-1 Plan, and to ensure that reimbursements by PEMA do not exceed actual costs for Phase I/II.

Sections 11.4 and 11.5 govern cost recovery. Subsection 11.4(a) states that moneys in the fund shall only be used for "...PSAP and wireless provider costs resulting from compliance with the FCC E9-1-1 Order, including development, implementation and testing, operation and maintenance of a statewide integrated wireless E9-1-1 system...." Costs paid from the Fund must be considered eligible costs as determined by PEMA.

## **PRO-RATA DISBURSEMENTS**

Section 11.5(d) provides for pro rata distribution of cost recovery in the event that sufficient funds are not available in any given quarter. In this situation, Phase I PSAP costs get reimbursed first, followed by carriers' Phase I costs (for the same corresponding PSAPs). If funds are not available for 100 percent reimbursement for Phase I/II costs, then PEMA shall reimburse each PSAP/carrier the same pro rata amount.

Section 11.5(d)(2) provides the statutory formula for pro rata sharing of funds. Following is the description:

*"...For any PSAP or wireless provider, pro rata shares shall be computed based upon the total dollar amount of money available in the fund for payment of Phase I or Phase II deployment costs, whichever is applicable, multiplied by the ratio of:*

- (i) the total dollar amount of agency-approved but unpaid costs of that PSAP or wireless provider for Phase I or Phase II deployment, whichever is applicable; to*
- (ii) the total dollar amount of all agency-approved but unpaid costs...."*



## **WIRELESS FUNDING FOR PSAPs—PROCEDURES AND APPLICATION**

PEMA has adopted procedures and an application for PSAPs that wish to receive funding for wireless E9-1-1 service, in accordance with §§11.4 and 11.5 of Act 78, as amended, of the Commonwealth of Pennsylvania. The instructions apply to counties and govern the submission of cost estimates for the Fiscal Year beginning on July 1, 2005, and ending June 30, 2006 (i.e., FY 2006). The instructions and application are provided in a separate document.

This process also applies to counties that have incurred Phase I/II costs dating back to January 1, 1998. Counties that have incurred such costs will need to submit a separate funding application to PEMA to cover costs incurred dating back to January 1, 1998.

PEMA's intent is to provide funding to every eligible PSAP for 100 percent of their eligible expenses, in the most expeditious manner possible, and subject to the availability of funds in the Wireless 9-1-1 Fund. If sufficient funds are not available, then PEMA will determine the most equitable distribution that is PSAP-neutral, with the goal of 100 percent funding in the most expeditious manner possible and pursuant to §§11.4 and 11.5 of Act 78, as amended.

The PSAP wireless funding application and instructions can be found in **Appendix E**.

## **STATUTORY PROHIBITIONS ON THE USE OF WIRELESS E9-1-1 FUNDS**

Pursuant to §11.5(b), "...no PSAP shall receive a disbursement from the fund for any cost necessary to house the wireless E9-1-1 system or for the purchase of real estate, cosmetic remodeling, ambulances, fire engines or other emergency vehicles, utilities, taxes and other expenses as determined by the agency. No more than 70% of the disbursements which a PSAP receives from the fund during the agency's fiscal year may be utilized to fund personnel training, salary and benefit costs...."

In addition, §4.1(b) of Act 78, as amended, specifically prohibits the Pennsylvania State Police from being reimbursed with moneys from the Wireless E9-1-1 Fund.



## **WIRELESS CARRIER COST RECOVERY—PROCEDURES AND APPLICATION**

PEMA has adopted procedures for carriers to seek funding for their Phase I/II costs in accordance with §§11.4 and 11.5, of Act 78, as amended, of the Commonwealth of Pennsylvania. The instructions apply to wireless carriers and govern the submission of cost estimates for the fiscal year beginning on July 1, 2005, and ending June 30, 2006 (i.e., FY 2006). The instructions also apply for all costs incurred by wireless carriers dating back to January 1, 1998. The procedures and instructions are provided in a separate document.

The Wireless carrier cost recovery plan instructions can be found in **Appendix F**.



## **TRAINING**

Section 3, Telecommunications Management, Number 6; provides for PEMA to establish minimum training and certification standards for emergency dispatchers, call takers, and supervisors who work for 9-1-1 emergency communications centers or remote dispatch points in the Commonwealth. Act 17, Chapter 120c provides for minimum training, testing, and certification and review criteria.

PEMA is in the process of establishing a training program specific to wireless E9-1-1 for 9-1-1 call-takers and dispatchers.



## **AMENDMENT TO STATEWIDE WIRELESS E9-1-1 PLAN**

PEMA reserves the right to adopt amendments to the Statewide Wireless E9-1-1 Plan as may be necessary to comply with the requirements of Act 78, as amended. PSAPs and wireless carriers are encouraged to suggest changes and improvements they feel may be appropriate to improve the implementation and funding of Phase I and II wireless E9-1-1 service in the Commonwealth of Pennsylvania.



## **APPENDIX A - WIRELESS CARRIER REMITTANCE PROCEDURES**

### **Wireless Remittances in Pennsylvania**

Act 56 of 2003 authorized the setting of a wireless surcharge of \$1.00 per month on each wireless service customer for each device that provides wireless service, including resellers and pre-paid wireless service. Effective July 1, 2004, all wireless providers, including resellers, offering wireless service (as defined in §2 of Act 78, as amended) in the Commonwealth of Pennsylvania are required to remit the wireless surcharge to the Department of Treasury. Such fee shall be collected apart from and in addition to any fee levied by the wireless provider in whole or in part for the provision of 9-1-1 service.

Section 11.2(c) of Act 78, as amended, requires wireless providers, including resellers and pre-paid wireless telephone service, to remit the wireless surcharge to the State Treasurer at least quarterly. The Pennsylvania Emergency Management Agency is requesting each wireless provider to agree to remit monthly. The monies collected are deposited into a non-lapsing, restricted, interest-bearing account known as the Wireless E9-1-1 Emergency Services Fund.

This document is to provide wireless carriers, including resellers, with the procedures established by the Pennsylvania Emergency Management Agency (PEMA) governing the remittance of the wireless E9-1-1 surcharge. These procedures are effective March 1, 2005.

### **Wireless Remittance Procedures—Post-Paid Subscribers**

1. Every carrier shall provide to the Pennsylvania Emergency Management Agency a list of its resellers. This list shall be included with each remittance.
2. Pursuant to §11.2, et. seq., every wireless carrier shall provide PEMA with a 24-hour, seven-days-a-week emergency contact number or pager number to be used by PSAPs in emergency, exigent situations. This requirement shall include resellers.
3. Carriers are asked to remit to the State Treasurer (specifically, the Comptroller's Office) monthly. The minimum standard is to remit quarterly.
4. For those carriers able to remit monthly, payments are due no later than the 15<sup>th</sup> of the month.
5. For those carriers that only remit quarterly, payments are due no later than the 15<sup>th</sup> of the month following the end of each quarter. For these carriers, payments are due according to the following schedule:



<b>Payment Due Date:</b>	<b>Remittance Period:</b>
April 15	January, February, March
July 15	April, May, June
October 15	July, August, September
January 15	October, November, December

6. Every carrier shall complete and submit to the Comptroller’s Office and PEMA the Wireless Remittance Form, which is a separate Excel spreadsheet, and attached to these procedures.
7. The Wireless Remittance Form shall be due to PEMA and the Comptroller’s Office no later than the 13<sup>th</sup> day of each remittance month.
8. Carriers shall email and fax the Wireless Remittance Form to PEMA and the Comptroller’s Office at least two days prior to the date the funds are to be deposited.
  - a. For carriers remitting monthly, the transmittal information shall be due the 13<sup>th</sup> of each month.
  - b. For carriers remitting quarterly, the transmittal information shall be due on the 13<sup>th</sup> day of each remittance month, or by the following schedule:

<b>Payment Due Date:</b>	<b>Remittance Period:</b>	<b>Transmittal Due:</b>
April 15	January, February, March	April 13
July 15	April, May, June	July 13
October 15	July, August, September	October 13
January 15	October, November, December	January 13

9. Funds must be received in the form of wire transfers or ACH transfers, and in some exceptions, in the form of checks. No cash transmittals will be accepted under any circumstance. All remittances must be accompanied by the Wireless Remittance Form. A copy of this form shall be sent to PEMA.
10. Every wireless carrier shall submit, on official corporate letterhead, a letter requesting banking information. This letter shall also clarify whether transmittal will be done via Wire Transfer or ACH transfer. Correspondence shall be faxed to either Dean Kerstetter or Jessica Burkholder, at 717-783-9536, followed up by an email ([dkerstet@state.pa.us](mailto:dkerstet@state.pa.us) for Dean Kerstetter, and [jburkhol@state.pa.us](mailto:jburkhol@state.pa.us) for Jessica Burkholder).
11. All transmittals must be routed to the Department of Treasury. Correspondence accompanying transmittal information shall indicate that the funds are “Wireless E9-1-1 Surcharges” and must contain the date of deposit and the period of time the fees cover.
12. Once the funds are received, the Comptroller’s Office shall provide written notice to PEMA Wireless Staff as to the date the funds were received and the transmittal number.



13. In the event that the Comptroller's Office does not receive funds for a carrier in a given collection period, the Comptroller's Office shall notify PEMA Wireless staff by the 20<sup>th</sup> of that month in writing that the funds were not received. PEMA will then pursue collection efforts as it deems necessary, and as provided under §11.13 of Act 78, as amended.
14. The Comptroller's Office shall deposit the wireless surcharge within two business days of receipt of the Wireless Remittance Form. PEMA shall review the monthly remittance forms to ensure the timely and efficient deposit of the wireless surcharge monies.

## **Wireless Remittance Procedures—Pre-Paid Wireless Subscribers**

Section 11.4(b)(4) of Act 78 as amended provides the statutory methodology for remittance of the wireless E9-1-1 surcharge of pre-paid wireless telephone service. Under this section, "...the monthly wireless 9-1-1 surcharge imposed by this section shall be remitted based upon each prepaid wireless account...for each wireless customer with an active prepaid wireless account and has a sufficient positive balance as of the last day of each month..."

The following procedures apply for prepaid wireless service. These procedures are essentially the same as for "regular" post-paid wireless service. PEMA has chosen to track these remittances separately.

1. Every carrier shall provide to the Pennsylvania Emergency Management Agency a list of its resellers. This list shall be included with each remittance.
2. Pursuant to §11.2, et. seq., every wireless carrier shall provide PEMA with a 24-hour, seven-days-a-week emergency contact number or pager number to be used by PSAPs in emergency, exigent situations. This requirement shall include resellers.
3. On the last day of each month, for each active pre-paid account in which there is a minimum \$1.00 balance, the wireless carrier shall subtract from such accounts the wireless E9-1-1 surcharge (\$1.00) and remit that amount to the State Treasurer.
4. Carriers are asked to remit to the State Treasurer (specifically, the Comptroller's Office) monthly. The minimum standard is to remit quarterly.
5. For those carriers able to remit monthly, payments are due no later than the 15<sup>th</sup> of each month.



## **APPENDIX B – TECHNICAL STANDARDS**

The following section contains standards established by PEMA for Customer Premise Equipment (CPE) and Management Information Systems (MIS) for PSAPs. Pursuant to the authority granted to PEMA through Act 78, as amended, PSAPs need to ensure that their CPE and MIS are in compliance with these technical standards. Equipment not meeting technical standards will not be considered eligible for reimbursement by PEMA.

### **CUSTOMER PREMISE EQUIPMENT**

#### ***ANI/ALI CONTROLLER***

The ANI/ALI controller shall comply with current protocols and shall meet the following standards for a high quality E9-1-1 system. The ANI/ALI controller must be microprocessor-based, using stored program control. The ANI/ALI controller must be capable of advanced digital switching features, such as trunk-to-trunk transfer. The ANI/ALI controller shall be capable of providing direct re-bidding (i.e., ALI re-bid) of wireless 9-1-1 calls.

#### ***AUTOMATIC NUMBER IDENTIFICATION***

The ANI/ALI controller shall be capable of providing visual display of the emergency caller's telephone number at the PSAP location. The ANI/ALI controller must be able to process a minimum of a 20-digit spill for wireless calls.

#### ***AUTOMATIC LOCATION IDENTIFICATION***

The ANI/ALI controller shall be capable of providing visual display of the street address information (of the cell tower/site/sector), based on the ANI for Phase I wireless 9-1-1 calls. The ANI/ALI controller must also be capable of retrieving the longitude and latitude of the calling party based on the p-ANI (or ESRK/ESRD) associated with Phase I and II call delivery.

#### ***TRANSFER OF WIRELESS CALLS***

The ANI/ALI controller shall have the ability to transfer wireless calls and the associated p-ANI to another PSAP without degradation, or the loss or delay of data or voice.

#### ***CENTRAL OFFICE TRANSFER***

The ANI/ALI controller shall provide the capability for an established E9-1-1 call to be transferred by the call taker, via the E9-1-1 tandem office, to another PSAP or other destination.



This transfer should include both voice and wireless data and the ability to re-bid the wireless ALI (i.e., ALI re-bid).

### ***ENHANCED MF SIGNALING INTERFACE***

The ANI/ALI controller shall support Enhanced MF signaling as recommended by NENA to meet the requirements of FCC Docket No. 94-102 for Phase I wireless 9-1-1 calls. All call handling features (including, but not limited to, conference, transfer, and ring-back) that are available for landline 9-1-1 calls must be available for all wireless 9-1-1 calls. The Enhanced MF Signaling trunks shall be capable of supporting both Tandem and PSAP signaling formats.

### ***SUPPORT OF CAS, NCAS, AND HYBRID NETWORKS***

The proposed system solution shall support CAS, NCAS, and hybrid configurations.

### ***CONNECTIVITY TO MULTIPLE WIRELESS CARRIERS AND ALI DATABASES***

The ANI/ALI controller shall be able to interface simultaneously with multiple wireless carriers and multiple ALI remote databases.

## **ANI/ALI CONTROLLER—ALI DATABASE SYSTEMS**

### ***ALI RETRIEVAL SYSTEM INTERFACE***

The ANI/ALI controller shall interface to and with the ALI Retrieval system. The ANI/ALI Controller must have at least four output interfaces for transmission and receipt of data to act as an interface between the telephone company's ALI (Automatic Location Information) computers (both wireless and wireline) and the customer's premises to display location information at the answering position handling the 9-1-1 call.

### ***ALI DATABASE CONFIGURATIONS***

The ALI database must be capable of supporting stand alone ALI (SALI) or traditional centralized ALI configurations.

### ***DYNAMIC UPDATES OF X, Y***

The ALI database shall support dynamic updates for X, Y location information from each wireless carrier.



## **MANAGEMENT INFORMATION SYSTEMS**

In order to assess the amount of wireless 9-1-1, wireline/landline 9-1-1, and administrative call traffic, a Management Information System (MIS) is required. The MIS must be capable of monitoring all lines within the system, including E-9-1-1, Ten-Digit, Emergency, Administrative lines, and Ring Down lines. The MIS shall be capable of producing various reports that can be used to assess the proportion of wireless 9-1-1 calls to total 9-1-1 calls, landline 9-1-1 calls, or ten-digit emergency, administrative calls.

The MIS shall track the incoming calls and provide the PSAP management personnel with real-time information and strategic management reports that are needed to prepare Cost Recovery Plans, County Wireless 9-1-1 Plans, and Cost Recovery True-ups.

The Reports shall include, but not be limited to:

1. Total number of calls received (wireline & wireless 9-1-1)
2. Number of abandoned calls
3. Number of calls on a per trunk basis
4. Number of calls on a call type basis (Class of Service)
5. Number of calls transferred
6. Number of calls on a per position basis
7. Average time to answer
8. Average length of call
9. Average hold time
10. Total usage on a per circuit and per position basis

## **APPENDIX C – GIS/MAPPING STANDARDS**

### ***SOFTWARE FEATURES***

#### **9-1-1 CAD/GIS Functionality**

- Extracts landline or wireless call data from ALI data burst and pinpoints call location on screen without user intervention. Landline calls are pinpointed by geocoding the address against street centerline or point address data. Wireless calls are pinpointed using the X, Y coordinate data from the ALI.
- Geocoding functions should be able to handle missing addresses and alternate street names.
- Original ALI data can be viewed for each call.
- Active calls are logged on-screen; user can zoom to previous call location and retrieve data while the call is active.
- General location information is determined for each call—e.g., closest intersection, closest landmark. For wireless calls, a closest address will be determined using reverse geocoding. For rural areas where no addressable properties may exist, the wireless caller's latitude/longitude point should be displayed on the highest resolution, most current digital orthophoto in the GIS environment to determine how best to provide an emergency response.
- Latitude/longitude coordinates can be determined for any location on the map. Must be able to manually pull up a latitude/longitude and/or street address.

#### **Basic Map Functionality**

- Can use as many map layers as is practical without cluttering the screen. User can turn map layers on and off as desired.
- User can interactively pan around the map and zoom in and out as desired.
- Features in map layers can be identified.
- Distance can be measured.
- Map screen can be printed (optional requirement).
- Software can display and use all data products developed through the Pennsylvania Map (PAMAP) base mapping program. This includes raster data (aerial photography), TANA/GDT as well as county vector data sets (elevation, parcels, roads, buildings, water features).



## ***DATA REQUIREMENTS***

### **Required Minimum Map Layers**

- Street centerlines with complete address attributes
- Point landmarks—e.g., churches, schools, hospitals, cemeteries, government buildings
- Area landmarks—parks, airports, military bases, sports arenas
- Fire, Police, and EMS Stations
- Water features – streams, lakes, dams
- Administrative boundaries—city, county, state
- ESN boundaries

### **Maintenance and Updates**

- To qualify for cost recovery reimbursement, a plan for updating map layers must be submitted. The plan may include, but not be limited to, the following:
- Work flow summary of how addresses are assigned and worked into an update process.
- Method of update: in-house, contracted, or purchased from data vendor
- Personnel responsible for update
- Minimum update cycle is quarterly.
- Quarterly updates shall be provided to the PAMAP Program Office in PGDSS format



## APPENDIX D – REVENUE STANDARDS FOR PSAPs

Section 11.2 of Act 78 (as amended by Act 56 of 2003), requires and authorizes the Pennsylvania Emergency Management Agency (PEMA) to “...determine permitted uses of and amounts disbursed from the Wireless E9-1-1 Emergency Services Fund...” Section 11.4 authorizes disbursements from the Fund only for eligible non-recurring and recurring costs as determined by PEMA. Section 11.4(d)(3) prohibits funding of any costs that are not related to a PSAP’s compliance to federal and state requirements concerning wireless E9-1-1 service. Section 11.5(b) places further restrictions on the disbursement of moneys from the Fund.

Pursuant to the authority granted to it, PEMA hereby establishes the following revenue standards for eligible and non-eligible PSAP costs associated with Phase I and II wireless E9-1-1 service. The Revenue Standards are divided into two categories: eligible and non-eligible. These two categories were designed to mirror statutory language in Act 78 (as amended by Act 56 of 2003). The Revenue Standards will also help ensure a consistent and equal level of wireless E9-1-1 service across the Commonwealth.

### ELIGIBLE USES OF WIRELESS E9-1-1 REVENUE

The following items represent eligible expenditures and uses of wireless E9-1-1 revenue in Pennsylvania.

1. Lease, purchase, or maintenance of existing enhanced 9-1-1 service telephone equipment (e.g., ANI and ALI), including necessary computer hardware, software, and database provisioning for Phase II capability for PSAPs with approved Wireless Plans. Such expenditures and equipment must comply with the Technical Standards as defined and provided in the Wireless E9-1-1 State Plan, and must achieve Phase II capability.
2. Customer Premise Equipment (CPE) upgrades compliant with wireless E9-1-1 Phase II service (e.g., 20-digit upgrade). CPE upgrades must achieve Phase II capability to be considered eligible.
3. Trunk Interface Unit (TIU) cards for dedicated wireless trunks.
4. Call accounting system replacement, upgrade, maintenance, and initial purchase of a call accounting system.
5. The rates associated with the 9-1-1 service suppliers’ enhanced emergency telephone system network services for PSAPs with approved Wireless Plans for Phase I and II wireless E9-1-1 service, including but not limited to, costs associated with ALI format updates and ALI re-bids.



6. Expenditures for the lease, purchase, modification, or upgrade of systems and devices required to provide Phase II wireless enhanced 9-1-1 service. Such expenditures shall be consistent with the guidelines established by the FCC in its King County, Washington decision. Such expenditures and equipment shall comply with the Technical Standards (as defined and provided in the Wireless E9-1-1 State Plan) regarding such equipment, and must achieve Phase II capability.
7. GIS mapping (and necessary addressing) for Phase II location requirements. Any funds provided by PEMA to counties from the Wireless E9-1-1 Fund shall be used by the County only for GIS- and mapping-related expenditures. Such expenditures and equipment shall comply with the Mapping Standards, as defined and provided in the Wireless E9-1-1 State Plan.
8. Expenditures for the preparation and submission of a County's Wireless E9-1-1 Plan, Funding Application, and other professional services.
9. Costs of a triennial audit, pursuant to §11.5(e) of Act 78, as amended.
10. Back-up power and service for PSAPs with approved County Wireless Plans.
11. The costs incurred of salaries of employees hired by the County for 9-1-1 service; provided, however, that no more than 70 percent of the disbursements a PSAP receives during PEMA's fiscal year may be used to fund personnel training, salary, and benefit costs.
12. The costs incurred to educate consumers regarding the operations, limitations, role, and responsible use of wireless E9-1-1 service, as provided in Section 11.5(a)(3) of Act 78 as amended by Act 56 of 2003.
13. Costs related to the continued operation and maintenance of wireless E9-1-1 service.
14. CAD system purchases, maintenance, or upgrades necessitated by or that facilitate Phase II capability. CAD system purchases, maintenance, or upgrades that facilitate only Phase I capability are not eligible. Examples include, but are not limited to ALI data stream format change to CAD interface.
15. Voice logging recorder purchase or replacement.
16. Dedicated wireless 9-1-1 trunks, circuits, or equivalent.



## **NON-ELIGIBLE USES OF WIRELESS 9-1-1 REVENUE**

1. Any costs necessary to house the wireless E9-1-1 system, as provided in §11.5(b) of Act 78, as amended by Act 56 of 2003.
2. Any costs for the purchase of real estate, cosmetic remodeling, ambulances, fire engines, or other emergency vehicles, utilities, and taxes, as provided in §11.5(b) of Act 78 (as amended by Act 56 of 2003).
3. CAD system purchases, maintenance, or upgrades that only facilitate Phase I capability. (Such expenditures for Phase II capability are eligible.)
4. The Pennsylvania State Police are not eligible to receive any reimbursement from the moneys collected from the wireless E9-1-1 surcharge, as provided in Section 4.1(b) of Act 78, as amended.



## **APPENDIX E – PSAP WIRELESS E9-1-1 FUNDING PROCEDURES AND APPLICATION**

PEMA has adopted the following PSAP Wireless E9-1-1 Funding Procedures and Application (hereafter, Funding Application) in accordance with §§11.4 and 11.5, et seq., of Act 78, as amended, of the Commonwealth of Pennsylvania.

The instructions govern the submission of cost estimates for the Fiscal Year beginning on July 1, 2005, and ending June 30, 2006 (i.e., FY 2006). The instructions also apply to PSAPs that have incurred Phase I/II costs dating back to January 1, 1998. PSAPs that have incurred costs prior to June 30, 2005, will need to submit a separate Funding Application to PEMA on or before April 1, 2005,<sup>13</sup> to cover costs incurred dating back to January 1, 1998. Each PSAP should make a distinction that the Funding Application is to cover costs incurred prior to June 30, 2005.

Every PSAP is eligible for disbursements from the Wireless E9-1-1 Fund whether or not those costs have been incurred. Every PSAP is eligible for reimbursement from the Wireless E9-1-1 Fund for costs incurred for wireless E9-1-1 service dating back to January 1, 1998.

PEMA's intent is to disburse funds to every eligible PSAP for 100 percent of their eligible expenses, in the most expeditious manner possible, and subject to the availability of funds in the Wireless 9-1-1 Fund. If sufficient funds are not available to reimburse every PSAP for 100 percent of their eligible costs, then PEMA will determine the most equitable distribution that is PSAP-neutral, with the goal of 100 percent reimbursement in the most expeditious manner possible.

### **STATUTORY REQUIREMENTS FOR SUBMITTING FUNDING APPLICATIONS**

PSAPs are required to submit a Funding Application to PEMA no later than April 1, 2005.<sup>14</sup> The Funding Application shall consist of expenditures the PSAP/county expects to incur in the upcoming fiscal year (July 1-June 30) for the implementation and maintenance of wireless E9-1-1 service.

Because PSAPs are eligible for costs incurred dating back to January 1, 1998, those PSAPs will need to submit a separate Funding Application by April 1, 2005. Thus, PSAPs that incurred Phase I/II deployment costs dating back to 1998 may need to submit two separate Funding Applications: one Funding Application for expenses incurred dating back to 1998, and one Funding Application for anticipated expenditures from July 1, 2005-June 30, 2006.

On June 1, PEMA will notify each county/PSAP that submitted a Funding Application of which items are considered eligible. Eligible costs are those determined by PEMA to be in furtherance

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<sup>13</sup> The statutory deadline for submitting Funding Applications is March 3 of each year. However, PEMA has allowed PSAPs to submit a letter of intent (to request funding) by March 3, 2005, and the Funding Application by April 1, 2005.

<sup>14</sup> PEMA has allowed PSAPs to submit a letter of intent (to request funding) by March 3, 2005, and the Funding Application by April 1, 2005.



of the Statewide Wireless E9-1-1 Plan, and included as Eligible Expenditures in the Revenue Standards established by PEMA; provided, however, that such costs submitted shall also meet or exceed the technical standards established by PEMA for the deployment of Phase I/II wireless E9-1-1 service.

PEMA will disburse to each PSAP/county the eligible costs, pursuant to the previously referenced requirements and standards. Payments will be made in four equal payments in the first month of each quarter in PEMA's fiscal year, or according to the schedule below:

<u>FY Quarters</u>	<u>Quarterly Payments Made in:</u>
July, August, September	July
October, November, December	October
January, February, March	January
April, May, June	April

## **STATUTORY PROHIBITIONS ON THE USE OF WIRELESS E9-1-1 FUNDS**

Pursuant to §11.5(b), "...no PSAP shall receive a disbursement from the fund for any cost necessary to house the wireless E9-1-1 system or for the purchase of real estate, cosmetic remodeling, ambulances, fire engines or other emergency vehicles, utilities, taxes and other expenses as determined by the agency. No more than 70% of the disbursements which a PSAP receives from the fund during the agency's fiscal year may be utilized to fund personnel training, salary and benefit costs...."

In addition, §4.1(b) of Act 78, as amended, specifically prohibits the Pennsylvania State Police from being reimbursed with moneys collected from the wireless surcharge.

## **PHASE I/II LETTER OF REQUEST**

If a PSAP is submitting a Funding Application for costs incurred dating back to January 1, 1998, or has deployed Phase I/II, or has submitted Phase I/II requests, the PSAP must submit a copy of each Phase I/II request letter that was sent to the wireless carriers in the PSAP's jurisdiction. If a PSAP has already deployed either Phase I or II, or both, that PSAP will need to submit a list of all carriers deployed, the Phase (e.g., Phase I or II) deployed, and the "live" date.

If a PSAP has not submitted a Phase I/II request, the PSAP must file a letter of intent with PEMA. The letter must state that the PSAP either intends to submit a request for Phase I/II service or intends to ask PEMA to submit such a request on its behalf, and the date on which the PSAP expects to submit a request. PEMA encourages PSAPs that have not yet submitted requests to allow PEMA to submit on its behalf. The purpose of this is to enable deployment of all the PSAPs in a given area or region, which will lower carrier deployment costs, and increase the amount of available funds.



## **FUNDING APPLICATION INSTRUCTIONS**

### ***EQUIPMENT, SYSTEMS, AND SERVICES RELATED TO WIRELESS E9-1-1***

Pursuant to §11.4(a)(1), PEMA will provide full (100 percent) funding (subject to availability of funds) for any equipment, services, and systems used for deployment and implementation of wireless E9-1-1 service. In addition, PEMA has determined that GIS/Mapping for Phase II is a necessary requirement for a PSAP to use Phase II data sent by wireless carriers. PSAPs shall comply with the mapping standards established by PEMA, provided in a separate document. This category may include, but not be limited to, the following:

- Customer Premise Equipment (CPE) upgrades specifically for wireless E9-1-1 (e.g., 20-digit upgrade) for Phase II capability only
- Trunk Interface Unit (TIU) cards for dedicated wireless trunks
- Voice logging recorder expansion for wireless trunks
- CAD system upgrades, maintenance, or lease caused or necessitated by wireless E9-1-1 (e.g., ALI data stream format change to CAD interface) for Phase II capability only
- Professional services
- Initial purchase of a call accounting system if the PSAP does not already have such a system
- GIS/mapping, upgrades, implementation, integration, maintenance, or lease.

### ***LOCAL EXCHANGE CARRIER (LEC), OR 9-1-1 SERVICE SUPPLIER COSTS***

PEMA shall provide full (100 percent) funding (subject to availability of funds) for any LEC costs required solely for the processing of wireless E9-1-1 calls. These costs may include the following:

- Dedicated wireless 9-1-1 trunks (non-recurring and monthly recurring costs)

### ***PERSONNEL COSTS***

Pursuant to §11.5 of Act 78, as amended, PEMA will provide proportional funding (subject to availability of funds) for the costs incurred of salaries of employees hired by the County for 9-1-1 service, which are not funded by landline revenue (i.e., Act 78 moneys). Funding for shared personnel costs is dependent on the percentage of wireless E9-1-1 calls and a PSAP's relative deployment status. The specific formula for percentage of wireless calls is the ratio of the number of wireless E9-1-1 calls to the total number of emergency calls received by a PSAP. In addition, the amount of shared personnel costs that will be funded by PEMA is dependent on the PSAP's deployment status, as listed below:

- The amount of shared personnel costs that will be funded is limited to 25 percent if a PSAP has deployed a majority of wireless carriers in its service area with Phase I service.



- The amount of shared personnel costs that will be funded is limited to 50 percent if a PSAP has deployed all wireless carriers in its service area with Phase I service.
- The amount of shared personnel costs that will be funded is limited to 75 percent if a PSAP has deployed a majority of wireless carriers in its service area with Phase II service.
- The amount of shared personnel costs that will be funded will be 100 percent if a PSAP has deployed all wireless carriers in its service area with Phase II service.

Shared personnel funding is further limited by §11.5 of Act 78 (as amended by Act 56 of 2003), no more than 70 percent of the funds disbursed by PEMA to a PSAP can be used to fund personnel training, salary, and benefit costs.

### **SHARED COSTS**

PEMA will provide proportional funding (subject to availability of funds) for any equipment, systems, or services that are shared between wireless and landline E9-1-1 service and that are not funded by landline revenue (i.e., Act 78 moneys). Funding for shared costs is dependent on the percentage of wireless E9-1-1 calls and a PSAP's relative deployment status. These limitations apply only to shared costs. The specific formula for percentage of wireless calls is the ratio of the number of demonstrated wireless E9-1-1 calls to the total number of emergency calls. In addition, the amount of shared costs that will be funded by PEMA is dependent on the PSAP's relative deployment status, as listed below:

- The amount of shared costs that will be funded is limited to 25 percent if a PSAP has deployed a majority of wireless carriers in its service area with Phase I service.
- The amount of shared costs that will be funded is limited to 50 percent if a PSAP has deployed all wireless carriers in its service area with Phase I service.
- The amount of shared costs that will be funded is limited to 75 percent if a PSAP has deployed a majority of wireless carriers in its service area with Phase II service.
- The amount of shared costs that will be funded will be 100 percent if a PSAP has deployed all wireless carriers in its service area with Phase II service.

The types of shared costs may include, but not be limited to the following:

- CPE purchase, replacement, maintenance, or lease
- CAD purchase, replacement, upgrade, maintenance, or lease for Phase II capability
- Voice logging recorder purchase or replacement
- Professional services
- Call accounting software replacement, upgrade, or maintenance



## FUNDING APPLICATION WORKSHEET

Any PSAP intending to implement Phase I or II wireless E9-1-1 service is required to submit a Funding Application to PEMA, and will need to use the form provided by PEMA. The Funding Application worksheet has been designed to simplify the process of applying for funding for wireless E9-1-1 service and improvements. The worksheet will also be used for the “true-up” process at the end of each fiscal year.

The Funding Application Worksheet is divided into six separate areas, as listed below. The numbers for each area correspond to a specific part of the application worksheet.

1. **PSAP Information**. In the spaces provided, please list the PSAP name, county name, the total amount requested, and the name and title of the person completing the form.
  
2. **Call Volume Data**. Call volume data should be provided for the last full calendar year (January-December). For FY 2006, this information should be call volume for January 1, 2004-December 31, 2004. If a PSAP has a call accounting system or software, this information should be placed under “Actual.” If this information is unavailable, or if a PSAP does not have a call accounting system, then list estimates in the column marked “Estimated.” If actual data are not available, the PSAP must attach to the worksheet an explanation of how the estimate was developed. One method to estimate is to count calls manually for a 30-day period, then multiply that number by 12 to get an annual estimate. If using this method, the PSAP will need to manually count the number of wireless calls, the number of wireline/landline calls, total emergency calls, and total calls to the PSAP (e.g., non-emergency). Another alternative is to list the call volume information provided in your most recent County Plan. While the former method is not accurate, it will suffice for an estimate as long as the 30-day window is not unusually busy or slow. Call accounting software will take most of the guesswork out of this part of the worksheet.
  - a. *Total telephone calls* should include all calls answered by the call-takers and dispatchers in the PSAP. The total should include all 9-1-1 calls (landline and wireless), all seven-digit dial numbers, and any other administrative calls answered in the PSAP.
  - b. *Total emergency telephone calls* should include all emergency calls answered by the call-takers and dispatchers in the PSAP. The total should include all 9-1-1 calls (landline and wireless), as well as emergency calls answered on 10-digit telephone lines.
  - c. *Total 9-1-1 calls* should include all 9-1-1 calls answered by the PSAP, and should include landline and wireless 9-1-1 calls.
  - d. *Total wireless 9-1-1 calls* should include all wireless 9-1-1 calls answered by the PSAP.
  - e. *Total landline 9-1-1 calls* should include all landline 9-1-1 calls answered by the PSAP.



3. **Equipment, Systems, or Services Related to Wireless E9-1-1**. In this section, list all equipment, systems, or services used for the implementation and maintenance of wireless E9-1-1 service. This category also includes professional services and costs associated with wireless E9-1-1 service. Costs should be broken down into the following three groups:
  - a. *Non-Recurring Costs (NRCs)* are one-time costs incurred by the PSAP for planning for and implementing wireless E9-1-1 service. Examples include, but are not limited to purchase and installation costs, professional services, and costs associated with the preparation of a County Wireless E9-1-1 Plan or Funding Application.
  - b. *Monthly Recurring Costs (MRCs)* are those on-going, monthly costs associated with the on-going provision of wireless E9-1-1 service. Examples include, but may not be limited to monthly maintenance costs, or on-going, recurring costs associated with professional services.
  - c. *Yearly Recurring Costs (YRCs)* are annualized Monthly Recurring Costs. To obtain this number, take the MRC and multiply by 12 (months).
  
4. **Local Exchange Carrier (LEC) Costs**. In this section, list all LEC costs for the provision and maintenance of wireless E9-1-1, as explained and defined in previous sections. Do not list LEC charges specific to the provision and maintenance of 9-1-1 service. Costs should be broken down into the following three groups:
  - a. *Non-Recurring Costs (NRCs)* are one-time costs incurred by the PSAP for implementing wireless E9-1-1 service. Examples include, but are not limited to purchase and installation costs.
  - b. *Monthly Recurring Costs (MRCs)* are those on-going, monthly costs associated with the on-going provision of wireless E9-1-1 service. Examples include, but may not be limited to monthly maintenance costs.
  - c. *Yearly Recurring Costs (YRCs)* are the annualized Monthly Recurring Costs. To obtain this number, take the MRC and multiply by 12 (months).
  
5. **Personnel Costs**. In this section, list personnel costs, broken down by each employee or line item. Please remember to list the total personnel costs. Funding for personnel costs is dependent on the percentage of wireless E9-1-1 calls (to total emergency calls), and a PSAP's relative deployment status. It should be noted that no more than 70 percent of the disbursements that a PSAP receives may be used to fund personnel training, salary, and benefit costs. Funding for shared personnel costs should be determined as follows:
  - a. *Personnel Costs Not Funded by Wireline Funds*. List the dollar amount of personnel costs that were not funded from the wireline contribution rate.
  - b. *Shared Personnel Costs*. Take the amount from Item (a) above, and enter it in item (b).
  - c. *Funding for Shared Personnel Costs*. Take the amount of Shared Personnel Costs (from Item (b) above) and multiply that by the deployment status of the county. That number can only be 25%, 50%, 75%, or 100% (see previous explanation)



6. **Shared Costs.** In this section, list any shared costs. Shared costs are those costs that were not covered or paid for by wireline/landline revenue (i.e., Act 78 moneys). Shared costs are also dependent on the percentage of wireless 9-1-1 calls (to total emergency calls) and a PSAP's relative deployment status.

**Non-Recurring Costs (NRCs) should be determined as follows:**

- a. *Non-Recurring Costs (NRCs) Not Funded by Wireline Revenue* are one-time costs incurred by the PSAP. List the dollar amount of NRCs that were not funded from the wireline contribution rate.
- b. *Estimated Shared NRCs.* Take the NRCs (from Item (a) above) and enter it in item (b).
- c. *Estimated Funding for Shared NRCs.* Take the Estimated Shared NRCs (from Item b above) and multiply that amount by the deployment status of the county. That number can only be 25%, 50%, 75%, or 100% (see previous explanation).

**Monthly Recurring Costs (MRCs) should be determined as follows:**

- a. *Monthly Recurring Costs (MRCs) Not Funded by Wireline Revenue* are those on-going, monthly costs. List the dollar amount of MRCs that were not funded from the wireline contribution rate.
- b. *Estimated Shared MRCs.* Take the MRCs (from Item (a) above) and enter it in item (b).
- c. *Estimated Funding for Shared MRCs.* Take the Estimated Shared MRCs (from Item b above) and multiply that amount by the deployment status of the county. That number can only be 25%, 50%, 75%, or 100% (see previous explanation).
- d. *Estimated Shared Yearly Recurring Costs.* Yearly Recurring Costs (YRCs) are the annualized Estimated Funding for Shared MRCs. To obtain this number, take the Estimated Funding for Shared MRCs and multiply by 12 (months).

In summary, two calculations will need to be made. The first calculation is to determine the amount of the item not funded with the wireline contribution rate. Second, is to take the not funded amount and multiply it by the PSAP's relative deployment status, as previously defined (25% for partial Phase I deployment, 50% for 100% Phase I deployment, 75% for partial Phase II deployment, and 100% for 100% Phase II deployment). The specific formula is provided on the Funding Application Worksheet.



## **SUBMISSION INSTRUCTIONS**

County 9-1-1 Managers/Directors will need to complete the Funding Application Worksheet. After completing the Funding Application Worksheet, total the funding requests and list that figure at the top of the form, in the space marked "Total Amount Requested." Please submit the completed form with any necessary documentation to Ms. Michelle Musser, State 9-1-1 Manager, PEMA, 2605 Interstate Drive, Harrisburg, PA 17110-9364. In the alternative, you may email the funding request with any supporting documentation to Ms. Musser at [mmusser@state.pa.us](mailto:mmusser@state.pa.us).

The deadline for submission of the Funding Application is April 1, 2005.<sup>15</sup>

## **APPROVAL AND DISBURSEMENT PROCESS**

After submission, PEMA will review each Funding Application. PEMA will determine if each item in the Funding Application is an eligible expense as defined in the Revenue Standards, is in furtherance of the Statewide Wireless E9-1-1 Plan, and is consistent with the County Wireless E9-1-1 Plan. PEMA will notify each PSAP/county of which costs are considered eligible, along with the dollar amount approved. PEMA will disburse the funds in four equal quarterly payments, subject to the availability of funds. PEMA's goal is to fund 100 percent of eligible costs to all PSAPs submitting Funding Applications.

## **RECONCILIATION PROCESS**

Under §11.5 of Act 78, as amended, PEMA is required to conduct an annual reconciliation for each PSAP submitting a Funding Application and receiving payments in the prior fiscal year. The reconciliation will be conducted in the first quarter of each fiscal year, and will cover the immediate past fiscal year. The first reconciliation will be in July, August, and September 2006.

The purpose of the reconciliation is to ensure that PSAPs are not reimbursed for expenditures greater than the actual costs to implement Phase I/II, to ensure that disbursements from the Wireless 9-1-1 Fund to PSAPs are in furtherance of the Statewide Wireless E9-1-1 Plan, and to ensure that reimbursements are eligible costs as provided in the Revenue Standards established by PEMA.

Where appropriate, the PSAP shall submit sworn and true paid invoices, purchase orders, or other examples of expenditures, and that funds were actually spent on the items specified in the Funding Application.

Payments received in excess of the approved costs (i.e., overpayment) shall be refunded to PEMA, or, with PEMA's approval, credited to qualifying payments in subsequent periods on schedules determined by PEMA. In addition, each PSAP requesting and receiving funding from PEMA shall show how actual call count volume varied from information presented in the

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<sup>15</sup> The statutory deadline is March 3 of each year. However, for 2005, PEMA is allowing PSAPs to submit a letter of intent (to submit a funding request) by March 3, 2005, with a deadline of April 1, 2005, for submitting Funding Applications.



estimate for call volume. PEMA strongly encourages each PSAP requesting and receiving funding to develop and maintain accurate, reliable, and verifiable information on call volume.

## **AMENDMENTS TO THE FUNDING PROCEDURES AND APPLICATION**

PEMA reserves the right to adopt amendments to the Funding Procedures and Applications as may be necessary to comply with the requirements of Act 78, as amended. PSAPs are strongly encouraged to suggest changes and improvements they feel may be appropriate to improve the implementation and funding of Phase I and II service in the Commonwealth of Pennsylvania.

## **WIRELESS E9-1-1 FUNDING APPLICATION AND WORKSHEET**

The following pages contain the worksheet that PSAPs will need to use for Funding Applications.



**COMMONWEALTH OF PENNSYLVANIA  
PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY**

**WIRELESS E9-1-1 PSAP FUNDING APPLICATION  
WORKSHEET FOR FUNDING: FY 2006 (JULY 1, 2005-JUNE 30, 2006)**

<p><b>1. PSAP INFORMATION</b> REFERENCE INSTRUCTION PAGE 5 #1</p>
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PSAP Name: \_\_\_\_\_ Total Amount Requested: \_\_\_\_\_  
 County: \_\_\_\_\_  
 Name: \_\_\_\_\_ Title: \_\_\_\_\_

<p><b>2. CALL VOLUME DATA</b> REFERENCE INSTRUCTION PAGE 5 #2</p>
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Description	Actual	Estimated
(a) Total telephone calls handled by PSAP		
(b) Total emergency telephone calls handled by PSAP		
(c) Total 9-1-1 calls handled by PSAP		
(d) Total wireless 9-1-1 calls handled by PSAP		
(e) Total landline 9-1-1 calls handled by PSAP		

### 3. EQUIPMENT, SYSTEMS, OR SERVICES RELATED TO WIRELESS E9-1-1

REFERENCE INSTRUCTION PAGE 6 #3

If more space is needed, please copy this page, attach it to the worksheet, and indicate in the last row below that more items have been added.

Description	(a) Estimated Non-Recurring Costs (NRCs)	(b) Estimated Monthly Recurring Costs (MRCs)	(c) Estimated Yearly Recurring Costs (YRCs)
<b>Total Estimated Cost</b>			

### 4. LEC COSTS FOR WIRELESS 9-1-1

REFERENCE INSTRUCTION PAGE 6 #4

If more space is needed, please copy this page, attach it to the worksheet, and indicate in the last row below that more items have been added.

Description	(a) Estimated Non- Recurring Costs (NRCs)	(b) Estimated Monthly Recurring Costs (MRCs)	(c) Estimated Yearly Recurring Costs (YRCs)
<b>Total LEC Costs for Wireless 9-1-1</b>			

## 5. PERSONNEL COSTS FOR WIRELESS 9-1-1

REFERENCE INSTRUCTION PAGE 6 #5

If more space is needed, please copy this page, attach it to the worksheet, and indicate in the last row below that more items have been added.

Personnel Cost Description	(a) Personnel Costs Not Funded by Wireline Funds	(b) Shared Personnel Costs	Deployment Status (25%, 50%, 75%, 100%)	(c) Funding for Shared Personnel Costs
<b>Total Personnel Costs</b>				

**Formula for Determining Funding for Personnel Costs:**

Personnel Costs not funded with Wireline = Shared Personnel Costs

Shared Personnel Costs X Deployment Status = Funding for Shared Personnel Costs

## 6. SHARED COSTS

REFERENCE INSTRUCTION PAGES 6 AND 7 #6

If more space is needed, please copy this page, attach it to the worksheet, and indicate in the last row below that more items have been added.

This table is to be used for Non-Recurring Costs (NRCs)

Description	(a) Total NRCs not funded with wireline revenue	(b) Estimated <u>Shared</u> NRCs	Deployment Status Reference Page 4 (25%, 50%, 75%, 100%)	(c) Estimated Funding for Shared NRCs
<b>Total Estimated Cost</b>				

**Formula for Estimated Funding for Shared NRCs:**

Costs (not funded with wireline revenue) = Estimated Shared NRCs

Estimated Shared NRCs X Deployment Status = Estimated Funding for Shared NRCs



The table below is to be used for Monthly Recurring Costs (MRCs) and Yearly Recurring Costs (YRCs).

Description	(a) Total MRCs not funded with wireline	(b) Estimated Shared MRCs	Deployment Status Reference Page 4 (25%, 50%, 75%, 100%)	(c) Estimated Funding for Shared MRCs	(d) Estimated Shared YRCs
<b>Total Estimated Cost</b>					

**Formula for Monthly Recurring Shared Costs:**

**Cost (not funded with wireline) = Estimated Shared MRCs**

**Estimated Shared MRCs X Deployment Status = Estimated Funding for Shared MRCs**



## APPENDIX F – WIRELESS CARRIER COST RECOVERY— PROCEDURES AND APPLICATION

PEMA has adopted these instructions in accordance with §§11.4 and 11.5, et seq., of Act 78, as amended, of the Commonwealth of Pennsylvania. The instructions apply to wireless carriers and govern the submission of cost estimates for the fiscal year beginning on July 1, 2005, and ending June 30, 2006 (i.e., FY 2006). The instructions also apply for all costs incurred by wireless carriers dating back to January 1, 1998. Wireless carriers that have incurred costs prior to June 30, 2005, may need to submit two Cost Recovery Plans: one for prior costs, and one for estimated costs for FY 2006.

The statutory deadline for submitting Cost Recovery Plans (CRPs) is March 3 each year. However, PEMA has amended the process this year to provide wireless carriers with sufficient time to submit a CRP. Any wireless carrier that intends to seek cost recovery for Phase I/II costs will need to submit a letter of intent to PEMA by March 3, 2005. In that letter, please indicate that you intend to submit a CRP to PEMA. Any wireless carrier that intends to seek reimbursement and/or funding from PEMA will need to submit a CRP by April 1, 2005. In order to be eligible for reimbursement and/or funding, each wireless carrier will also need to submit a Deployment Status Survey that indicates the carrier's Phase I and II deployment status in every county in which it provides service.

For FY 2006, the CRP shall constitute a total cost recovery for the provision of wireless E9-1-1 service (Phase I and II) in all areas of Pennsylvania that the wireless carrier is authorized and licensed to serve, regardless of whether a Phase I/II request has been received. The cost recovery plan is to estimate the costs to deploy the wireless carrier's total service area for Phase I and Phase II.

### PHASE I COST RECOVERY

1. Each CMRS provider shall submit to PEMA a full and detailed cost recovery plan. The cost recovery plan shall show both one-time, nonrecurring costs (NRCs), and monthly recurring costs (MRCs). Each item submitted in each tier shall contain a reasonable estimate of the CMRS provider's costs. Each item shall provide a specific description of each type of expense within each tier and the estimated cost of each item.
  - A. Tier One shall represent the CMRS provider's **one time, nonrecurring costs (NRCs)** incurred in preparing its network to deliver wireless E9-1-1 service in Pennsylvania. Tier One NRCs are defined as those one-time costs incurred by the CMRS provider for development, start-up, engineering, and the purchase and installation of equipment obtained in the provision of wireless E9-1-1 service in Pennsylvania. NRCs shall include, but not be limited to:
    - Equipment acquisition and installation
    - Network upgrades necessary to achieve Phase I and II wireless E9-1-1 service compatibility in Pennsylvania only



- Initial creation and loading of information regarding cell site locations, cell sector identifiers, and routing numbers in Pennsylvania only
  - Establishment of any necessary network connectivity
  - Design, development, and implementation of the CMRS provider's operations and other one-time costs that may be incurred during development and startup of wireless E9-1-1 service in Pennsylvania only
  - Upgrades to the Mobile Telephone Switching Office
  - Connection fee to the 9-1-1 Selective Router
  - R & D directly related to wireless E9-1-1 service in Pennsylvania only
  - Network design directly related to wireless E9-1-1 service in Pennsylvania only
  - Test plan development related to wireless E9-1-1 service in Pennsylvania only
  - Software directly related to wireless E9-1-1 service in Pennsylvania only
  - Other such costs to the extent that the parties involved have agreed
- B. Tier Two of the plan shall represent the CMRS provider's **monthly recurring costs (MRCs)** for providing wireless E9-1-1 service in Pennsylvania. Tier Two MRCs are those costs incurred monthly by the CMRS provider in the ongoing provision of wireless E9-1-1 service in Pennsylvania. Such MRCs shall include, but not be limited to:
- Services provided by third party vendors directly related to wireless E9-1-1 service in Pennsylvania only
  - Updating database information in various databases such as Cell Site information and PSAP routing information
  - Facilities
  - Database management
  - Reporting
  - Operations directly related to wireless E9-1-1 service in Pennsylvania only
  - Routing charges directly related to wireless E9-1-1 service in Pennsylvania only
  - Engineering directly related to wireless E9-1-1 service in Pennsylvania only
  - P-ANI administration in Pennsylvania only
  - Other such costs to the extent that the parties involved have agreed
2. Any information, cost recovery plan, monthly claim, or annual statement submitted by the CMRS provider shall be considered proprietary information as required and authorized by §11.7 of Act 78 as amended. All information submitted to PEMA shall be marked or stamped "Confidential" by the CMRS provider.
3. The CMRS provider shall maintain documentation for all charges and invoices as they relate to the implementation and maintenance of wireless E9-1-1 service in Pennsylvania. The books, records, and documents of the CMRS provider, insofar as they relate to the provision of wireless E9-1-1 service in Pennsylvania or any money received from PEMA, shall be maintained for a reasonable period of time after final payment from PEMA to the CMRS provider. Such books, records, and documents shall be subject to review or audit at any reasonable time and upon reasonable notice by PEMA or its appointed representative(s). The financial statements shall be prepared in accordance with generally accepted accounting principles.



4. The CMRS provider's activities conducted and records maintained pursuant to the implementation and maintenance of wireless E9-1-1 service in Pennsylvania shall be subject to monitoring and evaluation by PEMA, or its duly appointed representatives.
5. PEMA will reimburse the CMRS provider for its eligible costs for wireless E9-1-1 service in Pennsylvania, subject to the availability of funds. The payment of an invoice by PEMA shall not prejudice PEMA's right to object to or question any invoice or matter in relation thereto. Such payment by PEMA shall neither be construed as acceptance of any part of the work or service provided nor as an approval of any of the amounts invoiced therein. Submission of an invoice by a CMRS provider to PEMA shall not constitute a financial or legal liability on the part of PEMA. Any such payment by PEMA to the CMRS provider shall be subject to the availability of funds, as determined by PEMA.
6. The CMRS provider shall submit a sworn and true invoice to PEMA for its Tier One NRCs. Any such payment shall be subject to the availability of funds, as determined by PEMA. In no event shall a CMRS provider be reimbursed an amount in excess of its actual costs.
7. The CMRS provider shall submit sworn and true invoices to PEMA for its Tier Two MRCs. The monthly reimbursement shall be effective on the date concurrent with deployment of wireless E9-1-1 in the CMRS provider's service area, as noted on the Phase I request letter; provided, however, that reimbursement shall not take place prior to deployment. The monthly amount shall not include Non-Recurring Charges (as defined above). Any such payment shall be subject to the availability of funds, as determined by PEMA. In no event shall a CMRS provider be reimbursed an amount in excess of its actual costs.

For purposes of cost recovery, a sworn and true invoice consists of an invoice prepared by the CMRS provider that describes the cost recovery being requested. The invoice must be attested by an authorized agent of the CMRS provider. CMRS providers must submit documentation that the costs were actually incurred as invoiced. Internal costs (such as engineering time, facilities, proportionate share of software and personnel, etc.) must be supported by reasonable documentation.
8. If an invoice submitted by a CMRS provider is for an amount different from that provided for in items 6 and 7, such invoice shall not be paid by PEMA to the CMRS provider. PEMA shall return the invoice to the CMRS provider. The CMRS provider may then submit a corrected invoice for the amounts agreed upon.
9. PEMA shall have the authority to deduct from such payments any amount owed by the CMRS provider to PEMA. In such an event, PEMA shall notify the CMRS provider at the time the invoice is submitted.
10. The CMRS provider shall complete and sign an "Authorization Agreement for Automatic Deposits (ACH Credits) Form." PEMA will provide this form to the CMRS provider. Once this form is completed correctly and submitted to PEMA, all payments to the CMRS provider shall be made through the Commonwealth of Pennsylvania's Automated Clearing House wire transfer system. The CMRS provider shall not invoice PEMA for services until this form is completed and submitted to PEMA.



11. All payments made by PEMA to the CMRS provider for reimbursement of wireless E9-1-1 costs shall be subject to the availability of funds. Submission of an invoice from a CMRS provider to PEMA shall not constitute a financial liability on the part of PEMA. In the event that funds are not available, PEMA shall provide a pro-rated amount that is in accordance with the provisions of Act 78, as amended, of the Commonwealth of Pennsylvania, and that allows reimbursement in the most expeditious manner possible.

## PHASE II COST RECOVERY

1. Each CMRS provider seeking cost recovery for Phase II must provide a sworn statement that certifies that the Phase II solution meets the minimum accuracy requirements established by the FCC.
2. The CMRS provider must submit a detailed breakdown of all actual costs incurred in implementing and maintaining Phase II wireless E9-1-1 service in Pennsylvania. **DO NOT** include any underlying costs for Phase I. The CMRS provider should provide sufficient detail and explanation for the costs incurred and why those costs were needed for Phase II deployment. If a CMRS provider would have incurred the cost in the absence of Phase II wireless E9-1-1 service, then that particular item is not a valid Phase II cost.
3. CMRS providers using or proposing solutions that will provide service to an area larger than Pennsylvania (e.g., a national MPC) must prorate the cost of the shared components based on the percentage of cell sites in Pennsylvania when the expense was incurred.
4. The CMRS provider should include a subscriber count as of February 28, 2005.
5. The CMRS provider should include the total number of cell sites, as well as the number of cell sites deployed with Phase II, as of February 28, 2005.
6. The CMRS provider should include a **brief** description of its Phase II solution.
7. Phase II costs should be broken down into Monthly Recurring Costs (MRCs) and Non-Recurring Costs (NRCs).
8. Examples of Phase II costs may include, but are not limited to, the following infrastructure components of Phase II service, as defined in J-STD-036:
  - Mobile Switching Center (MSC)
  - Mobile Positioning Center (MPC)
  - Position Determining Entity (PDE)
  - Coordinate Routing Database (CRDB)
  - Emergency Service Message Entity (ESME)
  - Location Measurement Units (LMU)
  - GPS chips in handsets
  - Accuracy testing
  - Drive testing



- Service Provider-Based Solutions (to the extent the service provider is supplying components that are directly needed to implement or maintain Phase II service.
9. Cost information should include but not be limited to the following. Items listed as equipment should contain a description of the equipment, its purpose for Phase II, the quantity, cost, and manufacturer. Items for external contractors should provide a name of the company, a description of the work performed, the purpose for Phase II, and the cost of the service provided. Items listed as internal to the CMRS provider should provide information such as department, description of work performed, the purpose for Phase II, and the cost.
10. The CMRS provider should make every reasonable effort to list items in the above categories. Items listed in each category should be itemized to allow PEMA to fully and completely understand the extent of the request or statement. Any costs associated with Phase II implementation should be identified as Phase II costs, and in sufficient detail so PEMA knows why this cost is necessary. PEMA will not accept items listed as “maintenance,” “travel,” or “contractor.” Greater detail and explanation are necessary, such as “software upgrade to MPC to allow 20-digit processing,” or “maintenance of MPC equipment,” or “drive testing.” This detail will provide PEMA with sufficient explanation to determine if the request falls within PEMA’s guidelines. It should be noted that submission of costs does not represent a financial liability by PEMA.

## **WIRELESS CARRIER SELF-RECOVERY**

Section 11.4(d)(5) of Act 78 (as amended) permits wireless carriers to “self recover” Phase I and II costs from their subscribers. Specifically, “...nothing in this act shall prevent a wireless provider from recovering its costs of implementing and maintaining wireless E9-1-1 service directly from its customers, whether itemized on the customer’s bill or by any other lawful method. No wireless provider that levies such a separate fee for provision of E9-1-1 wireless service...may receive a reimbursement for the same costs....”

Pursuant to the above-cited section, for any wireless carrier “self-recovering,” that carrier shall certify to PEMA that it is not requesting reimbursement for the same costs incurred in Pennsylvania. In addition, each carrier shall provide the following information:

- Dollar amount of the fee
- Dollar amount or portion of the fee allocated to recover Phase I/II costs in Pennsylvania only
- Dollar amount collected from Pennsylvania wireless users for self-recovery for Phase I/II costs in Pennsylvania only



## **TRUE-UP PROCESS**

On July 1 of each year, each CMRS provider shall prepare full, complete, true, and sworn invoices and statements on costs incurred in the implementation and maintenance of Phase I and II wireless E9-1-1 service in the Commonwealth of Pennsylvania. This statement shall cover the previous fiscal year. The statement shall contain actual (not estimated) costs of implementing and maintaining wireless E9-1-1 service, and shall be broken down into NRCs and MRCs. The CMRS provider shall provide PEMA with supporting documentation, such as invoices. Internal costs must be supported by reasonable documentation. Such statement is subject to approval by PEMA. In no event shall a CMRS provider be reimbursed an amount in excess of its actual costs.

If the annual statement reveals actual costs that are less than those paid out by PEMA to the CMRS provider, then the CMRS provider shall reimburse PEMA for the amount of the overpayment.

If the annual statement reveals actual costs that are greater than those paid out by PEMA, then PEMA shall reimburse the CMRS provider for the amount of the underpayment; provided, however, that any such payment shall be subject to the availability of funds, as determined by PEMA.