

# 911 Critical Issues Forum

## WIRELESS 911 CHECKLIST

Provided by NENA

### **GENERAL INFORMATION:**

This checklist is provided as a tool to assist 9-1-1 authorities in the implementation of Phase I wireless 9-1-1 service. NENA makes no claim that this is an all-encompassing list, nor that the steps are listed in the order that applies to every PSAP. The expectation is that each PSAP authority that undertakes the implementation of Wireless 9-1-1 service will customize the list as their circumstances dictate. Over time, we would hope that members add steps that may have been omitted.

### **STEP 1 Initial Decision**

- Determine that you want to implement Phase 1 wireless 9-1-1 service. In making this decision consider the following:
  - a. For this step, you are not making a final decision. You should be looking at the operational side of the house such as equipment, staffing, the idiosyncrasies of wireless calls, etc.
  - b. This initial decision may be based more on political considerations than on facts and figures.
  - c. Keep in mind that wireless emergency calls tend to take longer than wireline calls, due largely to the inability of the caller to give an exact location.
  - d. You will typically receive far more calls per incident on wireless than on wireline.
  - e. If you are the dispatching agency for emergency services in your area, you are already receiving at least some of these calls. They may be coming to you through some other agency (e.g., state or county police) and may be filtered, but they are coming into your center.
  - f. If you are not taking any wireless calls right now, your PSAP will probably get bigger. You may only need a couple more trunks, or you may need additional answering positions and personnel to staff them, but you will grow.
  - g. Some money now will save a lot of money later. The implementation of wireless 9-1-1 technology will reduce the average handling time per call, freeing your call takers to answer more calls. Wireless 9-1-1 calls are growing each year as the number of wireless phones continues to increase. If you do not implement Wireless 9-1-1, the cost of additional call takers and answering positions will soon surpass the costs associated with Phases I and II.
  - h. All 9-1-1 systems differ slightly, due to the differences in demographics, political climate, funding mechanisms, configurations, PSAP CPE technology, GIS capability and 9-1-1 service provider technology from one county to the next and from state to state. Because of this, there are no national seminars or reference models that address all the subtleties and nuances of your particular PSAP or system. You will be using what are, essentially, off-the-shelf items to implement Wireless 9-1-1, but finding a model exactly like yours to follow will be extremely difficult. You will have to address all the issues.
  - i. If you are fairly sure that your system or PSAP will choose to proceed, go to the next step.

### **STEP 2 Notifications**

- Determine who the wireless providers in your coverage area are and:
  - a. Send the wireless carriers certified letters indicating that you want to begin negotiations to accept wireless Phase I 9-1-1 calls. (Note that nowhere is the term contract used.)

- b. Include a date for the first planning meeting. Generally speaking, it is a good idea to allow 30 days notice.
- c. Copy these letters to your 9-1-1 provider (typically the LEC) [and the Emergency Telephone Service Committee].
- This step begins the process of developing the cost estimates, workload estimates, and technology choices available to you on an individual case basis.

### **STEP 3 Initial 911 Service Provider (LEC) Contacts**

- Contact the technical representative from your 9-1-1 service provider. You need to determine that company's ability to provide Wireless 9-1-1 services and their preferred technology.
  - a. From this conversation, you should look to determine the impact, if any, on your CPE, trunk configuration, and ALI display format, as well as any options that might be available to you.
  - b. If your 9-1-1 provider will meet with you before you send the letters requesting Phase I service (most will), then you might include this meeting as part of the first step.
  - c. Remember that there is no provision in any legislation that requires you to blindly accept the service in the manner they (the carriers and/or the 9-1-1 service provider) prefer to provide it. You do have choices and there are provisions for settling disputes which, hopefully, will not be needed.

### **STEP 4 The Planning Meeting**

- Conduct a get-to-know-one-another meeting with all of the participants that will be included in your implementation process. Indicate to them that you will not discuss proprietary issues.
  - a. This meeting should include:
    - all of the wireless carriers (may include any subcontractors they utilize)
    - your 9-1-1-service provider
    - your CPE vendor
    - your mapping vendor.

Attempt to resolve the following issues at this meeting:

- b. The method of wireless 9-1-1-call delivery to be employed, agreed to by all participants. It will be CAS, NCAS, or a Hybrid CAS solution.
- c. Establish how the number of trunks from each wireless carrier to the selective routing tandem(s) will be determined. NENA will be issuing an official recommendation later this year:
  - The 9-1-1 authority and the wireless carrier should establish geographic areas to be served by 9-1-1 trunk groups. These geographic areas may be as small as a single city or as large as an entire state. It is expected that many will serve a county or small group of counties.
  - The wireless carrier is responsible for determining how many trunks are required to provide P.01 grade of service to

the designated geographic area and communicating that information to the 9-1-1 authority.

- Establishing trunk groups for specific defined geographic areas provides congestion control (management of the volume of calls from any one geographic area) and facilitates default routing assignments.
3. Determine if you will establish a separate set of wireless 9-1-1 trunks from the selective routing tandem to your PSAP(s). Note the cost for these would probably be borne by the PSAP authority.
  4. Separate wireless trunk groups are not necessary but they do provide a guard against the blocking of wireline 9-1-1 calls in the event of a major incident in public view. This does not necessarily mean a total duplication of the wireline trunking system. You need to discuss this thoroughly with your 9-1-1-service provider.
  5. As mentioned in Step 1, your PSAP is almost certainly going to have to grow to accept wireless calls. Once the total offered load from all the wireless carriers has been computed, your 9-1-1 service provider will assist you in determining how many additional trunks, if any, are required to the PSAP.
  6. Select default and alternate PSAPs. Make sure everyone involved understands the difference.
  7. Identify if any of the players are utilizing subcontractors. You should understand the role and responsibilities of the subcontractors, as well as who is accountable for their performance.
  8. Ask all of the players how they will implement Network Reliability Council and NENA recommendations regarding diversity and redundancy. Ask for explanations of how calls will flow (or not flow) if individual components or communications links fail.
  9. Talk about pANIs, (pseudo Automatic Number Identification), ESRDs (Emergency Services Routing Digits), and ESRKs (Emergency Services Routing Keys) so that you understand what they are. You will be involved in making a choice concerning which of these methods of identifying cell sites and/or cell faces will be employed in your system. Ask about the effects each one will have on your ALI information, the ability to identify your response agencies, the support of Selective Transfer, and the flexibility for PSAP reassignment.
  10. Discuss cell sector naming conventions. Establish what information will go in the Subscriber name field versus the Street Address field. NCAS requires the creation of default records in the ALI database that may require special attention.
  11. Determine if any of the issues described above create any special demands or problems for your CPE.
  12. Determine how your mapping, if you have one, will interface with the wireless calls and be used to identify the responders assigned to the area covered by the cell/sector. It might also be used to facilitate transfers to neighboring PSAPs. If it can do some of these things, it may give you more flexibility and more choices. Computerized mapping is not mandatory, but absolutely recommended, especially in Phase II.
  13. Attempt to determine, in general terms, what costs the wireless carriers, 9-1-1 service providers, and PSAP CPE supplier intend to bill to the PSAP authority, if any.

Ask specific questions about circuit costs, database interface costs, and engineering fees. Details should be obtained in private meetings.

14. Note: In 1999, the FCC removed the requirement that a cost recovery mechanism (for the wireless carrier's costs) be in place for Phase I implementation to begin. Your state, however, may already have established a mechanism for carrier cost recovery. [Michigan has a CMRS cost recovery system.] The FCC rule does not preempt any state or local mechanisms
15. Provide a mechanism for your wireless providers to interface with your 9-1-1 service provider, so that each understands the other's role. They will need to communicate regarding the ordering of trunks (from the MSC to the selective router) and database access, among other things. Your goal is to help establish this working relationship and make sure it continues until implementation is complete. Do not allow them to stop talking to each other or to start talking to each other only through you. Be vigilant and stay involved, but don't do their job for them.
16. Do not assume that the carrier representatives understand how wireless 9-1-1 works or how it relates to your current 9-1-1 system. Some will and some will not.
17. Identify the primary contact for your system or PSAP, so that everyone knows who to keep in the loop.
18. Identify the 24x7 contact number of each carrier, specifically for use during out-of-hours emergency situations.
19. Develop a test plan that describes, in detail, all the aspects of the testing phase. Ask each carrier to submit a test plan. You have the option of letting each use their own plan, or developing a master test plan from those you receive. Do not let any carrier connect without providing a test plan.
20. Arrange for individual meetings to discuss anticipated workload, cell routing, subscriber base in your coverage area, and any other proprietary issues.
21. Discuss any applicable state or local legislation or regulations. Keep in mind that 9-1-1 service providers, specifically the LECs, are regulated at the state and federal levels, but wireless carriers are only regulated at the federal level.
22. Set time lines to move forward if you feel comfortable with the information you have received. If you need to obtain more information before a final decision is made, make that known.
23. Once this meeting has ended and a decision has been made, you will need to stay active with all the parties involved as you proceed through the implementation process. Each company will probably assign a Project Manager to coordinate their internal activities, but you will be (or provide) the overall Project Management.

#### **STEP 5 Identify Cell Coverage – Treatment of Proprietary Information**

- The wireless carriers can provide you with RF coverage maps for all the cells in your service area. This usually requires execution of a non-disclosure agreement or other proprietary information release form. This is a fairly standard procedure for the provision of RF coverage maps, and will typically require the assistance of legal counsel.
- From these maps, you will be able to associate individual cells and sectors with individual PSAPs. The goal is to identify the cells/sectors in each PSAP's service area, in order to establish call routing assignments. Wireless calls may not necessarily route to the same PSAP as wireline calls from the same area. The 9-1-1 authority may choose to route all wireless calls to a single PSAP or subset of PSAPs.
- Cells along the border should be reviewed to determine if the majority of the serving area of one or more sectors is in the jurisdiction of a neighboring agency. This will determine routing for those sectors to your system versus someone else's.

- This review should be done during face-to-face meetings and you should consider having representatives from the PSAPs/systems immediately surrounding yours present. This will assist in determining which PSAP will accept calls from cell sites along the borders and eliminate any contention down the road.
- Keep in mind that you will have to perform this step with each carrier individually. They will share their RF coverage information with the PSAP authority on a one-to-one basis, but will absolutely not share it with their competitors in the room. If your area is served by two 800 MHz cellular carriers, three 1.9 GHz PCS carriers, and an ESMR carrier, plan on having six separate meetings.
- 9-1-1 systems are very often deployed on a county or state level. Wireless telecommunication systems are deployed according to FCC-franchised trading areas, which may cover an entire state or parts of several states. To get optimum cooperation and results from the carriers, try to address Wireless 9-1-1 at the scale of the trading area or as close to it as possible. This may require a cooperative effort among several PSAP authorities.

#### **STEP 6 Implementation**

- Develop an implementation plan based on the output from the planning meeting. 9-1-1 service providers and some wireless carriers often provide project management assistance.
  - a. Issue Purchase Orders and/or Letters of Intent, as appropriate. You will need to issue some type of written order to each wireless carrier, your 9-1-1 service provider, your CPE provider, and any other vendors involved in the project.
    - Even if no money will change hands, a written document is required to constitute an official order for service. The six-month implementation clock starts only after a valid order has been received.
  - b. Hold regularly scheduled project meetings. Have each player provide a status report. Proprietary details should be discussed privately. Track the progress of each player. Try to identify potential problems sooner rather than later.
  - c. Try to hold to a firm but flexible schedule. Deadlines will be missed, but should be immediately rescheduled. Activities for which there is no target date may never be completed.
  - d. Stagger the cutover schedule. Don't attempt to activate Phase I service from six carriers on the same day. Spread them out, especially the first two or three. You may want to schedule one carrier on Monday and another on Wednesday of the first week. If all goes well, you can accelerate the schedule for the remaining carriers. If you have problems, you will have time to address them before the next carrier compounds the problem.
    - Do not schedule cutovers on Friday or the day before a holiday. You want the carriers and your 9-1-1 service provider to be fully staffed the first 2-3 days of operation.
  - e. Post-implementation items:
    - Determine method of obtaining new cell information from the carriers.
    - Determine method of notification for new carriers entering your serving area.

- Track call volumes to determine ongoing trunking requirements.
- Obtain usage data from carriers for MSC-to-9-1-1 tandem trunks.
- Obtain usage data from 9-1-1 service provider from tandem-to-PSAP trunks.
- Establish trouble reporting procedures and expectations.
- Establish notification procedures for major outages.