



The Florida Senate

Interim Project Report 98-12

October 1998

Committee on Community Affairs

Senator John McKay, Chairman

REVIEW OF THE FCC'S REQUIRED IMPROVEMENTS TO THE 911 EMERGENCY TELEPHONE SYSTEM

SUMMARY

Recent rulings by the Federal Communication Commission may require counties and wireless phone companies to make policy changes and resulting upgrades in technology to accommodate telephone calls made to 911 from wireless telephones. Current revenues for financing 911 services are insufficient to fund the implementation of these new requirements.

We recommend that the committee support the Florida Wireless Emergency Communications Act as proposed by the wireless industry and county governments.

BACKGROUND

The Florida Emergency Telephone Act, pursuant to s. 365.171, F.S., establishes and implements a statewide emergency telephone number system, administered through the counties, to provide citizens with rapid direct access to public safety agencies by dialing the telephone number "911." Use of this system reduces the response time to situations requiring law enforcement, fire, medical, rescue and other emergency services.

Most counties have implemented "Enhanced" 911 systems (E911), which provides dispatchers with automatic "callback" number and location identification services for wireline phone calls. However, many rural counties have not implemented E911 because they lack the resources to purchase and operate such systems.

While basic 911 services are available for wireless communications, E911 services are unavailable for wireless systems -- the technology to send and receive the information has not been implemented or has not been developed.

County 911 systems are funded by a monthly fee of up to 50 cents per subscriber on local wireline exchanges. Most counties also use general revenue to subsidize 911 system operating and capital costs. In some cases, State General Revenue has been allocated to select under-funded rural 911 systems. The statutes do not authorize the imposition of the fee upon wireless communications subscribers.

The use of wireless communication significantly impacts 911 services. Industry and local government sources estimate that:

- At least 25% of 911 calls are made from wireless telephones;
- 911 dispatchers across the nation are getting about 50,000 911 calls every day from among 42 million wireless customers;
- County 911 officials note that wireless calls can take 2.5 times longer to process than E911 calls; and
- The Cellular Telecommunications Industry Association (CITA) reports that 67% of wireless subscribers report safety reasons as a primary reason for buying cellular service.

The use of wireless communication services is growing:

- Industry sources estimate that in 1998 there are approximately 3 million subscribers in Florida, with 30,000 new wireless subscribers added nationwide every day;
- A recent survey found that 16% of responding cellular customers are currently using their wireless phones as a replacement for a land line or instead of a second telephone line.
- The Department of Management Services (DMS) report estimates that by 2004, more than 50% of all telephone numbers will likely be assigned to wireless telephones.

DMS officials with oversight responsibilities for the 911 system are concerned that the relative decline in wirelines will result in less 911 surcharge revenues, thus jeopardizing the financing of an expanding system.

This projected financial strain is exacerbated by new Federal Communications Commission (FCC) requirements to provide E911 services to wireless communications subscribers. In developing these new requirements, the FCC reasoned that the increase in use of wireless communications and the public's safety expectations compel the FCC to impose this mandate on wireless providers and 911 Public Service Answering Points (PSAPs).

Memorandum Opinion and Order FCC 97-402

In June 1996, the Federal Communications Commission (FCC) adopted a rule requiring wireless carriers - which includes cellular, broadband Personal Communications Service (PCS), and similar Special Mobile Radios (SMRs) - to implement 911 and Enhanced 911 (E911) services. In December 1997, the FCC amended the rule, which specifies the following:

- ❑ By October 1, 1997, wireless carriers must process and transmit to an appropriate PSAP all 911 calls from wireless handsets, without regard to validation procedures and regardless of code identification.
- ❑ By October 1, 1997, carriers must also be capable of transmitting 911 calls made by persons with disabilities, *e.g.*, through use of text telephone equipment (TT), or telecommunications devices for the deaf (TDD). However, the FCC temporarily suspended enforcement of the requirement until October 1, 1998, for digital systems, subject to a notification requirement.
- ❑ **Phase I:** By October 1, 1997, carriers must have initiated actions necessary to relay a caller's Automatic Number Identification (ANI) and the location of the cell site receiving a 911 call. These capabilities are designed to allow the PSAP to call back the phone placing the 911 call if disconnected, and help identify the approximate location of the caller.
- ❑ **Phase II:** By October 1, 2002, carriers are required to have the capability to identify the latitude and longitude of the mobile units making

911 calls within a radius of no more than 125 meters, using Root Mean Square calculations (which roughly equate to success rates of approximately 67 percent).

- ❑ Phase I and II upgrades are required only if the carrier receives a request for such services from a PSAP capable of receiving and using the service, and only if a **cost recovery mechanism** relating to the provision of such services is in place.
- ❑ Wireless providers have six months after the request from the PSAP to implement requested changes.

The Status of Phase I and II Technology

Industry and County 911 Coordinators report that the technology to implement Phase I of the FCC's requirement is generally available. According to a recent survey of county 911 coordinators, twelve counties have installed Phase I equipment and are ready to receive ANI and cell tower identification information from wireless providers. Twenty-three other counties have at least 1 PSAP Phase I ready.

As for Phase II, new technologies are being developed and field-tested at this time:

- ❑ The wireless industry is conducting field-tests of "time difference of arrival" technology, which measures the time for the cellular signal to be received at multiple cell towers, thereby estimating the relative distance and direction of the signal from each tower.
- ❑ In Denver, Colorado 911 providers are testing Global Positioning Satellite (GPS) technology in cell phones. It is reported that a computer chip enabling this technology can be installed for \$5 - \$8 per phone.
- ❑ Celltrax Inc. of Melbourne, Florida is piloting a "time difference of arrival" project which operates independently from the wireless providers. This technology would allow a single state-wide E911 Phase II service through a single contractor, thereby standardizing the transmission of information to PSAPs and simplifying the coordination of service. The field test results are scheduled to be available in 1999.

It is reported that California, Texas, New Jersey, Oregon, and Vermont are currently pursuing "single contractor" Phase II solutions.

Estimating Implementation and Operating Costs

Both the wireless industry and local PSAPs will incur implementation costs for Phase I and II. The FCC estimates a nation-wide cost of \$5 - 10 billion nationwide. Individual costs for wireless providers or PSAPs may differ significantly. Statewide costs projections are difficult to obtain for a number of reasons:

- The wireless industry and PSAPs use a variety of different systems;
- Some PSAPs will have higher upgrading costs because they must address the "Y2K" problem or must expand to 10+ digit dialing; these upgrades are necessary to accommodate the FCC requirements;
- Service delivery standards have not been developed; and
- New technologies for Phase II are being developed and field-tested at this time.

Costs to Counties

To implement Phase I, each PSAP will need 10 digit dialing capacity, a dedicated trunk for wireless 911 calls, and upgraded call handling equipment. To implement Phase II, each PSAP will need an integrated geographic mapping system and related equipment to receive location information. Some counties have already purchased and implemented Phase I technologies. All PSAPs will incur the operating and maintenance costs of these technologies.

We surveyed the 67 County 911 Coordinators to identify the present funding status and projected costs to implement Phase I and II of the FCCs requirements. Fifty-one counties responded to the survey, for a seventy-six percent response rate. According to our survey:

- 23 counties have at least 1 PSAP that is now Phase I capable;
- all PSAPs in Collier, Duval, Lake, Orange, and Osceola counties have implemented Phase I technology, spending an estimated \$1.5 million;
- 28 counties representing 61% of the state population project it will cost \$ 11.2 million to obtain the technology necessary to implement Phase I, and \$ 2.8 million annually to operate these systems.

Reliable estimates of the cost to implement Phase II are unavailable.

Current Status of 911 Funding

Our survey also asked County 911 Coordinators to provide present budget information pertaining to their 911 systems. The survey reveals that:

- Many expenses for the county 911 systems may not be included in the county's 911 budget (such as call-takers salaries and benefits, and facilities expenses);
- Many counties have recently invested significant capital to upgrade their 911 systems with Phase I technology;
- 39 of the 51 responding counties levy the maximum 911 fee currently authorized by s. 365.171, F.S.;
- It appears that most of the 51 responding counties subsidized 911 operating and budgets in FY 1998/99;
- Less populated counties have higher per capita operating costs than the other counties.

Costs to the Wireless Industry

911 calls from cellular phones can be transmitted to the PSAPs in one of two ways: by the wireless provider or by an entity contracted to forward all 911 calls from selected towers in the state.

Cost estimates for the first option are incomplete. AT&T Wireless estimates it will cost their companies 25 cents per month per customer to implement and operate Phase I systems. Industry sources report that a wireless provider in Colorado provides these services for an estimated 18.5 cents per month per customer. As for Phase II, one county reports that their local wireless provider estimates that it will cost \$50,000 per cell tower face for location technologies.

Cost estimates for transmission of all 911 calls by a single contractor across the state are unavailable.

Fees Imposed by Other States

Table 1 lists wireless 911 fees imposed or pending by other states:

TABLE 1

STATE	Current Fee	Year Enacted	Fee In Pending Bill
Alabama	\$ 0.70	1998	\$ -----
Alaska	-----	-----	0.50
Arizona	0.20 + State \$	1997	-----
Arkansas	0.50	1997	-----
California	up to 2.00	1992	-----
Colorado	0.70	1997	-----
Connecticut	0.50	1995	-----
Delaware	-----	-----	-----
Florida	-----	-----	-----
Georgia	1.00/1.50	1998	-----
Hawaii	-----	-----	-----
Idaho	-----	1998	1.00
Illinois	-----	-----	0.95
Indiana	0.65	1998	-----
Iowa	0.50	1998	-----
Kansas	-----	1998	0.50
Kentucky	0.70	1998	-----
Louisiana	1.00	1998	-----
Maine	0.32 + State \$	1997	-----
Maryland	0.50	---	-----
Massachusetts	-----	-----	-----
Michigan	-----	-----	0.65
Minnesota	0.30 + State \$	1997	-----
Mississippi	1.00	1998	-----
Missouri	-----	-----	0.50
Montana	0.25 + State \$	1997	-----
Nebraska	-----	-----	-----
Nevada	-----	-----	-----
New Hampshire	0.42	1997	-----
New Jersey	-----	-----	-----
New Mexico	-----	-----	-----
New York	0.70	---	-----
North Carolina	----	-----	0.80
North Dakota	----	-----	-----
Ohio	----	-----	0.65
Oklahoma	0.50	1998	-----
Oregon	0.75	1997	-----
Pennsylvania	-----	-----	-----
Rhode Island	0.47	1997	-----
South Carolina	0.58	1998	-----
South Dakota	(Study Comm.)	1998	-----
Tennessee	Up To 2.00	1998	-----
Texas	0.50	1997	-----
Utah	0.53	1998	-----
Vermont	State \$?	-----
Virginia	0.75	1998	-----
Washington	(Study Comm.)	1998	-----
West Virginia	0.75	1998	-----
Wisconsin	Up to 1.00, in litigation	-----	-----
Wyoming	-----	-----	-----
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States with fee: 28

Source: xypoint Inc. & BMI, Inc., 7/20/98

METHODOLOGY

In preparing this report, staff reviewed the following federal documents:

- 47 C.F.R.§20.18, the Federal Rule stipulating the required wireless service upgrades;
- Memorandum Opinion and Order FCC 97-402, 12/1/97; and
- FCC Docket No. 94-102, 6/96;

Staff discussed this issue with representatives from the wireless industry, state officials with oversight responsibilities for the 911 system, County 911 Coordinators, and staff of the Florida Association of Counties.

Staff surveyed all County 911 Coordinators to identify the present status and future needs of the county 911 systems in relation to the FCC's required upgrades to handle emergency calls from wireless communications systems.

Staff reviewed a number of support documents published by the following organizations: the National Emergency Numbers Association; Association of Public Safety Communications Officials (APCO); XYPOINT Corporation; Cellular Telecommunications Industry Association (CITA); and the Wireless Data Forum.

Staff also conducted three public hearings to obtain input from affected parties. These hearings were held in Jacksonville (9/08), Orlando (9/09) and Pompano Beach (9/10). As expected, county and industry representatives supported the legislation proposed last session. While few members of the general public attended, there was very vocal support for the concepts proposed in the legislation.

FINDINGS

- The increase in wireless communication is significantly impacting 911 services;
- Currently, wireline calls in many rural counties and wireless calls throughout the state do not have access to E911 services, which allows for automatic number and location identification services;
- Recent rulings by the FCC may require 911 service providers and wireless communication companies to make policy changes and resulting

technology upgrades to provide E911 services for all wireless phone calls made to 911 systems;

- ❑ There are potentially significant capital and operating costs to implement the FCC’s requirements;
- ❑ Current revenues for financing 911 services are inadequate to fund the implementation of these new requirements;
- ❑ The wireless industry, representatives for the county 911 coordinators and county commissions, and state officials with oversight responsibilities for 911 systems have agreed upon a statutory solution; and
- ❑ 28 other states have imposed a “911 fee” on wireless subscribers to fund the FCC required upgrades.

Proposed 1998 & 1999 Legislation

The wireless industry, representatives for the county 911 coordinators and county commissions, and DMS officials have agreed upon a statutory solution to the FCC requirements. They propose creating the Florida Wireless Emergency Communications Act, which:

- ❑ Establishes a 50 cent monthly fee on each wireless service subscriber in this state; fee proceeds will be used to fund the capital and operating costs incurred by wireless providers and county 911 systems in developing and maintaining an E911 system;
- ❑ Requires the DMS to oversee the administration of the fee;
- ❑ Creates the Florida Wireless 911 Advisory Board to assist DMS in administering the fee and oversee the proposed Wireless Emergency Telephone System Trust Fund; and
- ❑ Requires the board to submit a report to the Governor and Legislature that outlines trust fund expenditures and recommends, if necessary, adjustments to the levy or distribution of the fee;

The group also proposes a bill to create a public records exemption for proprietary information

submitted to the commission by wireless communications providers.

Wireless providers would be allowed to retain an administrative fee of 1% of the fees they collect, with the remaining collections distributed by the board as follows:

- ❑ 44% to counties, distributed monthly;
- ❑ 54% to wireless providers, as reimbursement for actual costs incurred to provide 911 or E911 service, upon approval of the Advisory Board; and
- ❑ 2% to rural counties for facilities and service enhancements.

Fee Projections

If the Legislature approved a \$0.50 per customer, per month fee, and the proposed fee distribution formula, it is estimated the following revenues would be generated:

TABLE 2

Fiscal YEAR	Est. # of Subscribers	Industry Portion	Counties Portion	Small Counties	Total Revenue
1999	5.1 m	\$ 16.4 m	\$ 13.3 m	\$ 0.6 m	\$ 30.6 m
2000	6.0 m	19.2 m	15.7 m	0.7 m	36.0 m
2001	6.9 m	22.1 m	18.0 m	0.8 m	41.4 m
2002	7.9 m	25.3 m	20.6 m	0.9 m	46.9 m
2003	8.8 m	27.7 m	22.6 m	1.0 m	51.3 m

Source: CTIA

RECOMMENDATIONS

We recommend that the committee support the Florida Wireless Emergency Communications Act as proposed by the wireless industry and county governments.

COMMITTEE(S) INVOLVED IN REPORT *(Contact first committee for more information.)*

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MEMBER OVERSIGHT

Senators Dyer and Meadows