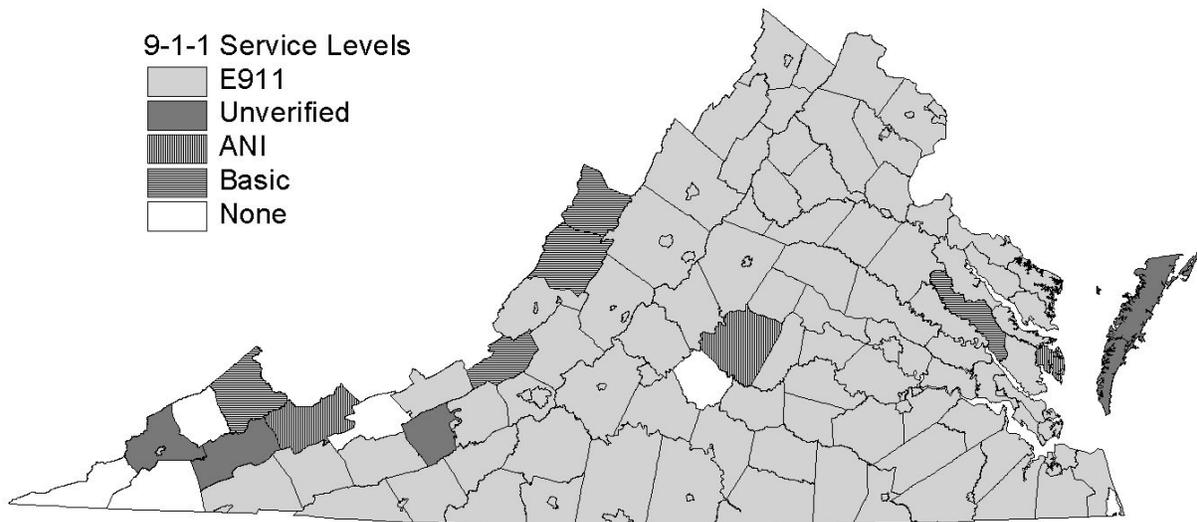




Wireless E-911 Services Board FY2003 (Draft) Annual Report



Prepared by the
Virginia Information Technologies Agency
Division of Public Safety Communications
July 2003



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Executive Summary

During FY2003, the Wireless E-911 Services Board (the Board) transitioned from monthly meetings to an every other month schedule, as allowed by the *Code of Virginia*. During that time, the Board has:

- ◆ provided \$9.8 million for the Virginia Base Mapping Initiative;
- ◆ conducted the audit of FY2002 funding provided as required by *Code* (81 localities, 10 wireless service providers);
- ◆ approved 121 public safety answering points (PSAPs) for FY2004 funding (approximately \$16 million);
- ◆ approved ten wireless service providers for FY2004 Phase I funding including Phase II costs;
- ◆ developed a strategic plan that will guide the Board's activities into the future; and
- ◆ conducted deployment status reviews with each major wireless service provider in the Commonwealth.

In addition, the Board is currently processing the audit of FY2003 funding received by the localities and wireless service providers

Section 56-484.14 of the *Code of Virginia* requires the Board to:

7. Report annually to the Governor, the Senate Committee on Finance and the House Committee on Appropriations, and the Virginia State Crime Commission on (i) the state of enhanced wireless emergency telecommunications services in the Commonwealth, (ii) the impact of, or need for, legislation affecting enhanced wireless emergency telecommunications services in the Commonwealth, (iii) the need for changes in the Wireless E-911 funding mechanism as appropriate, and (iv) the sufficiency of other moneys appropriated for the provision of enhanced wireline emergency telecommunications services only in those local jurisdictions not wireline capable as of July 1, 2000.

This report is to satisfy this requirement.

The state of enhanced wireless emergency telecommunications services in the Commonwealth

The implementation of wireless enhanced 9-1-1 (E-911) Phase I, the caller telephone number and the address of the cell site, has progressed well with 374 deployments. Nearly all of the technical problems as well as corporate issues that had slowed implementations are now resolved. Every PSAP in the Commonwealth has committed to the full deployment of wireless E-911 and is aggressively pursuing deployment. All providers are providing the Board with a monthly report indicating progress and any issues delaying implementation. These reports are public and are posted on the Board's website (www.va911.org) to allow public review.

One of the most fulfilling accomplishments during FY2003 was the continued success with the deployment of Phase II service, the caller's actual location by longitude and latitude. Every major wireless carrier has started its deployment. While not 100% accurate, the locations provided are within 50 to 300 meters with some calls actually showing the caller's location within a matter of a few feet. The wireless service providers and all of the localities involved should be commended for their efforts. They are truly on the leading edge of technology with these deployments. Their

commitment to public safety reaffirms Virginia's place as a national leader in the delivery of 9-1-1 services.

The impact of, or need for, legislation affecting enhanced wireless emergency telecommunications services in the Commonwealth

While the current sections of the *Code of Virginia* that address wireless E-911 are generally sound, the Board is not proposing any changes for the 2004 General Assembly Session.

The need for changes in the Wireless E-911 funding mechanism as appropriate

The Wireless E-911 Fund is fiscally sound. It had a fund balance of just over \$45 million at the end of FY2002. Due to several special projects and budget reductions, the fund balance was reduced to \$26 million by the end of FY2003 and most of this funding is required for the FY2004 appropriation and existing budget reductions. Projections indicate that the \$0.75 surcharge is appropriate to fund statewide deployment of wireless E-911, if the \$3.7 million annual funding of the State Police is continued. It should be noted that by the end of FY2004, all local PSAPs should be taking the wireless E-911 calls directly thus removing the original justification for providing the funding to the State Police. If this expense to the fund is eliminated, the surcharge could be reduced to \$0.65 for FY2005.

The sufficiency of other moneys appropriated for the provision of enhanced wireline emergency telecommunications services

The current biennial budget includes a \$9.8 million appropriation from the Wireless E-911 Fund to assist localities with the deployment of wireline E-911. To ensure that localities could receive the funding as quickly as possible, the Board adopted funding guidelines in March 2002 and began receiving funding requests in May. The Board has grant requests for the entire \$9.8 million to all 37 localities eligible for the funding (those that did not have E-911 by July 1, 2000). As of the end of FY2003, a total of \$4.4 million has been distributed. The Board is distributing the funding to each locality, as they need it rather than providing it based on vague estimates. As contracts are negotiated or firm pricing is received the amounts are forwarded to the Board for consideration. The localities still receive the funding before contracts are signed and purchase orders are issued, but only after a definitive cost is determined. This prevents the locality from receiving either too much or too little funding, which would need to be resolved at the end of the project.

The following sections of the report provide a more detailed analysis of the current state of E-911 in the Commonwealth exploring both wireless and wireline implementations.

Legislative History

In 1998, the General Assembly passed legislation that established a \$0.75 surcharge on wireless telephone service and created the Board to administer the funds. The original Board consisted of seven members, three from local government, three from the telecommunications industry and the Comptroller of Virginia, who chaired the Board. The Board was a separate political subdivision and did not have any staff support within the state government. In spite of this, the Board began distributing funding to localities and wireless service providers in FY2000, providing over \$4 million for the provision of wireless E-911.

During the 2000 Session, the General Assembly enacted omnibus legislation (Senate Bill 148) to enhance the delivery of public safety services to citizens of the Commonwealth through improvements to emergency telecommunications systems. First, the legislation established 9-1-1 as the only emergency number for use in the Commonwealth and dates by which localities must implement wireline E-911 and wireless 9-1-1. It also expanded the Wireless E-911 Services Board both in size and in scope. The Board increased to fourteen members adding representatives for the police chiefs, fire chiefs, EMS chiefs, sheriffs, State Police, and emergency management. The scope of the Board was expanded to include the disbursement of funding for the implementation of wireline enhanced 9-1-1 and policy-making authority for issues relating to wireless 9-1-1. To provide staff support the Division of Public Safety Communications (DPSC) was created within the Department of Technology Planning.

In 2001, two pieces of legislation passed impacting 9-1-1. The first revised several definitions in the legislation including one change to specifically include resellers of wireless service in the requirement for surcharge collection. The other bill (HB1611) excluded localities with no local wireline E-911 surcharge and less than 50% wireless telephone service coverage from having to implement wireline and wireless E-911. While this bill originally was intended to exempt Bath, Highland and Craig Counties, Lee County believes they qualify for the exemption and thus need not implement E-911. This is significant since Lee is the only one of the four localities that does not even have Basic 9-1-1.

During the 2002 General Assembly session, only one legislative change that impacted E-911 was enacted. The change, which modified several definitions relating to the wireless surcharge, was necessary to keep the wireless E-911 legislation (and other legislation with mobile telecommunications taxation) in compliance with the federal Mobile Telecommunications Sourcing Act of 2000.

The 2003 General Assembly brought only one legislative change. The surcharge was redefined to explicitly include prepaid wireless service in the collection of the surcharge. Previously, only seven out of ten major wireless service providers offering prepaid service collected the surcharge. The other three major providers and a number of other small resellers were not collecting the surcharge believing that the legislation was ambiguous. The change requires all wireless service providers and resellers to collect the surcharge. The change should result in increased revenue in the amount of \$1.1 million per year.

Need for Legislative Change

One issue that the Board is directed to address in this report is the need for legislative changes. In last year's annual report, there were two issues that required legislative changes, explicitly applying the surcharge to prepaid wireless and allowing Board members to send alternate voting members. The prepaid issue was resolved during the 2003 session. Since the Board has not experienced any significant problems assembling a quorum during the past year, they have decided not to request a legislative change this year. As a result, the Board is not proposing any legislative changes for the 2004 General Assembly session.

Telecommunications Industry Trends

The use of mobile telecommunications continues to grow across the country. Wireless providers are continuing to expand a competitive communications marketplace as they introduce improved wireless technology. New services such as the wireless Internet, short messaging services (SMS) and nationwide walkie-talkie access are increasingly available throughout the country. Nearly 95% of all Americans can choose from 3 or more wireless providers. In the FY2002 annual report, it was noted that there were estimated to be over 135 million wireless telephones in the United States. By the end of FY2003, that number had risen to 146 million¹. That represents an increase of 11 million new wireless phones during FY2003, or said differently, over 30,000 new wireless customers every 24 hours. This trend coupled with the increased usage by most every wireless customer, increases the urgency of implementing wireless enhanced 9-1-1 services.

Since 1985 (Figure 1 & 2), the average annual growth rate of wireless services had been 44.3% while wireline growth has only averaged 2.7%. However, the growth rate has been steadily declining in recent years with wireless experiencing only a 9.65% growth last year (down from a 14.7% growth in FY2002) and wireline actually having a reduction in access lines. As a result, wireless subscribers are projected to surpass wireline access lines during 2006. The declining growth is likely attributable to the penetration of wireless service with nearly 70% of Americans between the ages of 12 and 65

Calendar Year	Wireline Access Lines	Wireless Subscribers
1985	117,434,802	340,213
1986	120,781,565	681,825
1987	124,678,710	1,230,855
1988	126,953,616	2,069,441
1989	130,915,695	3,508,944
1990	134,743,029	5,283,055
1991	139,672,703	7,557,148
1992	142,428,028	11,032,753
1993	147,095,681	16,009,461
1994	151,607,529	24,134,421
1995	158,219,924	33,785,661
1996	165,420,650	44,042,992
1997	173,890,908	55,312,293
1998	180,471,261	69,209,321
1999	186,658,645	86,047,003
2000	188,626,589	109,478,031
2001	179,746,541	128,374,512
2002	184,216,497	140,766,842
Projections		
2003	187,349,138.17	153,740,250.90
2004	189,592,176.53	167,513,329.89
2005	191,112,329.12	181,851,220.78
2006	191,854,609.80	196,657,776.76

Source: Wireline: FCC, Wireless: CTIA, Projections are based on a 15-year trend analysis.

Figure 1 - Subscriber Counts - 1985-2002

¹ Cellular Telecommunications and Internet Association (CTIA)

having wireless telephones².

Virginia subscriber data can be calculated since July 1998 using the Wireless E-911 Surcharge revenue data. Comparing the Virginia data to the national data (Figure 3) indicates that Virginia has consistently represented 2.0% to 2.3% of the national subscriber based. Assuming this trend will continue and based on the national trends in wireless, Virginia will continue to see growth in wireless subscribers. Since the FCC reports that in 2002 Virginia had just over 4.9 million wireline access lines and some growth is likely, wireless will not surpass wireline in Virginia until after 2006.

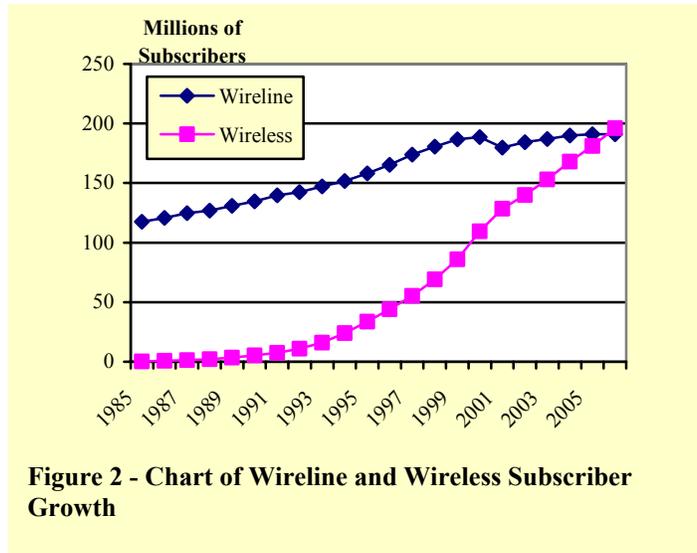


Figure 2 - Chart of Wireline and Wireless Subscriber Growth

Even though commercially produced projections mirror those created for this report, the wireless industry continues to be volatile. Several studies noted that there was a considerable surge in the sale of wireless telephones in the weeks following September 11 that likely contributed to the strong finish for the year. Without this late surge, last year’s wireless growth would have been less. This volatility makes projections of subscribers for even the coming year extremely difficult. A January 2002 study³, which compared 2001 projections made in 2000 by seven of the major research firms with the actual results, showed that the projections were off by as much as 22 million subscribers with an average error of about 8 million subscribers.

Another trend contributing to this volatility is the mergers and acquisitions of telecommunications companies. Several sources report that several major wireless providers are in merger discussions. The reason for the discussions is that the wireless market may not be growing fast enough to support six big carriers. Phillip Redman of Gartner, a major research firm, said, “It’s the law of the big three. You see it in the auto industry. You see it in long distance. And you are going to see it in wireless.”

These trends are important to the delivery of E-911 in Virginia for the following reasons:

Calendar Year	Virginia Subscribers	Wireless Subscribers
1998	1,394,561	69,209,321
1999	1,878,083	86,047,003
2000	2,236,212	109,478,031
2001	3,005,361	128,374,512
2002	3,305,629	140,766,842
Projections		
2003	3,610,284	153,740,250.90
2004	3,933,717	167,513,329.89
2005	4,270,414	181,851,220.78
2006	4,618,116	196,657,776.76

Virginia projections are based on applying the national trends to Virginia subscriber counts calculated from revenue data. Does not include federal government subscribers.

Figure 3 - Virginia Wireless Subscriber Count

² Joelle Tessler, The Mercury News, August 4, 2002

³ eMarketers, Projection versus Reality, A Review of 2001 E-Business Numbers as Predicted by Leading Researchers, January 2002

1. The difficulty in making subscriber projections makes revenue projections equally difficult. Major research firms missed the correct subscriber predictions by an average of 6.2% with one off by 17.1%. Applying this to Virginia's revenue means projections could deviate from the actual by \$1.7 million to \$4.7 million per year.
2. Local revenue from the E-911 surcharge imposed on wireline telephone service is declining or is at least not increase as quickly. While funding is provided by the Board for direct costs incurred with the implementation of wireless E-911, the wireline legislation (§58.1-3813.1) is more broad allowing localities to fund more of the general operating costs of running the 9-1-1 center. A reduction in growth of this surcharge or an outright reduction of the revenue from the local surcharge may limit a locality's ability to respond to increasing demand. As subscribers shift from wireline to wireless service, a shift may also be necessary in the way E-911 is funded.
3. While mergers and acquisitions would not likely have an impact on revenue, it could dramatically impact the cost to implement enhanced 9-1-1 services on the providers' networks. Each provider is currently building and will be maintaining an independent E-911 network. The consolidation of wireless networks will result in cost savings to the Commonwealth. The big question is if and when these consolidations will take place.

Wireless Enhanced 9-1-1

Introduction

Public safety answering points (PSAP) around the nation have reported that the percentage of calls coming from wireless telephones is increasing (Figure 4), though, like the number of wireless subscribers, it is not increasing as fast as it did in the early 1990's. However, even with a reduction in the growth, the number of wireless 9-1-1 calls has already reached or surpassed the number of wireline E-911 calls in many of the more populous Virginia localities. Of concern to the PSAPs in these localities is that wireless calls to 9-1-1 do not provide the location of the caller the way wireline enhanced 9-1-1 does. This lack of an automatic location results in more time for the call taker to process the call or an inability to locate the caller at all. Several recent incidents have occurred around the country that demonstrate the problems PSAPs can have locating a wireless 9-1-1 caller.

To respond to this issue, in 1996, the FCC released an order requiring wireless service providers to implement enhanced features and location technology. The implementation was to occur in two phases. Phase I provides the PSAP with the caller's telephone number and the address of the cell site receiving the call along with the orientation of the antenna, if the antenna is directional. Phase II provides the PSAP with the actual location of the caller within a defined margin of error depending on the location technology used by the provider (Figure 5). According to the order, the wireless service provider must implement Phase I within six months of a request from the PSAP. The timeline for

Year	Wireless 911 calls
1985	193,333
1986	649,659
1987	1,202,336
1988	2,382,855
1989	4,311,497
1990	5,914,653
1991	8,007,586
1992	12,641,470
1993	15,491,344
1994	17,910,620
1995	20,059,894
1996	21,659,967
1997	30,517,327
1998	35,805,405
1999	43,298,856
2000	51,104,214
2001	56,879,775

Source: CTIA

Figure 4 - Wireless 9-1-1 Calls

Phase II is contingent on the location technology selected by the wireless service provider, network-based (triangulation) or handset-based (global positioning system – GPS).

The Wireless E-911 Fund

The Wireless E-911 Fund is generated by a \$0.75 surcharge placed on every wireless telephone billed by a wireless service provider in Virginia. The fund currently generates approximately \$2.5 million each month. The Fund had a balance of approximately \$45 million at the end of FY2002, which is \$8 million greater than the FY2001 ending balance. However, during FY2003, special projects and budget cuts reduced the fund balance to \$26 million by the end of FY2003. Almost the entire balance of the fund is earmarked to cover the current FY2004 appropriation and budget reductions.

One annual question the Board must answer is whether the surcharge rate should be adjusted. Since almost all localities are now seeking wireless funding, accurate projections can be made. However, the wireless service providers costs are still difficult to project. In the past three years, wireless service providers have estimated their costs an average of 4 times higher than they actually end up seeking in payment.

The estimated annual recurring PSAP cost provided by the Board is approximately \$14.6 million for statewide deployment. This is based on the total operating costs of over \$88.4 million reported to the Board in the FY2004 funding requests (Figure 6). Knowing that this cost covers 97.2% of Virginia’s population allows these costs to be extrapolated to produce a statewide estimate. The only operating costs that are 100% funded are the recurring trunking costs. All other operating costs including personnel costs are funded by the Board proportionally to the percentage of wireless 9-1-1 calls to total calls (9-1-1 and administrative) answered by the PSAP. In December of 2001, the Board established a minimum percentage for these costs of 10.42%, which is the statewide average percentage. Additionally, the Board established a minimum amount of net personnel funding, \$30,000, to allow every PSAP to hire at least one additional position to handle wireless 9-1-1. Personnel cost comprises the lion share of the recurring cost to the Board at approximately \$13.3 million. This amount can be expected to increase by about five percent per year as the wireless call load and the cost of salaries increase. Funding provided to the localities by the Compensation Board is

Phase II Error/Timing

Network based solution:

Accuracy

- 100 meters 67% of the time
- 300 meters 95% of the time

Timing

- Six months after request must implement 50% of network
- 100% of network within 18 months of request

Handset based solution:

Accuracy

- 50 meters 67% of the time
- 150 meters 95% of the time

Timing

- Must offer handsets with GPS capability by October 2001
- 25% of new handsets must be GPS capable by December 31, 2001
- 50% of new handsets must be GPS capable by June 30, 2002
- 100% of new handsets must be GPS capable by December 31, 2002
- 95% of all customers must be converted to GPS capable handsets by December 31, 2005

Figure 5 - FCC Phase II Requirements

comprises the lion share of the recurring cost to the Board at approximately \$13.3 million. This amount can be expected to increase by about five percent per year as the wireless call load and the cost of salaries increase. Funding provided to the localities by the Compensation Board is

Type of Funding	FY2004 Reported	Statewide Estimate	Board Funding
Personnel & Shared costs	\$87,808,181	\$90,337,635	\$13,349,775
Wireless Trunking	\$638,594	\$656,990	\$656,990
Equipment Replacement*	N/R	\$5,570,000	\$580,394
Total	\$88,446,775	\$96,564,625	\$14,587,159
* - Equipment costs are calculated based on an estimated 557 9-1-1 answering position replaced on a 5-year cycle at \$50,000 each.			

Figure 6 - PSAP Cost Estimates

not included in the overall costs considered by the Board since it is provided by another State agency. For FY2005, the Board has modified the PSAP personnel funding formula to eliminate the minimum percentage, but leaving the \$30,000 net minimum. This change was made to better align the personnel funding guidelines with the Board's funding philosophies. The change will reduce funding to the localities by approximately \$500,000.

FY	Requested	Received
2000	\$3.1 million	\$400,000
2001	\$4 million	\$1.9 million
2002	\$15 million	\$3.7 million
2003	\$12.3 million	\$5.3 million

Figure 7 – Wireless Provider Funding

Using the average cost per subscriber per month from the wireless service provider's submissions, the amount needed to fund the wireless service provider costs is approximately \$11.8 million. However, the wireless service providers are simply not seeking payments in these amounts. Though funding plans have been approved in excess of \$10 million each of the past two years (Figure 7), actual costs paid to providers has been less than one half of those estimates. The original reason given for the reduced cost is that deployment had been delayed, but deployments are now proceeding quite rapidly. Interestingly, though cost recovery is available, at least four major wireless service providers in Virginia (Nextel, Sprint, Triton-Suncom and T-Mobile) have announced that they will not be seeking cost recovery for the deployment Phase II service. As a result, the projections for wireless service provider costs have been reduced to \$8 million to reflect the historical payment to the providers rather than the estimates that have been included in their funding plans to the Board.

Combining the PSAP and provider recurring costs and adding the recurring cost of the Division of Public Safety Communications (DPSC) and Virginia Geographical Information Network (VGIN) Division results in a total of \$23.2 million of recurring statewide cost. As previously discussed, revenue is difficult to project accurately. Though the subscriber projections above would result in higher projections, a more conservative estimate of revenue is appropriate especially in light of the current economic forecasts and volatility in the telecommunications industry. The projected revenue for FY2004 and FY2005 is \$30.5 million for each year. Each penny of surcharge generates approximately \$396,000 of revenue annually. This means that a surcharge of only \$0.59 is necessary to fund the recurring cost of wireless E-911 throughout the Commonwealth.

With the recurring health of the fund addressed, non-recurring costs must also be addressed. Most of the large non-recurring cost, such as the base mapping initiative and wireline E-911 grant funding, were addressed in FY2003. By the end of FY2004, most of the non-recurring Phase II costs will also have been incurred. As a result, only an additional \$2 million is needed for non-recurring cost in FY2005. This means the total required surcharge for FY2005 is \$0.65.

The fund balance remaining at the end of FY2003, approximately \$26 million, has already been committed in the existing biennial budget and other Board programs (Figure 8). Funding provided to the State Police is listed as a non-recurring cost because the projected recurring revenue cannot support the additional cost at the \$0.65 rate. Additionally, wireless 9-1-1 calls are currently being transitioned from the State Police dispatch centers to the local PSAP. This process should be completed by the end

Description	FY2004
State Police Funding	\$3.7 million
VGIN Funding	\$125,000
Budget Reductions	\$9,843,098
Finalize Wireline Grants	\$5.12 million
Project Management	\$4.4 million
Total	\$23.2 million

Figure 8 - Non-recurring Funding

of FY2004 so funding wireless call taking in the State Police should no longer be necessary. If the \$3.7 million to the State Police is continued in FY2005, then the surcharge rate cannot be reduced and must continue at the current \$0.75.

There are also other related projects that will require funding that were not identified in the budget. During FY2002, the Board added project management assistance as an allowable expense under the wireless E-911 funding guidelines. This was done to address the lack of time and experience within the PSAPs to deploy wireless enhanced services. Since the assistance is only necessary during deployment, it is considered a non-recurring expense. While this aspect of funding is discussed in greater detail below, it is important to note that current estimates project the FY2004 cost of this initiative at \$4.4 million.

Wireless Funding

The Wireless E-911 Services Board began providing this funding to PSAPs and wireless service providers in the FY2000 budget year. The amount of funding has increased each year as more localities move to implement the service and more service gets implemented (Figure 9). In the first year, 23 PSAPs serving 28 localities received a total of \$4.3 million and twelve wireless service providers serving those localities received approximately \$400,000 to support the requests. The amount received by the providers was ten times less than was requested due to delays with the actual implementation of services.

FY	PSAPs	Localities Served	PSAP Funding	Wireless Provider Funding
2000	23	28	\$4,316,115	\$396,144
2001	40	51	\$7,047,639	\$1,862,736
2002	81	91	\$13,930,840	\$3,719,132
2003	125	133	\$18,861,283	\$5,288,230
2004	121	127	\$16,015,454	\$8,000,000

Figure 9 - Wireless E-911 Funding History

The Board approved 40 PSAP submissions in FY2001 totaling \$7 million. Many of the first time submissions included one-time purchases that will not be included in future submissions to the Board. After the initial installation, the subsequent submissions simply include equipment maintenance, trunking costs, and personnel costs. The wireless service providers submitted funding requests for FY2001 totaling \$4.4 million; however, only about \$1.9 million was justified during the audit. The majority of provider costs are generated by monthly recurring costs, such as trunking and third party provider costs. The monthly recurring costs do not start until service is implemented and since many installations continued to be delayed in FY2001, there were lower than expected costs. The figures provided for FY2000 and FY2001 are based on the actual cost incurred as documented in the yearly audit, which the *Code* requires⁴ to be conducted at the end of each fiscal year.

⁴ Section 56.484-17, *Code of Virginia*

For FY2002, the Board approved 83 PSAP funding submissions, which serve 92 or 69% of the localities in the Commonwealth, totaling over \$14.3 million. The Board is currently in the process of auditing FY2003 so this amount represents the funding the localities received, but may be adjusted after the audit is conducted. During this same period, the wireless providers received a total of approximately \$2.4 million, but this is also subject to the audit currently underway.

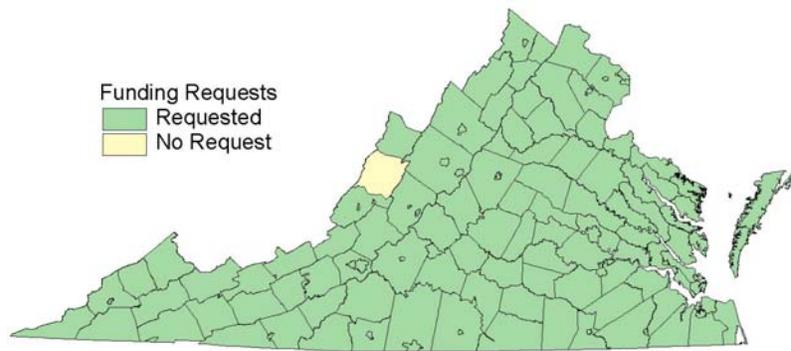


Figure 10 - Localities receiving funding from the Wireless E-911 Fund

During FY2003, the number of PSAPs requesting funding grew considerably to 125 submissions representing 133 localities. This represented an increase of more than 31% over FY2002 with additional 42 PSAPs participating in the wireless grant program (Figure 10). This dramatic increase in participation was due to a combination of three items; the success of those localities that began to participate in the wireless program in FY2001 and FY2002, the initiation of project management assistance (particularly at the regional level) and finally, the establishment of the minimum personnel funding (\$30,000). Due to an aggressive campaign by DPSC staff to inform the localities of these advantages, by the end of FY2003, only one locality, Bath County, had not requested funding for wireless E-911 service. They are, however, deploying wireline E-911 and are expected to submit a wireless request for FY2004.

Though the number of funding requests submitted appears to have dropped in FY2004, this is due to delayed requests rather than an actual reduction in the number of participants. Several PSAPs are waiting until they determine the actual FY2003 funding before they submit their FY2004 funding request. As required by *Code*, the Board will consider these requests as they are received.

Phase II Funding

In early FY2002, the Board approved Phase II funding guidelines for both PSAPs and wireless service providers. The primary difference between Phase I and Phase II in the PSAP is the addition of mapping. Each locality is provided funding to implement a mapping display system within their PSAP. This system is interfaced to the 9-1-1 system to allow the longitude and latitude of the caller to be automatically plotted when a wireless 9-1-1 call is received. No one mapping solution would be appropriate for all PSAPs in the Commonwealth so the PSAP manager is allowed select the system that best meets their needs and the Board provides funding for it.

In FY2002, the Board readdressed the issue of wireless provider funding for Phase II service. The original guidelines were broad allowing each provider to make a submission that would be evaluated on a case-by-case basis. After reviewing the first round of funding requests for FY2002 and FY2003, the CMRS Subcommittee identified an issue that required a change in the funding guidelines. The need for change was identified because of a wide disparity in the funding requests based on the type of location technology being proposed. The FCC order requiring the implementation of these services allows the provider to select the technology to be used, handset or

network. The Subcommittee found that some requests had funding requested for the location measurement device and others did not. On the handset-based solution, the location measurement device is the GPS chip in each telephone. The Subcommittee found that this was not included in most of the funding requests from providers using the handset based solution because the incremental cost of the chip and an accurate count of handsets sold were nearly impossible to obtain. The equivalent component in the network solution is the location measurement unit at each tower. For parity between the technology choices, the Board explicitly excluded the location measurement unit from funding for both solutions. Had funding been provided for these devices the statewide deployment cost for Phase II would be increased by approximately \$40 - \$50 million. The Board has received some opposition to the exclusion of location measurement units from allowable funding. AT&T Wireless has asked the Board to reconsider their position and Cingular has included the costs in their funding plan even though they acknowledge that they will not be funded.

It must be noted that four wireless providers, Sprint PCS, Nextel, T-Mobile, Triton/Suncom, have indicated that they do not intend to seek cost recovery for Phase II. Their reasons are varied but include that they intend to market location technology services that will fund the network improvements and that the FCC has removed the requirement for cost recovery for Phase II. Regardless of the reason, this decision greatly reduces the cost to deploy Phase II services in the Commonwealth.

Phase II Mapping Data

The mapping display system within the PSAP is only as good as the data used to drive it. To provide accurate, reliable data, during FY2002, the Board approved funding, \$8.7 million, for the first phase of the Virginia Base Mapping Program (VBMP), which is managed by the Virginia Geographical Information Network (VGIN) Division. The first phase of the program involved taking digital orthographic photography of the entire Commonwealth. Before selecting this method to produce the data, the Board explored several other methodologies including providing funding to the localities to produce the data. The VBMP was selected because it provided a single, consistent base for all other geospatial data, allowing the data to be shared more easily. Additionally, the program promised a cost savings of 40% over the locally funded options.

During the winter of 2002, planes photographed all 43,000 square miles of the Commonwealth. The finished photography (adjusted for the curvature of the earth and other factors) started to become available in January of 2003 with the last of it being available for delivery in May 2003. The product has been distributed to the localities (at no cost) on digital video disc (DVD) and has already been integrated into the mapping display systems in several PSAPs. The project was completed for just over \$7 million, which ended up being a 60% savings over producing the data locally. Based on this success, VGIN and the Board considered other data layers that were more cost effective to capture at a statewide level. Consequently, the Board authorized an additional \$1.1 million for the production of a hydrography (streams, rivers and lakes) layer.

In addition to the photography and hydrography, street centerline and addressing data are needed in the PSAP to properly handle the wireless E-911 call. The Board asked VGIN to analyze different sources of the centerline data and to recommend a solution. After considerable analysis, VGIN recommended a statewide approach for the creation of the street centerline and addressing data leveraging existing data from the localities, VDOT and the U.S. Census where possible. Because of

the economy of scale inherent to such a statewide approach, the entire project including the photography, hydrography, street centerline and addressing will be completed within the original authorized funding from the Board, \$9.8 million.

The street centerline and addressing data is currently being produced. Completed street centerline data will be provided to each locality beginning in December 2003 with the addressing data following in June 2004. VGIN has completed a pilot project of the centerline data creating the data for four localities, Loudoun County, Orange County, Powhatan County and Wise County. As an example of the pilot, Powhatan County was selected because the County has no existing GIS data. Centerline data from the recently completed VDOT Centerline project showed 343 miles of VDOT maintained roads throughout the County. Direct digitalization from the digital orthographic photography revealed another 162 miles of private hard surface roads and 832 miles of dirt roads and trails that could support vehicular traffic. This represents an additional 74% of roads within the county.

Project Management Funding

During FY2002, the Board initiated project management assistance. The concern was that while deployment of services was occurring with great speed in the more urban areas, deployments in some rural areas was much slower due to the amount of time local staff had to spend on the project (rural PSAP managers rarely have a large staff and often serve many roles in the locality such as Emergency Services Coordinator, Addressing Coordinator or Records Manager) and the lack of experience with wireless. Funding was allocated for each jurisdiction to have a cap of \$32,000 per phase. However, to encourage regional approaches, and to take advantage of greater economies of scale, the Board decided that the cap should be waived if at least five contiguous localities worked together with the same project management firm.

The project management program has proven to be a tremendous catalyst for wireless participation. During FY2003, 12 of the 13 regional PSAP groups along with two individual jurisdictions (Campbell County and the City of Virginia Beach) began to utilize project management firms to help them implement wireless enhanced services. This represents a collective total of 103 PSAPs currently receiving assistance through this program. The total statewide cost of project management for FY2003 was approximately \$3 million with another \$4 million planned for FY2004. It is expected that the need for project management assistance will be greatly reduced or eliminated by FY2005.

Phase I Project Status

To date, forty-six (46) localities have implemented wireless E-911 Phase I (call back number and cell site location) with all of the wireless service providers serving the locality and there are about a dozen more with only one more provider to implement. Sixty-one (61) other localities have implemented with at least one of their providers (Figure 11). By

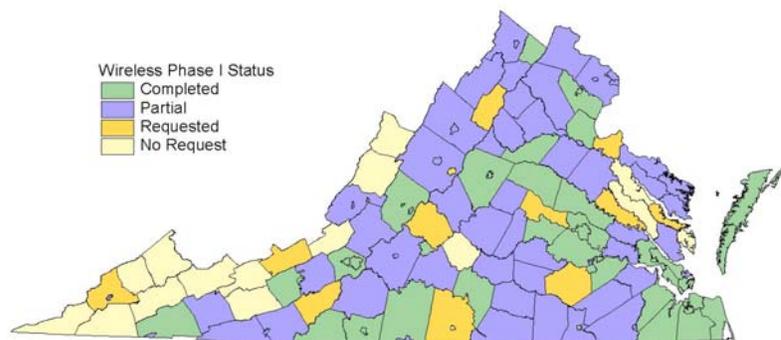


Figure 11 - Wireless E-911 Phase I Implementations

population, this means that 92% of Virginia’s population now has Phase I service available to them from at least one wireless service provider.

The wireless service providers have also been more successful in completing the deployment of the service within the six-month implementation window established by the FCC order. Though there are 87 deployments that have been pending for more than a six-months, this represents a 40% reduction to the 143 overdue deployments noted in last year’s report. Four providers are up-to-date with their deployments with no requests pending more than six months. A total of 374 Phase I deployments have been completed as of June 30, 2003.

To identify roadblocks to deployment, the Board conducted status reviews of each wireless service provider early in FY2003. During these status reports several wireless service providers were lauded for their hard work and apparent dedication to the implementation of Phase I service. Though their implementations were not always within the six- month window directed by the FCC, the delays were attributable to circumstances beyond their control. Other providers were challenged by the Board to improve their performance with the implementation of service. Wireless service providers are required to provide the Board with monthly status reports, which are posted on the DPSC website. These reports have been mapped to provide a visual status for each provider (Figures 12-25). The “Requested” status does mean that the PSAP has requested service and that it has not yet been installed, but it does not necessarily mean that the project is behind schedule. Some PSAPs have only recently requested service with anticipated implementations late in 2003.

Alltel is one of the four providers that is caught up with their Phase I deployments. With 50 Phase I deployments, Alltel has nearly double their number of deployments from the end of FY2002. In addition to their success with Phase I, Alltel is one of the leading providers with Phase II deployments in 18 localities. Alltel is also on schedule with all of their Phase II deployments.

Deployed	Over 6 months	Under 6 months
50 Localities	0 Localities	7 Localities

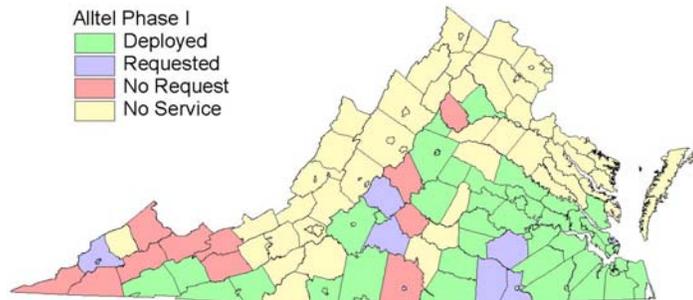


Figure 12 - Alltel Phase I Status

Deployed	Over 6 months	Under 6 months
7 Localities	0 Localities	0 Localities

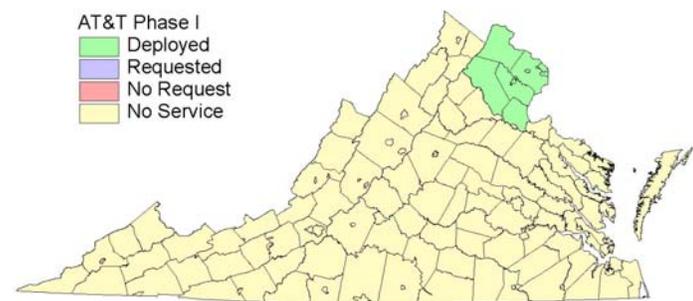


Figure 12 - AT&T Wireless Phase I Status

AT&T Wireless has deployed Phase I in their entire service area in Northern Virginia. Additionally, AT&T Wireless has deployed Phase II in six of the seven localities they serve; however, only for part of their network. AT&T currently uses a TDMA digital network and is migrating to a GSM network. What that means technically is

not important, but what is important is that the Phase II deployments are only on AT&T's TDMA network and not on the new, GSM network. AT&T Wireless is in the process of deploying it at this time.

Getting a late start due to problems with the 9-1-1 service provider, Cingular has made significant progress deploying Phase I service. With a new service provider on board, Cingular has successfully implemented almost all of the requests they have received. Six of the pending requests over six months are waiting for an issue to be resolved at the PSAP, such as the installation of trunks or equipment upgrades, before they can proceed. The remaining two deployments should be completed in the first month of FY2004.

Cellular One (Highland Cellular) is a West Virginia based company that only offers service in six western localities. No locality in this area has made a request for Phase I service.

Nextel ended FY2002 weak without any deployment in the final six months of the year. FY2003 has been much more successful with Nextel more than doubling their number of deployments from 14 to 30. Nextel has not been as successful with Phase II deployments. Nextel uses a proprietary network solution. This has presented unique technical challenges. In June 2003, the Board approved an upgrade to the 9-1-1 network that will allow Nextel to connect more effectively.

Nextel Partners, though a relatively newcomer to Virginia, has deployed Phase I service almost as soon as they deploy wireless service in a new area. They have increased their

Deployed	Over 6 months	Under 6 months
20 Localities	8 Localities	1 Locality

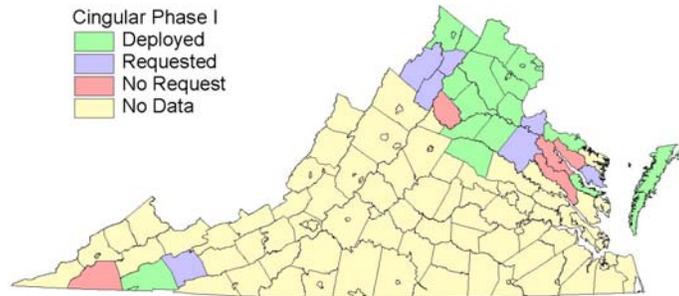


Figure 14 – Cingular Phase I Status

Deployed	Over 6 months	Under 6 months
30 Localities	6 Localities	2 Localities

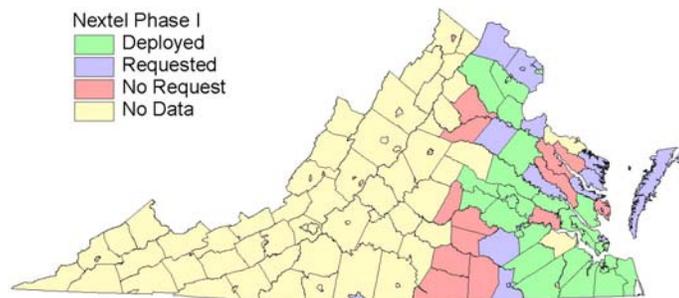


Figure 15 – Nextel Phase I Status

Deployed	Over 6 months	Under 6 months
21 Localities	3 Localities	5 Localities

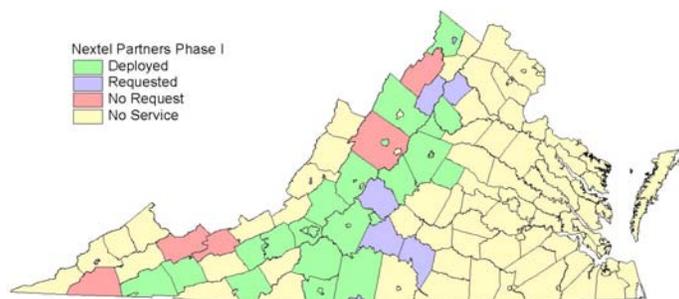


Figure 16 – Nextel Partners Phase I Status

number of deployments from 5 to 21 localities during the past year. It is important to note that the three deployments over six months are waiting for the PSAP to resolve an issue and are not due to delays by Nextel Partners. Using the Nextel Phase II solution, Nextel Partners has deployed 9 localities with Phase II.

Ntelos declared bankruptcy during FY2003, which appeared to impact their Phase I deployments. But Ntelos finished the year strong completing all of their deployments that were pending over six months. Ntelos has not begun their deployment of Phase II though testing is in progress. As a small carrier, the FCC has given Ntelos and other small carriers until October 2003 to begin deployment. Ntelos is on track to meet this deadline

Deployed	Over 6 months	Under 6 months
48 Localities	0 Localities	3 Localities

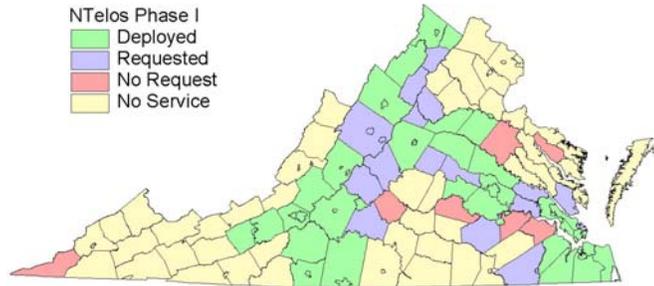


Figure 17 – Ntelos Phase I Status

Shenandoah Cellular was a rural wireless service provider serving only seven localities in the Northern Shenandoah Valley. During FY2003 Shenandoah Cellular sold their assets to Verizon Wireless. As a result, Shenandoah Cellular will no longer be tracked.

Deployed	Over 6 months	Under 6 months
46 Localities	12 Localities	6 Localities

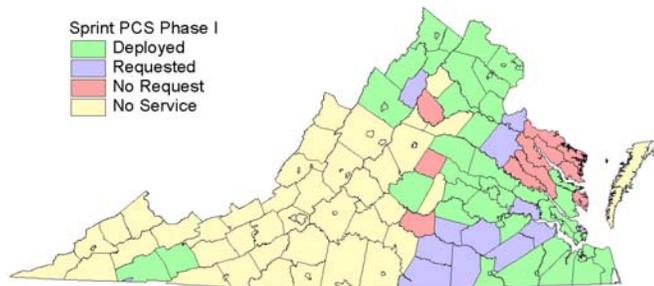


Figure 18 – Sprint PCS Phase I Status

Sprint PCS has finally resolved their equipment problem in Northern Virginia that had previously delayed deployment. As a result, Sprint PCS increased from 16 to 46 localities with Phase I deployed. Of the 12 localities over six months, only four are ready to deploy. The other eight are delayed due to issues at the PSAP. With only five Phase II deployments, Sprint has not performed as well with Phase II deployments.

Deployed	Over 6 months	Under 6 months
19 Localities	20 Localities	10 Localities

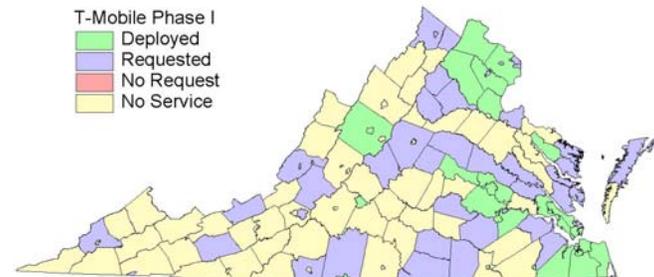


Figure 19 – T-Mobile Phase I Status

T-Mobile, formerly VoiceStream, has had serve in Northern Virginia for over two

years and has recently deployed service in the Richmond, Tidewater and Danville areas. T-Mobile has deployed Phase I service in 19 localities. Though T-Mobile has 20 deployments over the six-month window, in several cases T-Mobile received the request before they actual had deployed wireless service, but accepted the request knowing they would soon deploy service. In addition to Phase I, T-Mobile has deployed a less accurate version of Phase II at the same time. This less accurate version of Phase II was allowed as part of a waiver granted by the FCC. It is being implemented as an interim step until a more accurate location technology is deployed.

Deployed	Over 6 months	Under 6 months
51 Localities	21 Localities	7 Localities

Triton PCS/Suncom has performed very well during FY2003 increasing their Phase I deployments from 30 to 51 localities. Additionally, they have deployed 17 localities with Phase II.

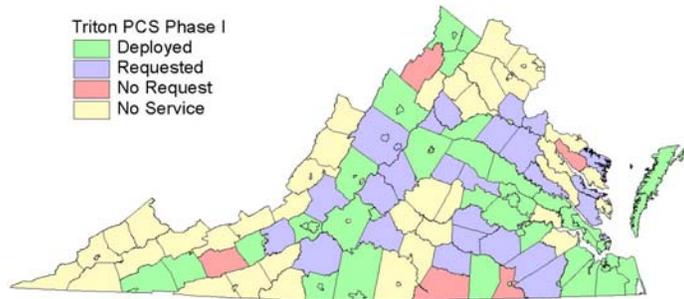


Figure 20 –Triton PCS/ Suncom Phase I Status

Deployed	Over 6 months	Under 6 months
14 Localities	4 Localities	2 Localities

U.S. Cellular has finally has made significant progress with deployment. Though they are a rural carrier, they have deployed 14 localities with Phase I and 7 with Phase II. Of the other four pending deployments over six months, three are ready to test and one is waiting on the installation of PSAP equipment.

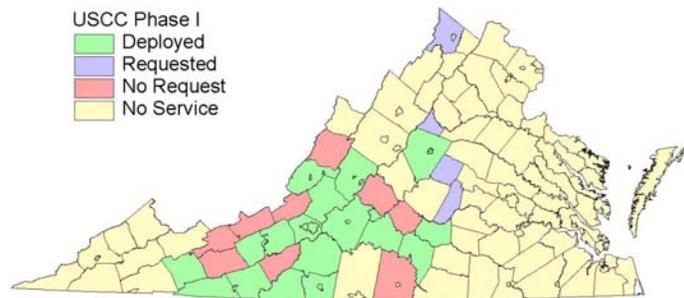


Figure 21 –U.S. Cellular Phase I Status

Deployed	Over 6 months	Under 6 months
66 Localities	13 Localities	1 Localities

Verizon should be commended once again for being the first to implement Phase II in Virginia and their continued leadership. Though their deployments of Phase I had suffered in FY2002 as they deployed Phase II, Verizon Wireless has more than doubled their Phase I deployments in FY2003 going from 25 to 66 localities. Though 13 localities requested service more than six months ago, six are waiting for action by the PSAP. This is a vast improvement over the 33 overdue deployments in FY2002. Verizon also has the

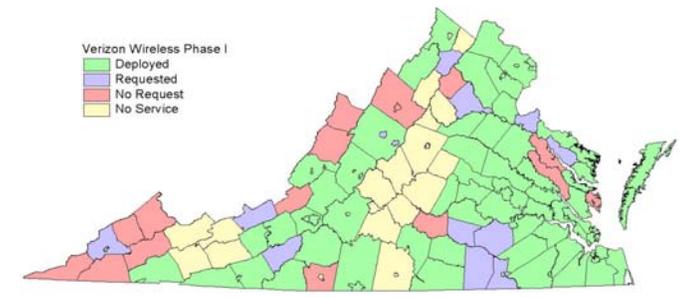


Figure 22 –Verizon Wireless Phase I Status

greatest number of Phase II deployment having deployed in 23 localities.

Virginia Cellular is a small rural provider with only five localities having requested Phase I service. Virginia Cellular has deployed Phase I service with two localities (served by the same PSAP). Three other localities have recently requested service, but they are well within the six-month window of deployment.

Deployed	Over 6 months	Under 6 months
2 Localities	0 Localities	3 Localities



Figure 23 –Virginia Cellular Phase I Status

Phase II Project Status

The most exciting advancements continue to be the deployment of Phase II service. Starting with the implementation in York County in April 2002, deployments have continued throughout FY2003. Nearly all of the major wireless service providers in Virginia have begun their deployments. Even several rural localities have deployed Phase II service including Gloucester, Orange, Rockbridge and Pittsylvania Counties.

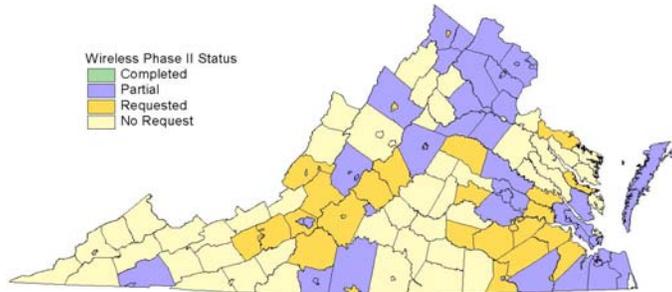


Figure 24 - Wireless E-911 Phase II Status

To date, a total of 149 Phase II deployments have been completed in 50 localities (Figure 24). Though the original FCC order required deployment to begin by October 1, 2001, every major wireless service provider sought and received a waiver of that requirement from the FCC. The waivers granted each provider an extension of time but did not relax the accuracy requirement nor extended the ultimate completion date for implementation, which is December 31, 2005 for 95% of all subscribers to have location equipped handsets. While the FCC dealt with each of the six major carriers individually, they dealt with all of the smaller providers as a block. They split them into two groups calling them Tier II and Tier III and extended the deadlines by seven months and thirteen months, respectively.

In their most recent actions, the FCC has remained firmly committed to the delivery of wireless E-911 and has demonstrated this with recent fines against wireless service providers for violations of FCC orders. But with all of the action of the FCC and even the Wireless E-911 Services Board, complete deployment will still rely on the subscribers purchasing the equipped handsets. Though many providers are implementing safety-net solutions that will provide a location for legacy handsets, as previously mentioned, the accuracy is less than required by the FCC. Figure 25 shows

a map of downtown Richmond near the Capital. The flag represents a caller at the corner of 9th Street and Broad Street, in front of the General Assembly Office Building. The blue circle shows a 750-meter radius area, which is the possible error for some of the safety-net solutions. The circle extends from 1st Street to Shockoe Bottom and from the Interstate 95 and 64 interchange to the James River. Though much more helpful in rural areas, in urban areas it is less beneficial. The green circle represents a 300-meter radius area, which is the largest allowable error under the FCC order (for a network-based solution). Again, very helpful in a rural area, better in an urban area, but still it encompasses about six square blocks. The red circle is a 50-meter radius area. This level of accuracy, required for all handset based solutions (67% of the time), will get the responder within a block; however, even this will not provide elevation so responders will not know which floor of the GAB the caller is on. Of course, searching one building is much better than searching six square blocks or more.

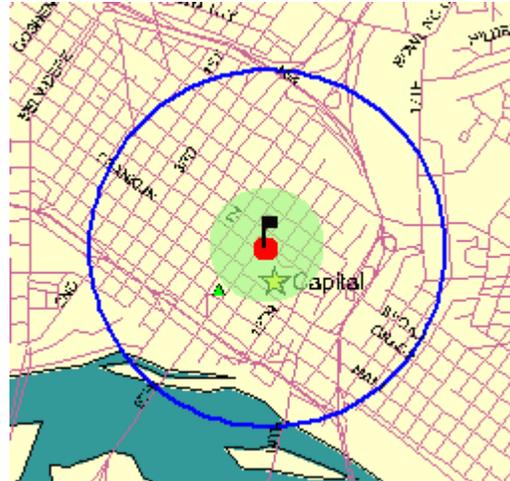


Figure 25 – Varied Accuracy Levels

Wireless Responsibility

Section 56-484.16 of the *Code of Virginia* makes clear the General Assembly’s intent that wireless 9-1-1 calls be answered by the PSAP local to where the call is initiated instead of by the State Police. The *Code* requires that by July 1, 2003, all localities be directly taking the wireless 9-1-1 calls made within their jurisdiction. Rather than just taking the call as required by Code, many localities have opted to deploy Phase I instead. As a result, the success with Phase I deployment translates into success with moving the calls from the State Police to the local PSAP.

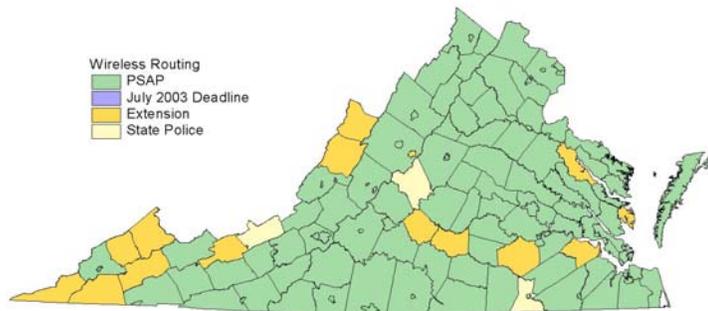


Figure 26 - Responsibility for Wireless 9-1-1

At the close of FY2002, 54 localities were still directing their wireless 9-1-1 calls through the State Police. At the close of FY2003, that number had been reduced to 19 localities (Figure 26 & 27) with many of them very near to meeting this requirement. Six of the 19 localities do not anticipate implementing direct wireless call taking until 2004

Appomattox County; 12-04	Lee County; 12-04
Bath County; 12-04	Madison County; 12-03
Bland County; 12-03	Mathews County; 7-04
Buchanan County; 12-03	Nelson County; 10-03
Dickenson County; 12-03	Prince Edward Co; 2-03
Dinwiddie County; 12-03	Russell County; 12-03
Essex County; 7-04	Scott County; 12-03
Giles; 12-03	Surry County; 9-03
Greensville County; 9-03	Waynesboro; 11-03
Highland County; 12-04	

Month and year the locality is anticipating complying with Code.

Figure 27 - Localities not taking wireless 9-1-1

(Essex and Mathews Counties by July 2004 and Appomattox, Bath, Highland and Lee counties by December 2004). Each of these six must complete deployment of wireline E-911 prior to proceeding with wireless.

In addition, six of these localities have already requested and been approved by the Wireless Board for extensions to the July 1, 2003 deadline. Dinwiddie and Russell counties are extended to December 2003, Dickenson until January 2004, Buchanan to August 2004, and Bath and Highland counties until December 2004.

Wireline Enhanced 9-1-1

Wireline E-911 Project Status

Significant progress has been made in delivering universal wireline E-911 to the State of Virginia. During this year, all localities not wireline E-911 on July 1, 2000 have made a commitment to do so by requesting funding. Originally, 37 jurisdictions were eligible for funding either because they were identified as not having E-911 as of July 1, 2000, or it was determined that they were using an unverified 9-1-1 database (explained below). The status of wireline E-911 implementation for the 37 jurisdictions eligible for funding is identified in Figure 28. Since July 1, 2000, nineteen localities have implemented E-911 service bringing down the number of localities to eighteen that need to implement during the next year (Figure 29). Many jurisdictions have finished all of the onsite work and are waiting on their local exchange carrier to verify their database.

With an unverified 9-1-1 database, the address information associated to a telephone service order does not verify as being valid when it is entered into the 9-1-1 database. Simply put, whatever location information is provided to the telephone company when the telephone service is ordered, it is entered into the 9-1-1 database. In a typical enhanced 9-1-1 system, all telephone service requests are verified against a list of the valid street names and address ranges in the jurisdiction. Consequently, if a citizen requests telephone service and provides an incorrect address, it is identified as an error and is flagged for resolution. The Board previously considered whether an unverified 9-1-1 database should be considered true E-911 and decided it should not. This

Accomack County	Highland County
Alleghany County	King & Queen County
Amherst County	King William County
Appomattox County	Lee County
Augusta County	Lunenburg County
Bath County	Madison County
Bedford	Mathews County
Bedford County	Middlesex County
Bland County	Nelson County
Buchanan County	Northampton County
Buckingham County	Norton
Campbell County	Prince Edward County
Clarke County	Pulaski County
Covington	Russell County
Craig County	Scott County
Cumberland County	Tazewell County
Dickenson County	Westmoreland County
Essex County	Wise County
Fluvanna County	

Legend	
	= Currently E-911
	= Basic 9-1-1
	= No 9-1-1

Figure 28 - Localities without E-911 as of July 1, 2000

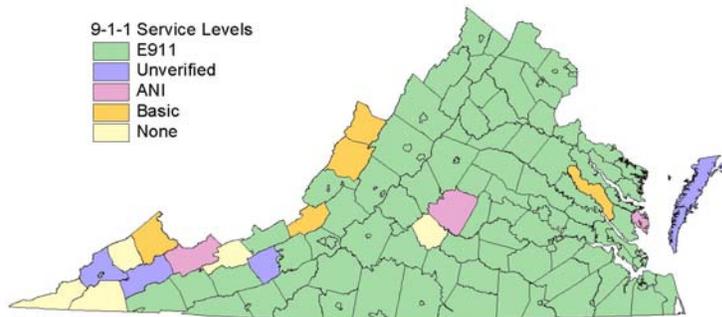


Figure 29 - Wireline enhanced 9-1-1 service levels

put the localities with this level of service under the requirement to complete their implementation, but also gave them access to a portion of the funding.

The following is provided as an update for each locality still needing to implement wireline E-911:

Accomack County is a member of the Eastern Shore PSAP with **Northampton County**. They have had their E-911 equipment for several years. The County has completed the verification process, correcting the unverified addresses within their database. These corrections have been sent to Verizon. The County's street signs have been installed.

Appomattox County is in the early stages of their mapping and addressing process and they are working with VGIN to obtain street centerline data. All of the proposed County road names have been approved and the street signs are being installed. The County has not yet determined a final location for its PSAP within the County's new courthouse complex. Once a location for the PSAP has been determined, the County will order its CPE. The deadline for this project is November 30, 2004.

Bath County has decided to move forward with wireline E-911 because they are able to locally fund the recurring costs. The Board offered Bath County 100% funding of non-recurring costs and funded a study to determine the County's recurring costs. Bath County has completed a wireline E-911 scope of work, requested funding from the Board, and selected a wireline project management firm. Bath County has also established a Coordinating Committee and has appointed a local point of contact for the wireline E-911 project. The deadline for this project is December 31, 2004.

Bland County is well underway with its addressing and mapping process with 67% of the County's addresses verified. The County's street names have been adopted and a street sign RFP has been released. A determination for the CPE provider has not yet been made. Construction is continuing on a new PSAP facility. The deadline for this project is December 31, 2003.

Buchanan County did not even have basic 9-1-1 in July 1, 2000. They have since implemented basic service and are working on enhanced. The mapping and addressing process has been interrupted because of flooding that occurred in the County last fall. One of the County's districts was flooded and is currently being completely re-addressed. They have also hired an E-911 Coordinator to assist them with the project. The County is installing street signs and is in the process of determining the location of the new PSAP facility. Once construction begins on the new PSAP, the County will move forward with purchasing CPE. The deadline for this project is August 1, 2004.

Buckingham County is one of the counties that had an unverified 9-1-1 database. They purchased E-911 equipment in 1990 and populated the database with rural route information and two lines of directional information. Furthermore, this CPE was not compatible with wireless E-911. The County never undertook the mapping and addressing process, but has since contracted with a vendor to complete the mapping and addressing process and it is almost done. Some additional road names need to be approved by the Board of Supervisors so the street signs can be ordered and installed. Also, the County recently hired an E-911 coordinator and this individual has provided the necessary focus for the wireline project. The County has purchased and installed new CPE that is compatible with wireless E-911. The deadline for this project is July 1, 2004

Craig County, like Bath County, would have qualified for an exemption from implementing E-911, but, to their credit, was the first of the four exempted localities to move forward with wireline E-911. The County has been approved for wireline funding and has selected a mapping and addressing vendor. The County has also completed naming all of its public and private roads. The deadline for this project is June 30, 2004.

Dickenson County has hired an E-911 Coordinator to manage the E-911 project. They have completed the mapping project and are currently working on the assignment of addresses. Address verification is 60% complete. The remaining addresses are challenging because of their remoteness. The County's new CPE has been installed and it is operational. One town council in the County has yet to accept its road names, holding up the road sign contract. The deadline for this project is January 1, 2004.

Highland County is the third of the four localities that have been offered 100% of the non-recurring cost by the Board. The Board also funded a study to determine the recurring cost for the County, and as a result, the County has decided to move forward with wireline E-911. Highland County has completed a wireline E-911 scope of work, requested funding from the Board, and selected a wireline project management firm. The County has created a road naming committee and is in the process of naming all of the County's unnamed public and private roads. The deadline for this project is December 31, 2004.

King and Queen County has reached a 66% response rate from County residents for its verification process. The County is currently installing street signs and still anticipates creating an RFP for CPE. The deadline for this project is December 31, 2003

Lee County is the final exempt locality. Not originally targeted for the exemption, Lee County felt that they did qualify, making them the only exempt locality that does not have any form of 9-1-1. Lee County accepted the Board's offer for 100% non-recurring wireline funding. Lee County also requested that the Board fund a wireline recurring cost study. Based on the results of the study, the County's Board of Supervisors voted to move forward with wireline E-911. The next step is for the County to develop a wireline scope of work and to select a wireline project management vendor. The County will need to establish a project completion date.

Mathews County is still working on completing the verification portion of the mapping and addressing process. Currently, they are 80% complete. Street signs have been installed and a CPE vendor has been selected. The deadline for this project is December 31, 2003.

Prince Edward County is still working on the verification process. The deadline for this project is December 31, 2003.

Pulaski County is another locality that had E-911 equipment, but had never implemented a verified database. The County has contracted with a vendor to complete the verification process for those addresses that were never verified. The deadline for this project is October 1, 2004.

Russell County has made significant progress on their mapping and addressing process. Address verification packets have been delivered to County residents. Street signs for the County have been ordered. The County's current CPE will meet their needs and they will not be seeking to replace it. The deadline for this project is December 31, 2003.

Scott County is a locality that needed funding assistance before they could get started. They now have an E-911 Coordinator and a project management firm on board. They have released an RFP for the mapping and addressing process. Street naming is underway and the County will work with its project management firm to determine how it will handle CPE. The County is currently looking for a site for its new PSAP facility. The deadline for this project is July 1, 2004.

Tazewell County has been delayed in the past by the post office. The County and the telephone company must first get approval from the postmaster in Charleston, West Virginia to implement new addresses, but the post office is now responding much more quickly. The County has completed 80% of the addressing process. The County has also selected a CPE vendor. The deadline for this project is December 31, 2003.

Wise County has been mapped and addressed, but they are still completing the verification process. The County has selected a CPE vendor and they have ordered the equipment.

Wireline E-911 Funding

In FY2003, \$9.8 million has been appropriated in the biennial budget from the Wireless E-911 Fund to assist localities with the deployment of wireline E-911. At the end of FY2002, the Board allocated \$7.2 million of the original appropriation to localities. During FY2003, the Board allocated the remaining \$2.6 million. All 37 jurisdictions that were not wireline E-911 as of July 1, 2000 have been approved for wireline funding. To date, the Board has distributed \$4.4 million in wireline payments to qualifying jurisdictions. Payments are made to localities when they can provide the Board with signed contracts or firm price quotations. Recipients of wireline funding are subject to the same audit process as recipients of wireless funding.

Even with this funding, the remaining 21 localities not currently wireline E-911 will not implement by the July 1, 2003 deadline established in *Code*. The Board has the authority to grant extension of time and has already done so for Appomattox, Bath, Bland, Buchanan, Buckingham, Dickenson, Highland, King and Queen, Mathews, Prince Edward, Pulaski, Russell, Scott, Tazewell, and Wise Counties. Other localities such as Accomack, Craig, Lee, and Northampton counties have pending extension requests. The majority of the localities listed above will be wireline E-911 before the end of FY 04. However, there will still be some localities that will need until FY 05 to complete the process.

The process for implementation of enhanced 9-1-1 can be broken down into two broad processes, (1) the mapping and addressing process and (2) the network and equipment process. During the mapping and addressing process, the locality, by itself or with a vendor, identifies and names all of the streets and structures in the locality, assigns a street address to each structure in the locality and posts a street sign at each intersection. Often the jurisdiction will hire one vendor to perform the entire mapping and address process with the exception of the street naming, which is the responsibility of the locality. The result of this process is a list of the old addresses matched with the new addresses and the occupant's name and telephone number. The total cost for this process can range from \$135,000 to \$450,000 depending on the size of the jurisdiction. A portion of this cost will now be saved due to the Virginia Base Mapping Initiative supplying digital orthographic photography to the localities. The Board is requiring all localities that still need to map and address to use the VGIN supplied data.

The second process is the network and equipment implementation. The local telephone company provides the network components, which are basically the telephone lines needed to complete the 9-1-1 call from the caller to the PSAP. The local telephone company often, but not always, provides the enhanced 9-1-1 telephone equipment as well. This includes the equipment to answer the call, request the location information and display the information to the call taker. The cost for the network is \$2,100 to \$7,500 per 1,000 telephone access lines in the jurisdiction. In addition, the equipment will cost approximately \$150,000 for a two-position PSAP. No statewide contracts exist for this equipment so each locality must conduct their own procurement.

Under the wireline E-911 grant guidelines, the following costs are considered allowable: mapping; addressing; street signage; customer premise equipment (PSAP equipment); and network costs. Specifically not eligible for funding under the wireline E-911 grant guidelines are: voice logging equipment; computer-aided dispatch systems; buildings and furnishings; and radio systems.

Strategic Plan

During FY2003, the Board developed and approved a strategic plan. Through the development process the Board created a mission statement as follows:

“The mission of the Virginia Wireless E-911 Services Board contains two components. The first component is to promote and assist in the development, deployment, and maintenance of enhanced wireless emergency telecommunications services and technologies. The second component is to promote and assist in the development and deployment of enhanced wireline emergency telecommunications services and technologies only in specific local jurisdictions that are not currently wireline E-911 capable.”

From the mission statement, the Board then produced a set of goals to accomplish that mission. The six goals of the Board are as follows:

1. Stewardship:

Assist in the implementation of wireless enhanced 911 throughout Virginia and wireline enhanced 911 in specific local jurisdictions that are not currently wireline capable. Implementation of wireless enhanced 911 service is to be achieved in two phases (Phase I and Phase II), pursuant to FCC Order 94-102 of 1996, and subsequent rulings and orders of the FCC.

2. Operational oversight:

Accomplish the implementation of both wireless and wireline enhanced 911 by utilizing the most cost effective and efficient methodologies. These methodologies will be reflected in the establishment of guidelines and operational standards that will be periodically validated.

3. Financial management and accountability:

Provide financial oversight of the Virginia Wireless Fund by establishing financial management guidelines and accountability standards for payments made from the Fund for the implementation of wireline and wireless E-911. These guidelines and standards will establish the basis for the Board’s financial business transactions.

4. Education and Technical Assistance:

Inform Virginia citizens on the use of 911, the designated emergency telephone number and the use of #77, the designated non-emergency telephone number. Provide advisory technical assistance to Public Safety Answering Points (PSAPs), state and local law enforcement, and fire and emergency medical services agencies, upon request.

5. Planning:

Develop a comprehensive implementation plan for statewide enhanced wireless emergency telecommunication services that accomplishes the following objectives: monitors trends and improvements; plans and forecasts for future needs; and, formulates efficient and effective deployment strategies.

6. Deciding agency for wireless 911:

Act as the deciding agency for wireless 911 related issues by directing staff to carry out the goals of the Virginia Wireless E-911 Services Board, by granting extensions of time for compliance with the local emergency telecommunications requirements, and by establishing other goals as needed.

Finally, the Board adopted an implementation plan for the six goals. The plan is to provide guidance to the Division of Public Safety Communications for the support of 9-1-1 in the Commonwealth.

1. Stewardship:

- a. Identify the mission and the responsibilities of the Virginia Wireless Enhanced 911 Services Board from the enabling legislation created by the Virginia General Assembly.
- b. Empower the Division of Public Safety Communications, created by the Virginia General Assembly to provide staff support to the Virginia Wireless Enhanced 911 Services Board, to assist in the statewide implementation of wireless emergency telecommunication services and the implementation of wireline emergency telecommunication services in those jurisdictions not wireline capable as of July 1, 2000.
- c. Designate the Division of Public Safety Communications as the business operations entity for the Virginia Wireless Enhanced 911 Services Board.

2. Operational Oversight:

- a. Identify the necessary resources and associated costs to implement statewide wireless emergency telecommunication services and to implement wireline emergency telecommunications services in those jurisdictions not wireline capable as of July 1, 2000.
- b. Create the guidelines and a timeline for the statewide implementation of wireless emergency telecommunication services.
- c. Create the guidelines and a timeline for the implementation of wireline emergency telecommunication services in those jurisdictions not wireline capable as of July 1, 2000.
- d. Create an Annual Report on the state of enhanced wireless emergency telecommunications services in the Commonwealth; the impact of, or need for, legislation affecting the enhanced wireless emergency telecommunications services in the Commonwealth; the need for changes in the Wireless Enhanced 911 funding mechanism as appropriate; and, the sufficiency of other moneys appropriated for the provision of enhanced wireline emergency telecommunications services only in those jurisdictions not wireline capable as of July 1, 2000.
- e. Identify the rules and procedures to safeguard proprietary information submitted to the Virginia Wireless Enhanced 911 Services Board.

3. Financial Management and Accountability:

- a. Monitor the level of reserves in the Virginia Wireless Fund and the sufficiency of other moneys appropriated for the provision of enhanced wireline emergency telecommunications services and

analyze the need for changes in these funding mechanisms in periodic reports to the Virginia Wireless Enhanced Services Board.

- b. Determine the method of cost recovery for approved expenditures submitted by appropriate parties based on the policies, procedures, and standards developed by the Virginia Wireless Enhanced 911 Services Board for the implementation of statewide wireless emergency telecommunication services and the implementation of wireline emergency telecommunications services in those jurisdictions not wireline capable as of July 1, 2000.
 - c. Reimburse appropriate parties for submitted expenditures and estimated costs that have been approved (by) the Virginia Wireless Enhanced 911 Services Board.
 - d. Provide financial oversight by auditing on an annual basis payments made to appropriate parties for expenditures and estimated costs associated with the implementation of statewide wireless emergency telecommunication services and the implementation of wireline emergency telecommunications services in those jurisdictions not wireline capable as of July 1, 2000
 - e. Act upon any adverse audit findings from the annual True-Up process.
4. Education and Technical Assistance:
- a. Establish the technical operating standards to implement statewide wireless emergency telecommunication services and to implement wireline emergency telecommunications services in those jurisdictions not wireline capable as of July 1, 2000.
 - b. Provide technical advisory assistance to appropriate individuals and agencies.
 - c. Establish tactics and strategies to assist jurisdictions with public educational programming on the use of 911 and #77.
 - d. Develop a strong statewide 911 public education program by coordinating the efforts of local PSAP managers.
5. Planning:
- a. Monitor the trends and improvements made in wireless telephony and the directives issued by the FCC to assess the potential impact to the Commonwealth's enhanced wireless emergency telecommunication services in terms of additional required resources and costs.
 - b. Plan and forecast for the future needs of the Commonwealth's enhanced wireless telecommunication services by identifying potentially new sources for wireless enhanced 911 calls.
 - c. Formulate efficient and effective deployment strategies for these future trends and improvements in wireless telephony as they relate to the Commonwealth's telecommunications services.
6. Deciding Agency for Wireless 911:
- a. Serve as a neutral forum for discussions on wireless 911 problems and achievements.
 - b. Review and act upon requests made by the appropriate parties to the Virginia Wireless Enhanced Services Board.
 - c. Grant extensions of time for compliance with local telecommunications requirements.
 - d. Support the staff for the Division of Public Safety Communications to accomplish the goals of the strategic plan.

- e. Collect, maintain, evaluate, and distribute data to support the goals and objectives of the Virginia Wireless Enhanced Services Board.

This strategic plan will be the guiding force for Board policy and activity during the coming years. It will be revisited each year as part of the annual reporting process and be updated as appropriate.

Conclusion

The wireless E-911 legislation currently in effect in Virginia is generally sound. It continues to demonstrate Virginia's leadership in 9-1-1 and commitment to public safety. The Board is not recommending any legislative changes for the 2004 General Assembly Session.

The implementation of wireless enhanced 9-1-1 is progressing very well. The amount of the wireless surcharge can be reduced to \$0.65 in FY2005 if the funding of the State Police from the fund is eliminated. If this appropriation is not eliminated, the surcharge rate cannot be reduced. While the Wireless E-911 Fund is currently healthy, the recent budget reductions and other projects will likely eliminate any fund balance by the end of the current biennium. The Wireless E-911 Services Board, since its inception, has provided a total of \$44.2 million to PSAPs from FY2000 through FY2003 with another \$19.1 million to be provided in FY2004. Most exciting during FY2003 has been the deployment of Phase II service in 50 localities throughout the Commonwealth. This has solidified Virginia as one of the national leaders of wireless E-911.

The implementation of statewide wireline enhanced 9-1-1 has also progressed. All of the \$9.8 million appropriated during the 2002 General Assembly session from the Wireless E-911 Fund has been allocated for wireline E-911 grants to localities. While at least some of the localities will not implement E-911 by July 1, 2003, at least everyone now is moving in the right direction.