COMMONWEALTH of VIRGINIA
Wireless E-911 Services Board
FY2004 Annual Report

Prepared by the
Virginia Information Technologies Agency
Division of Public Safety Communications
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Executive Summary

During FY2004, the Wireless E-911 Services Board (the Board) met six times, two more times than required by the *Code of Virginia*. During that time, the Board has:

- completed $9.8 million of funding for the Virginia Base Mapping Initiative including digital orthographic photography and street centerlines for the entire Commonwealth;
- conducted the audit of FY2003 funding provided as required by *Code* (125 localities, 12 wireless service providers);
- approved 123 public safety answering points (PSAPs) for FY2005 funding (approximately $15.6 million);
- approved nine (9) wireless service providers for FY2005 Phase I funding including Phase II costs;
- implemented an on-line application for funding submissions; and
- conducted a citizen survey with the VCU Center for Public Policy to determine the need for public education within the Commonwealth.

In addition, the Board is currently processing the audit of FY2004 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.

Additionally, Item 467, Item A of the 2004-2006 Biennial Budget requires the Virginia Information Technologies Agency (VITA) to:

> A. Virginia Information Technologies Agency shall provide a status report on the utilization and status of monies held and anticipated in the E-911 Fund by November 1, of each year to the Governor and the Chairmen of the Senate Finance and House Appropriations Committees.

This report is to satisfy both of these requirements.

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, is nearing completion with 103 localities completed with deployment. Over 95% of all wireless subscribers now have wireless E-911 Phase I service. Every PSAP in the Commonwealth has committed to the full deployment of wireless E-911 and is aggressively pursuing deployment. Many of the localities still working toward Phase I deployment were the localities having to deploy wireline E-911 first. All wireless service 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.

The deployment of wireless E-911 Phase II, which provides the PSAP with the caller's actual location by longitude and latitude, has continued aggressively throughout the Commonwealth. On August 29, 2003, the first two localities completed Phase II deployment, City of Hampton and Orange County. Currently, nearly 50 localities have completed the deployment of Phase II. 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. Many of the wireless service providers opted for a handset-based Phase II solution, which uses a global position system (GPS) chip in the telephone to locate the caller. As more PSAPs and providers deploy the service, focus shifts to encouraging subscribers to replace their existing handsets with one that has the requisite chip. The wireless service providers and all of the localities involved should be commended for their efforts. 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

A number of legislative issues have arisen during the past year. The following is a list of the legislative issues being recommended for consideration during the 2005 General Assembly Session:

1) modify cost recovery language to remove possible constitutional conflict;

2) Federal, state and local government exemption

3) remove the exemptions to E-911 deployment that are no longer needed;

4) modify wireless surcharge collection methodology and definition for prepaid wireless service;

5) change the timeline for the end of year audit and explicitly address underpayments; and

6) clarify the appeal of Board decisions to the circuit court applies only to subsection G of §56-484.17.

A complete discussion of each change is presented below.

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 $26 million at the end of FY2003, which was $20 million less than the fund balance at the end of FY2002. The fund balance was further reduced to $15 million by the end of FY2004. Most of this funding is required for the FY2005 appropriation. 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, almost all local PSAPs were 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.

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

The last 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 granted funding requests in the amount of 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 FY2004, a total of $6.7 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. Language was added to the surcharge statute to provide prepaid wireless carriers, who do not bill their customers on a monthly basis, with options concerning how the surcharge could be collected from customers. 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 clarified to all wireless service providers and resellers, including those providing prepaid services, that they are required to collect the surcharge. The change should result in increased revenue in the amount of $1.1 million per year.

During a review of another issue, the Attorney General's Office (AGO) discovered a problem that required resolution during the 2004 General Assembly session. At the request of several wireless service providers, the Board had been making quarterly payment to the providers based on actual costs incurred during that quarter. However, the Code section required the Board to make four equal quarterly payments based on the estimated costs submitted by the provider. Unfortunately, the estimates submitted were often found to greatly exceed the amount actually expended during a fiscal year. Additionally, receiving payments without an associated invoice did not work well for the providers either. To avoid these problems, the Board honored the request of several providers to switch to paying on actual costs incurred not realizing the existing legislative requirement. When the problem was identified by the AGO, legislation was drafted and ultimately passed by the General Assembly to allow the Board discretion in the timing of payments to providers and PSAPs.

Need for Legislative Change

One issue that the Board is legislatively required to address in this report is the need for legislative changes. A number of legislative issues have arisen during the past year. The following sections outline six changes to the existing legislation and provide an explanation of each. The Board recommends their consideration during the 2005 General Assembly Session.

Possible Constitutional Conflict

Section 56.484.17 of the *Code of Virginia* states:

> D. The Board shall make such qualifying payments to each PSAP operator and CMRS provider at the beginning of each calendar quarter of such fiscal year or on an alternate schedule approved by the Board. If the Wireless E-911 Fund is insufficient during any calendar quarter to make all such qualifying payments, the Board shall prorate payments equally among all PSAP operators and CMRS providers during such calendar quarter. Unpaid amounts shall be carried forward for payment during the next calendar quarter. Such carry-forward process shall continue until all actually incurred costs have been paid.

Article X, Section 7 of the Virginia Constitution requires that "[n]o money may be paid out of the Treasury except in pursuance of appropriations made by law," and Article X, Section 9 of the Virginia Constitution provides that "[n]o debt shall be contracted by or in behalf of the Commonwealth except as provided" therein. A change is necessary to the legislation to assure compliance with the above constitutional restrictions by ensuring that the carry forward process does not create a debt upon the Commonwealth. Specific modifications to the legislative language are still being drafted by the Board and will be available for the 2005 General Assembly Session.

Federal, State and Local Government Exemption

Currently there is no exemption from the Wireless E-911 Surcharge for federal, state and local government subscribers. These government entities are exempt from the local wireline surcharge and thus the Board recommends that this same exemption exist for the wireless surcharge as well. The exemption can be accomplished by inserting, "However, no such surcharge shall be imposed on federal, state and local government agencies," in Section 56.484-17 (B) after the first sentence.

Exemptions to E-911 deployment

Section 56.484.16 of the *Code of Virginia* currently allows a locality meeting a certain criteria to be exempt from the deployment of E-911. Though four localities (Bath, Craig, Highland and Lee) may

have originally met these criteria, all have committed to the deployment of E-911 thus eliminating the need for the exemption.

The Board recommends the following change to §56.484-16:

> § 56-484.16. Local emergency telecommunications requirements; use of digits "9-1-1."
>
> A. ~~Except as provided in subsection D, all county, city or town PSAPs that as of July 1, 2000, are operating a wireline E-911 system and capable of receiving wireless 911 calls directly shall begin answering wireless 911 and E-911 calls no later than July 1, 2002, unless an extension of time has been granted by the Board. Except as provided in subsection D, all other county, city or town PSAPs shall begin answering and responding to wireless 911 and E-911 calls no later than July 1, 2003, unless an extension of time has been granted by the Board. The digits "9-1-1" shall be the designated wireless emergency telephone number in Virginia. No public safety agency shall advertise or otherwise promote the use of any telephone number for emergency response services other than "9-1-1."~~
>
> ~~B. Except as provided in subsection D, o~~On or before July 1, 2003, every county, city or town in the Commonwealth shall be ~~operating~~ be served by an ~~wireline~~ E-911 system, unless an extension of time has been granted by the Board.
>
> ~~C~~B. The digits "9-1-1" shall be the designated emergency telephone number in Virginia. No public safety agency shall advertise or otherwise promote the use of any number for emergency response service other than "9-1-1."
>
> ~~D. The provisions of this section shall not apply to any county, city, or town in which (i) fifty percent or more of the locality's geographic area is unable to receive wireless telephone service; (ii) no taxes are imposed for E911 services pursuant to § 58.1-3813.1; and (iii) the Board has designated a specific PSAP or the Virginia State Police to answer wireless 911 and wireless E-911 calls originating in the particular locality, and the designated entity agrees to answer wireless 911 and wireless E-911 calls.~~

Wireless surcharge calculation and definition

In 2003, legislation was introduced to provide prepaid wireless providers who do not bill customers on a monthly basis with options regarding the manner in which the wireless E-911 surcharge could be collected. Since its passage, suggestions for alternate methods of calculating the surcharge prepaid for prepaid subscribers have been made. Currently, Section 56-484.17 (B) provides two methods for collecting the prepaid surcharge stating:

> The surcharge shall be collected from wireless service subscribers through monthly billing. For any subscriber not billed on a monthly basis, the surcharge shall be collected either at the point of sale or calculated monthly based on the number of wireless subscribers on the last day of the month. The surcharge amount or an equivalent number of air-time minutes may be reduced from a prepaid subscriber's account when direct billing is not possible.

The current definition of the wireless surcharge states:

> "Wireless E-911 surcharge" means a monthly fee of $.75 billed by each CMRS provider and CMRS reseller on each CMRS number of a customer with a place of primary use in Virginia.

The Board will recommend specific changes to the collection methodology and any resulting changes to the definition for the 2005 General Assembly Session.

Change the end of year audit

Section 56-484.17 of the *Code of Virginia* states:

> E. During the period July 1 through September 30 of each year, the Board shall determine whether qualifying payments to PSAP operators and CMRS providers during the preceding fiscal year exceeded or were less than the actual wireless E-911 PSAP costs or wireless E-911 CMRS costs of any PSAP operator or CMRS provider. Each PSAP operator or CMRS provider shall provide such verification of such costs as may be requested by the Board. Any overpayment shall be refunded to the Board or credited to qualifying payments during the then current fiscal year, on such schedule as the Board shall determine.

Two practical issues exist with this section. First, the timeline established has not been achievable in the past. Most localities and wireless service providers need until September 1 to submit their documentation, which can be complex and voluminous. The review of this documentation typically takes 60 days to resolve and present to the Board for approval.

The second issue with the end of year audit is that while the legislation states clearly what is to be done if an overpayment is made to a PSAP or wireless service provider, it is silent as to underpayments to PSAPs and wireless service providers. While the Board has always simply paid any underpayments, clear legislative authority to continue this practice is desired. Not addressing underpayments in this way would encourage recipients to overstate their original funding requests to ensure no underpayments are made.

The Board recommends amending §56.484.17 (E) as follows:

> E. ~~During the period July 1 through September 30 of each year~~After the end of each fiscal year, on a schedule adopted by the Board, the Board shall determine whether qualifying payments to PSAP operators and CMRS providers during the preceding fiscal year exceeded or were less than the actual wireless E-911 PSAP costs or wireless E-911 CMRS costs of any PSAP operator or CMRS provider. Each PSAP operator or CMRS provider shall provide such verification of such costs as may be requested by the Board. Any overpayment shall be refunded to the Board or credited to qualifying payments during the then current fiscal year, on such schedule as the Board shall determine. In the event payments were less than the actual costs reported, the Board may include the additional funding with the next quarterly payment for the then current fiscal year.

Clarify the appeal of Board decisions

Section 56-484.17 G states:

> G. CMRS providers and PSAPs found by the Board to be using the Wireless E-911 Fund moneys for purposes other than those authorized by the Board shall be provided with written notice by the Board of such unauthorized expenditures. Upon receipt of the notice, the named CMRS provider or PSAP shall cease making any expenditure involving Wireless E-911 Fund moneys identified by the Board as unauthorized. The CMRS provider or PSAP may petition and shall receive a hearing before the Board within a reasonable time. At the Board's discretion, the CMRS provider or PSAP shall be required to refund within 90 days any Wireless E-911 Fund moneys spent on unauthorized expenditures to the Board for deposit into the Wireless E-911 Fund. CMRS providers or PSAPs who fail to cease making unauthorized expenditures or fail to comply with a request to refund Wireless E-911 Fund moneys shall be subject to a suspension of future Wireless E-911 funding by the Board until such time as they comply with all provisions of this article. Any action of the Board made pursuant to this section shall be subject to appeal to the circuit court in which the CMRS provider or PSAP is located, or to the Circuit Court for the City of Richmond.

The last sentence of this subsection states "Any action of the Board made pursuant to this section shall be subject to appeal to the circuit court in which the CMRS provider or PSAP is located, or to the Circuit Court for the City of Richmond." Since it is the last line of this subsection, it appears that it should only be applicable to subsection G. However, the actually language states that it is

any action taken by the Board pursuant to "this section". Language is being proposed to clarify that the last sentence in subsection G applies only to that subsection

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. The FY2003 annual report noted that there were estimated to be over 146 million wireless telephones in the United States. By the end of FY2004, that number had risen to 166 million[1]. That represents an increase of 20 million new wireless phones during FY2004, or said differently, over 54,000 new wireless telephones 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), 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 having wireless telephones[2].

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
2003	187,349,138	158,721,981
Projections		
2004	189,592,176	167,513,329
2005	191,112,329	181,851,220
2006	191,854,609	196,657,776

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

Figure 1 - Subscriber Counts - 1985-2006

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 2) 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

[1] Cellular Telecommunications and Internet Association (CTIA)
[2] Joelle Tessler, The Mercury News, August 4, 2002

access lines and some growth is likely, wireless will not surpass wireline in Virginia until after 2006.

Even though commercially produced projections mirror those created for this report, the wireless industry continues to be volatile. This volatility makes projections of subscribers for even the coming year extremely difficult. A January 2002 study[3], 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.

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
2003	3,610,284	158,721,981
Projections		
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 2 - Virginia Wireless Subscriber Count

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." During FY2004, Cingular announced plans to acquire AT&T Wireless Services (both serving the Northern Virginia region) and Cingular and Triton PCS (doing business in Virginia as Suncom) announced an agreement that if the AT&T acquisition is finalized, that they will swap markets so that Cingular will acquire Triton's markets in Virginia. In other words, AT&T Wireless and Triton PCS (Suncom) will disappear in Virginia leaving only Cingular.

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

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

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
2002	64,330,447
2003	72,535,945

Source: CTIA

Figure 3 - Wireless 9-1-1 Calls

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

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 likely not 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 3), 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 4). According to the order, the wireless service provider must implement Phase I within six months of a request from the PSAP. The timeline for Phase II is contingent on the location technology selected by the wireless service provider, network-based (triangulation) or handset-based (global positioning system – GPS).

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 4 - FCC Phase II Requirements

The Wireless E-911 Fund

The Wireless E-911 Fund is generated by a $0.75 surcharge collected from each wireless customer whose place of primary use is in Virginia. The fund currently generates approximately $2.7 million each month. The Fund had a balance of approximately $26 million at the end of FY2003, which is $19 million less than the FY2002 ending balance. However, during FY2004, special projects and budget cuts reduced the fund balance to $10 million by the end of FY2003. Almost the entire balance of the fund is earmarked to cover the current biennial budget.

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 5). 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 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.

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 6), 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

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 5 - PSAP Cost Estimates

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.

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 6 – Wireless Provider Funding

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 FY2005 and FY2006 is $33 million and $34 million, respectively. Each penny of surcharge generates approximately $450,000 of revenue annually. This means that a surcharge of only $0.60 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 were incurred or were at least encumbered. As a result, only an additional $2 million is needed for non-recurring cost in FY2005 and FY2006. This means the total required surcharge for FY2005 and FY2006 is $0.65. However, the current biennial budget includes a $3.7 million appropriation to the State Police for wireless 9-1-1 call taking. As long as the State Police funding is continued, the surcharge rate cannot be reduced and must continue at the current $0.75.

The wireless 9-1-1 calls are currently being transitioned from the State Police dispatch centers to the local PSAP. Only nine (9) localities utilize the State Police for wireless 9-1-1 call taking and they will begin taking the calls directly when E-911 is deployed so funding wireless call taking in the State Police should no longer be necessary. Additionally, federal legislation (SB1250 and HR2898) has been making their way through Congress been introduced that would audit how states utilize E-911 funding. States found diverting funding would reduce the state's ability to receive their share of federal funding for E-911. The Senate legislation, which authorizes $500 million per year, has been reported out of committee and is awaiting consideration by the full Senate. The House legislation, which authorizes $100 million per year, has been approved by the House and has been sent to the Senate for action.

Wireless Funding

The Wireless E-911 Services Board began providing funding to PSAPs and wireless service providers in FY2000. The amount of funding has increased each year as more localities move to implement the service and more deployments occur (Figure 7). 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	123	129	$16,015,454	$8,000,000
2005	125	133	$15,166,000	11,000,000

Figure 7 - 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* requires[4] to be conducted at the end of each fiscal year.

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.

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. 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 from wireless E-911 fund. In May 2004, Bath County notified the Board of their intent to proceed with the deployment of E-911 and to receive funding.

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 carried over their FY2003 funding to FY2004 because of delays with deployment. The amount of funding also peaked during FY2003 as the largest PSAP in the Commonwealth requested their non-recurring Phase II costs. FY2005 is significantly less because those costs have for the most part already been paid. The remaining PSAP that have not requested funding in FY2005 are still working to deploy wireline E-911 and will be making funding requests when they are further along with those projects.

[4] Section 56.484-17, *Code of Virginia*

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 was allowed select the system that best meets their needs and the Board provided 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. After participating in discussions that addressed various issues associated with the network-based solution, 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 and Cingular have asked the Board to reconsider this position.

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 finalized. Completed street centerline data have already been provided to some PSAP. Others will receive their data through the end of 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 waved 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 in FY2004. As deployments are completed in each PSAP, project management also ends. Project management

assistance is expected to end by December 31, 2004, except in localities still deploying wireline E-911 where it will continue as long as necessary.

Phase I Project Status

To date, one hundred three (103) 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 several more with only one more provider to implement. Fourteen (14) other localities have implemented with at least one of their providers (Figure 8). By population, this means that 96% of Virginia's population now has Phase I service available to them from at least one wireless service provider. A total of 603 out of 737 Phase I deployments have been completed as of June 30, 2004.

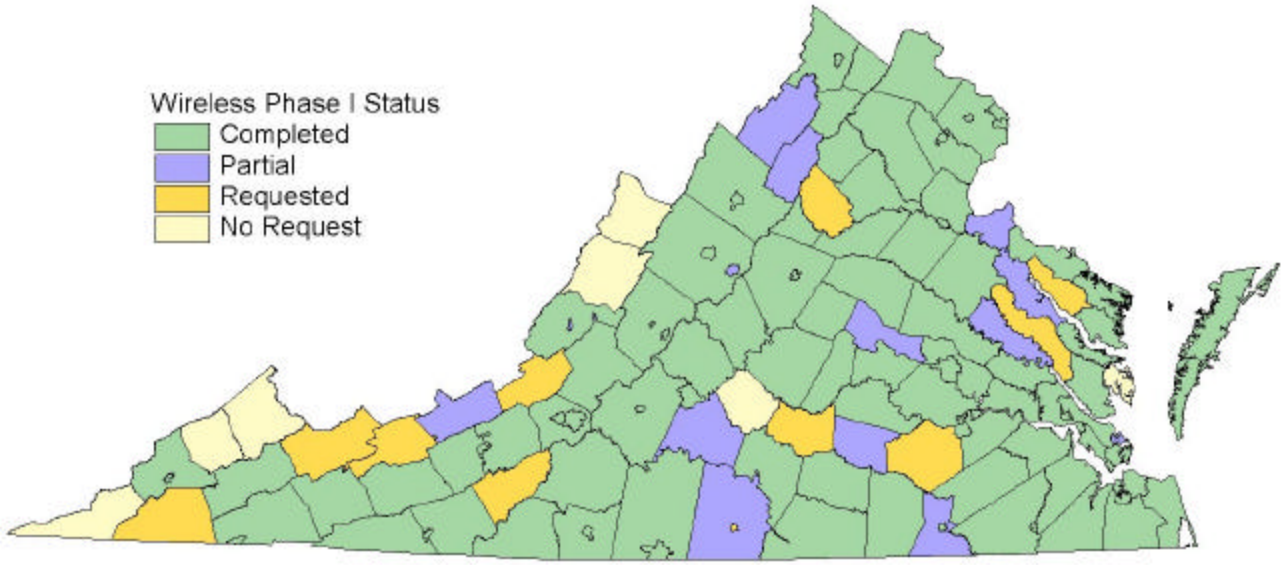

Figure 8 - Wireless E-911 Phase I Status

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. There are only 27 deployments that have been pending for more than a six-months, which represents a 69% reduction to the 87 overdue deployments noted in last year's report. Eight providers are up-to-date with their deployments with no requests pending more than six months. Though their implementations were not always within the six- month window directed by the FCC, the delays were attributable to circumstances beyond their control.

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 aggressively ever since. Even several rural localities have deployed Phase II service. In fact, Orange County was first to complete their Phase II deployment on August 29, 2003, which was the same day that the City of Hampton completed deployment. At a press conference held by Lt. Governor Kaine to congratulate Orange County on their success, the PSAP Manager, Melissa G. McDaniel, stated that

the County would not have been able to proceed with deployment had it not been for the support (financial and technical) received from the Wireless E-911 Services Board.

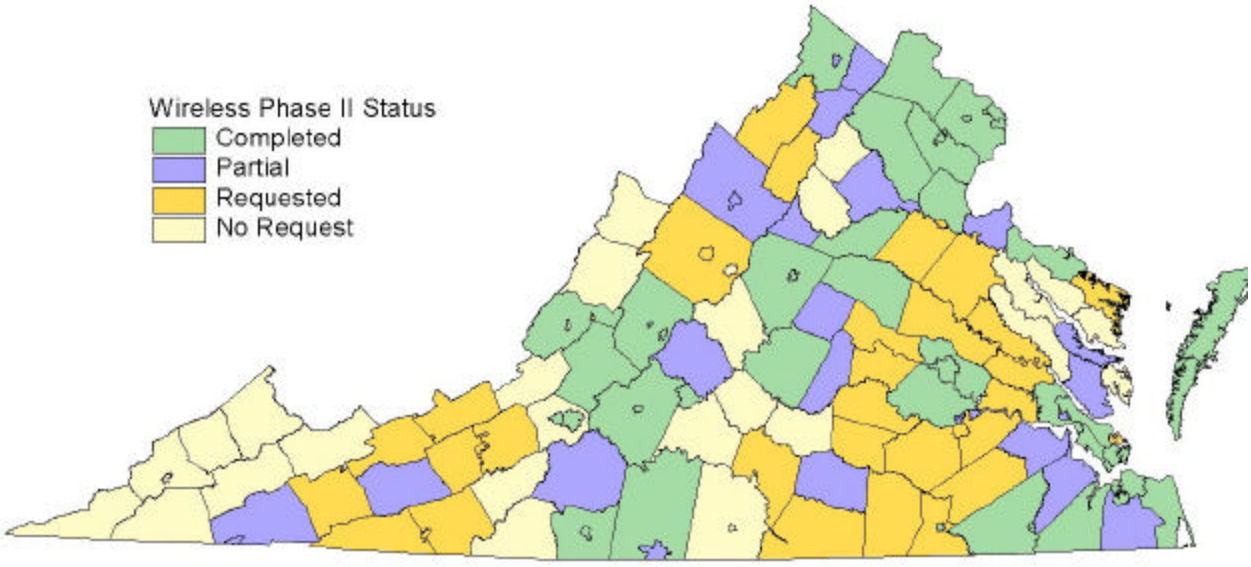

Figure 9 - Wireless E-911 Phase II Status

To date, a total of 323 Phase II deployments have been completed up from 149 last year (Figure 9). 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 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 10 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

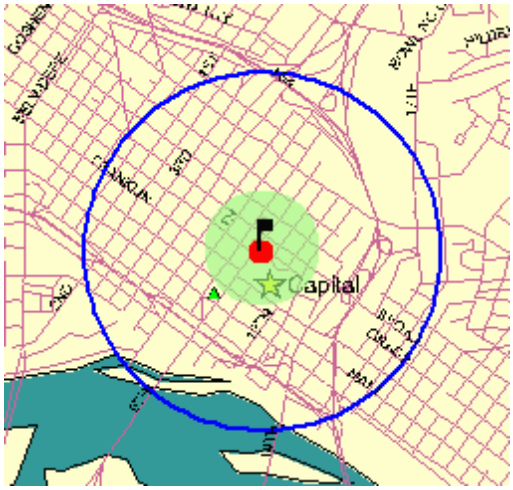

Figure 10 – Varied Accuracy Levels

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.

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 for Phase I & II (Figures 11-36). The "Requested" status means 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 Phase II service with anticipated implementations late in 2004.

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

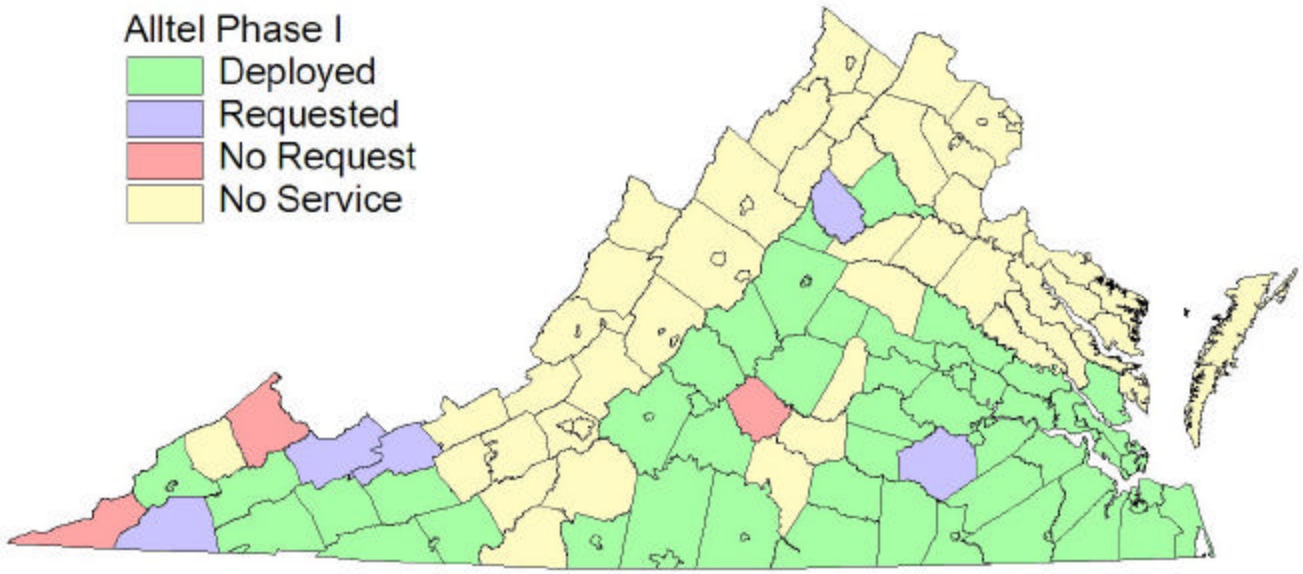

Figure 11 - Alltel Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

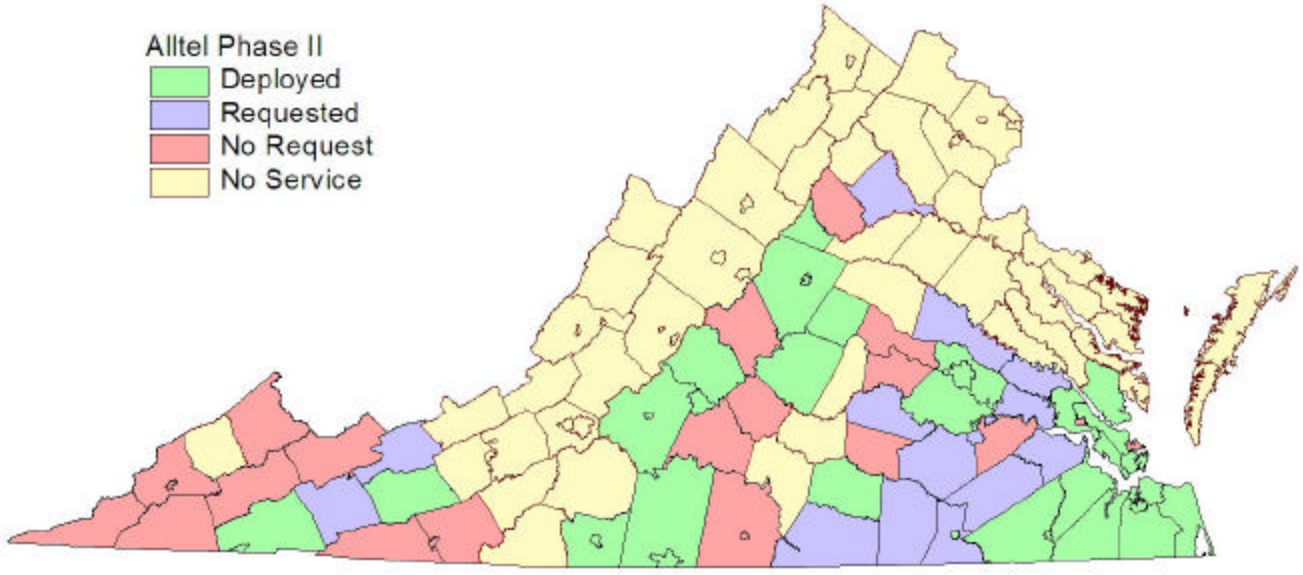

Figure 12 - Alltel Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

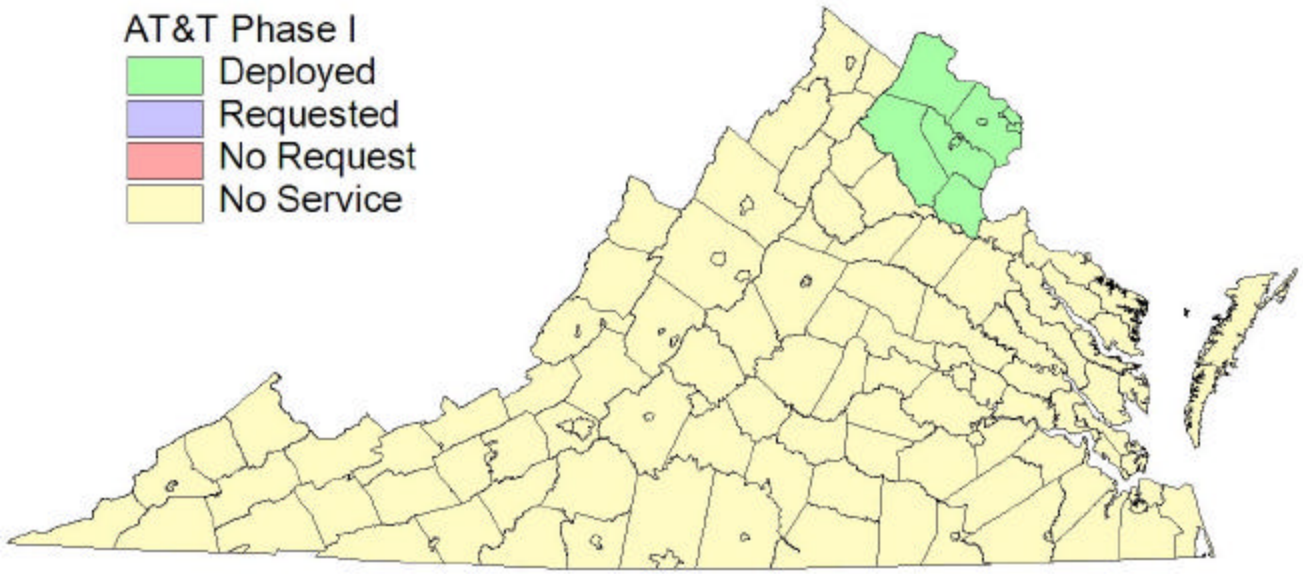

Figure 13 – AT&T Wireless Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

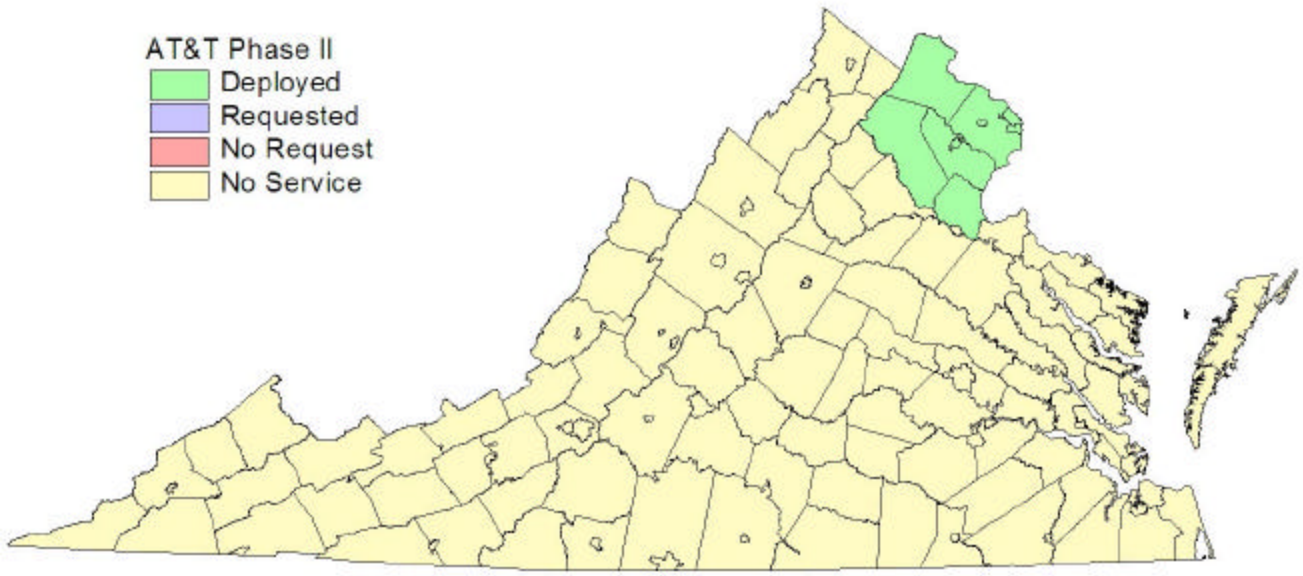

Figure 14 – AT&T Wireless Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

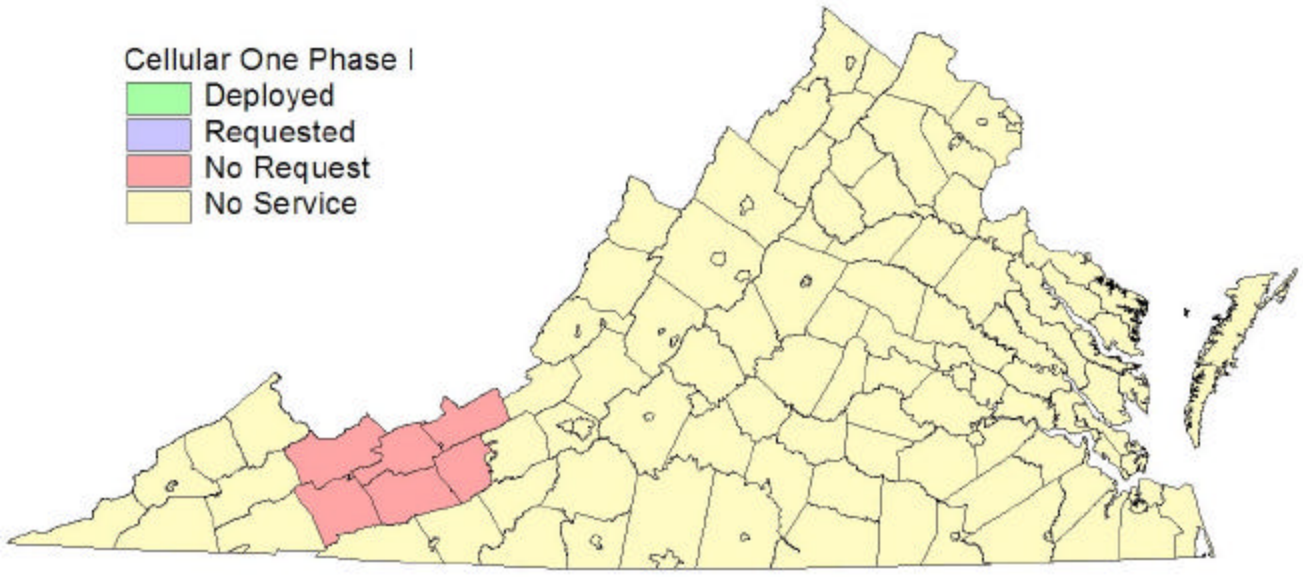

Figure 15 – CellularOne (Highland) Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

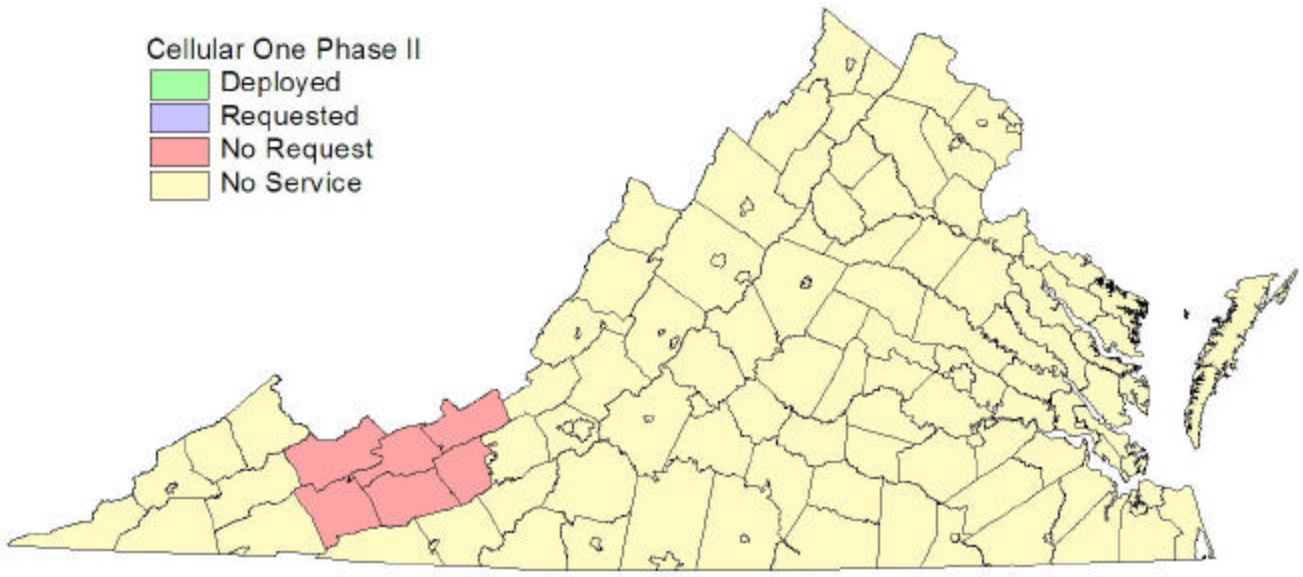

Figure 16 – Cellular One (Highland) Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

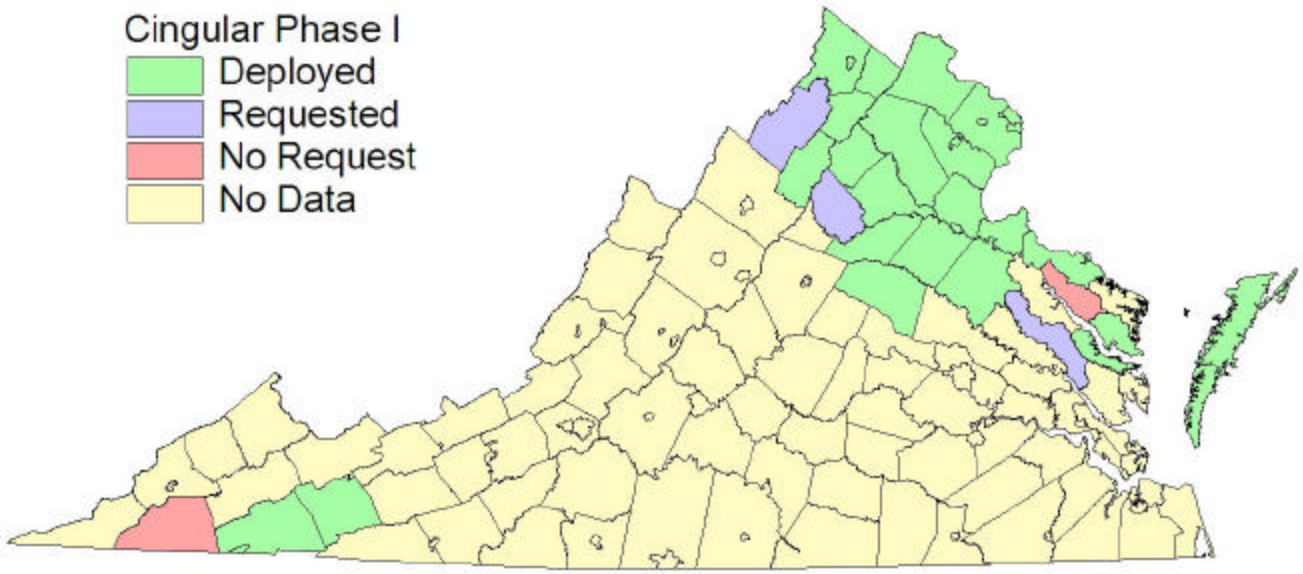

Figure 17 – Cingular Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

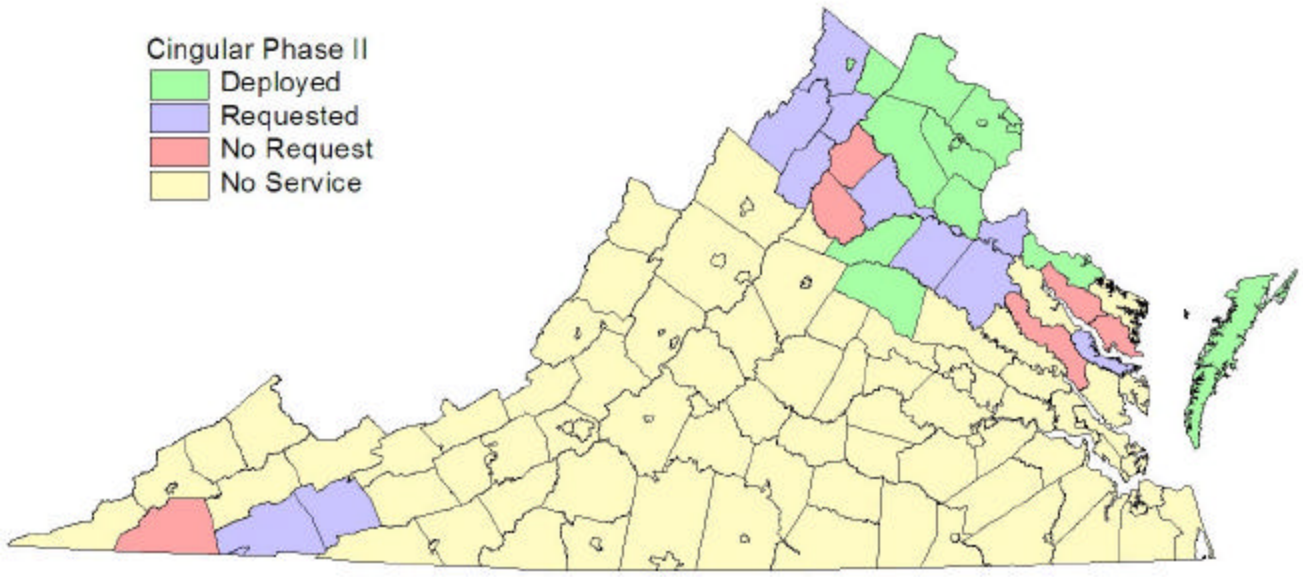

Figure 18 – Cingular Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

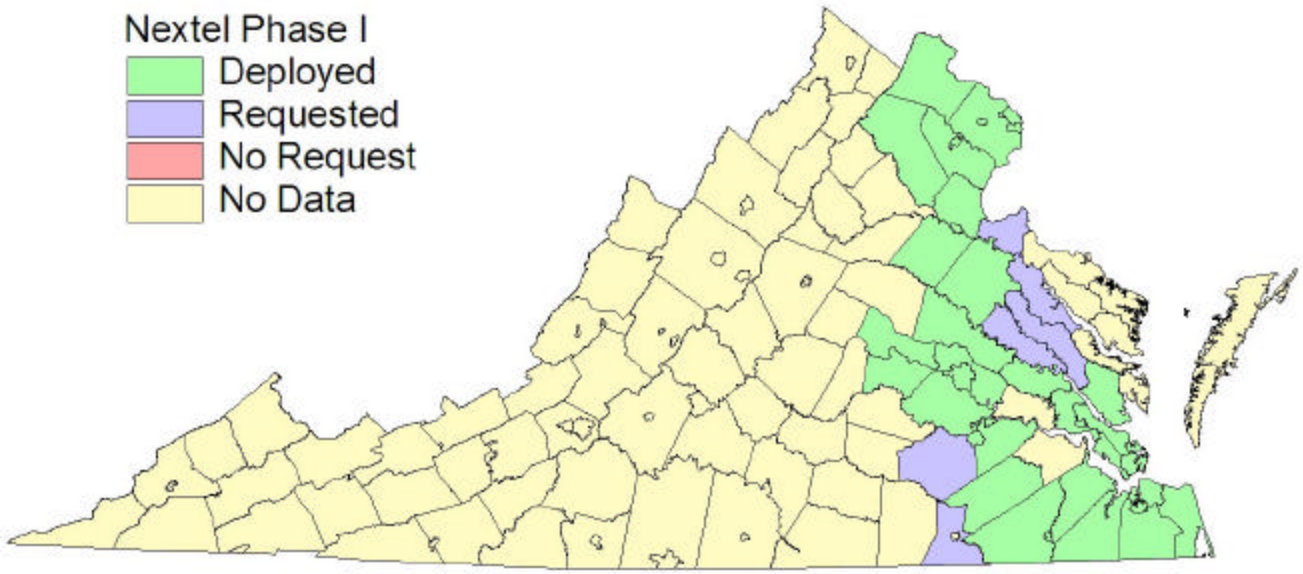

Figure 19 – Nextel Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

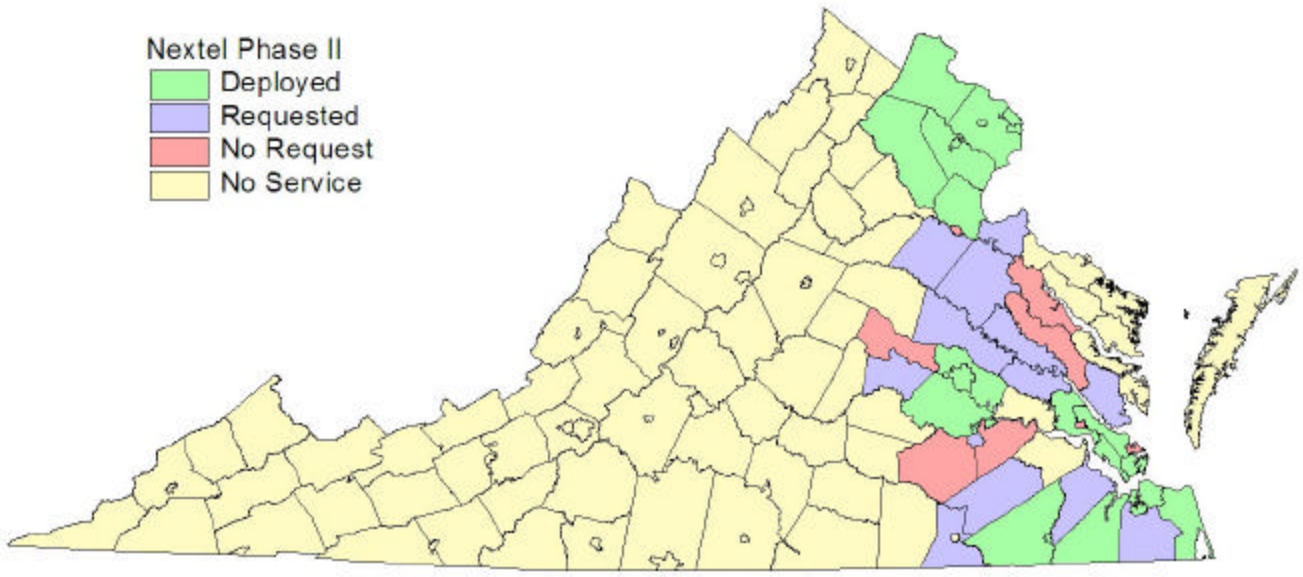

Figure 20 – Nextel Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

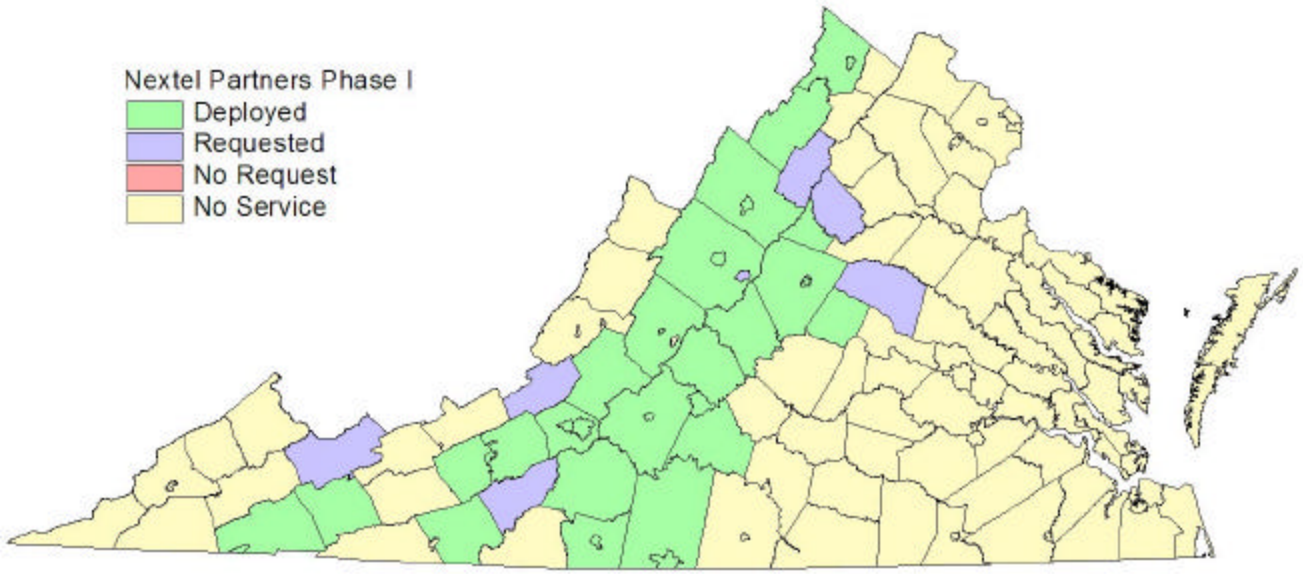

Figure 21 – Nextel Partners Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

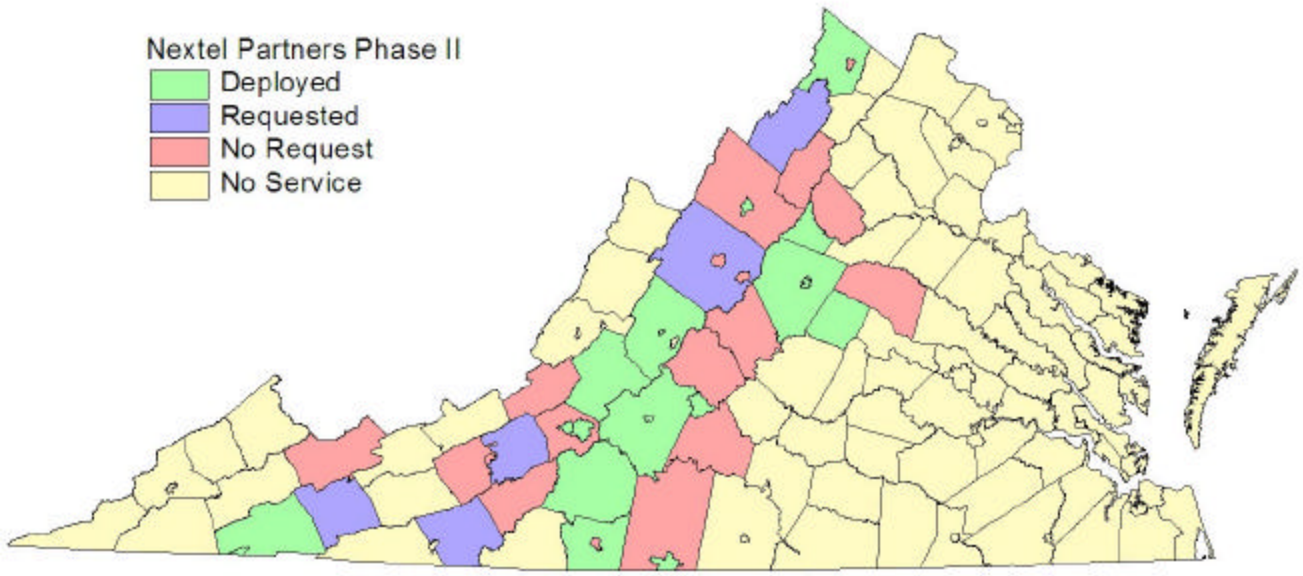

Figure 22 – Nextel Partners Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

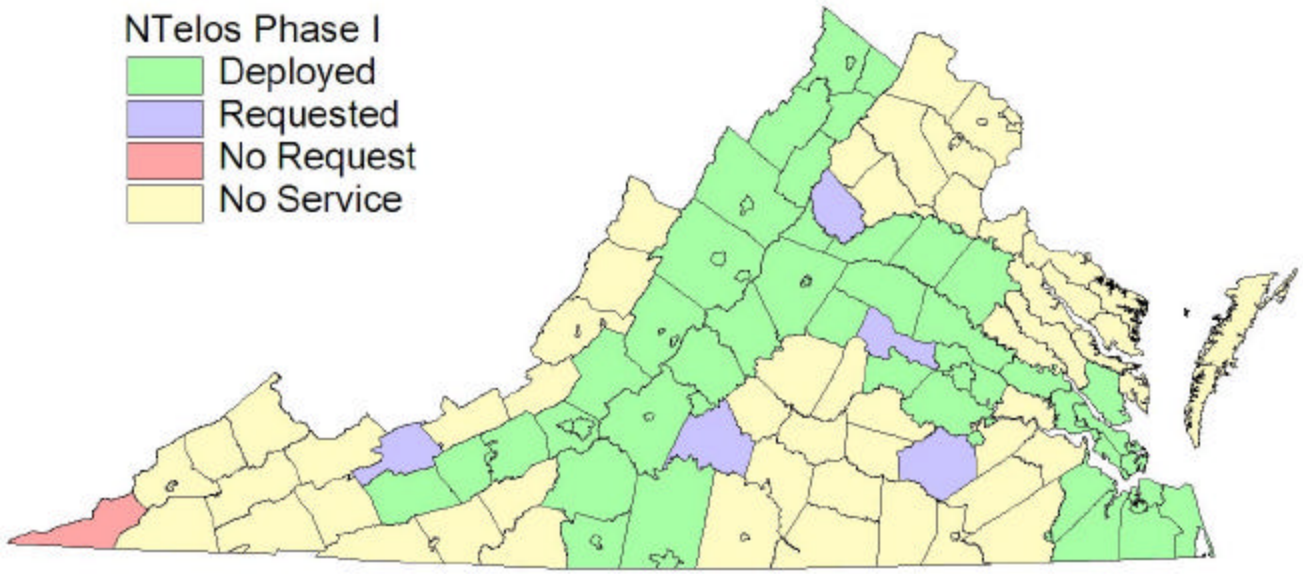

Figure 23 – nTelos Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

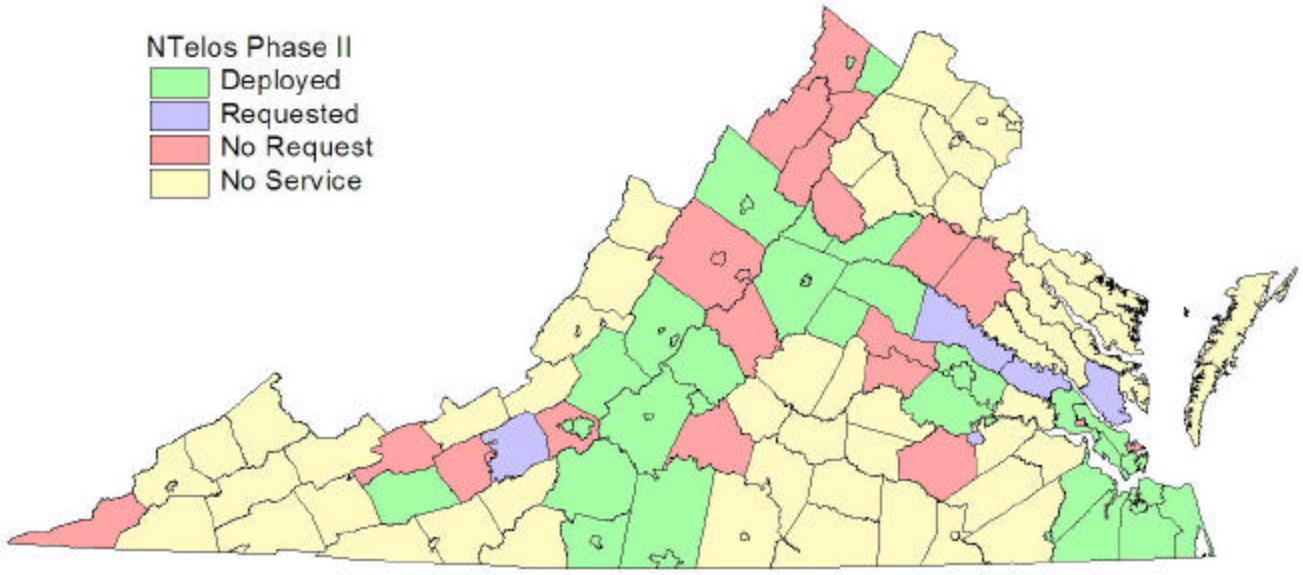

Figure 24 – nTelos Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

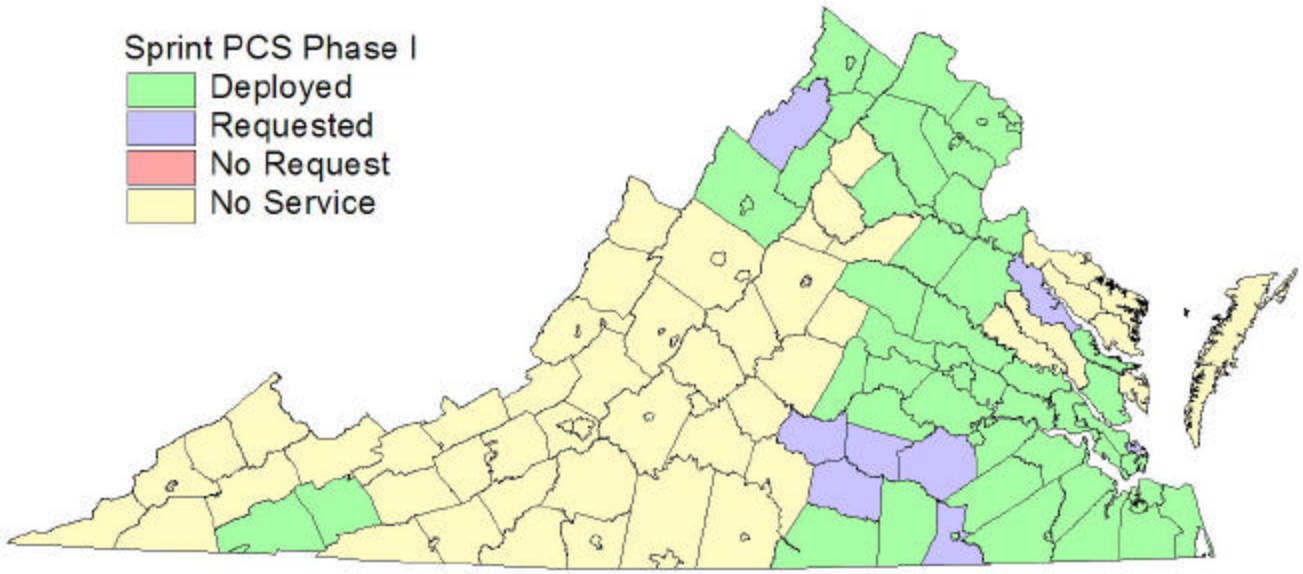

Figure 25 – Sprint PCS Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

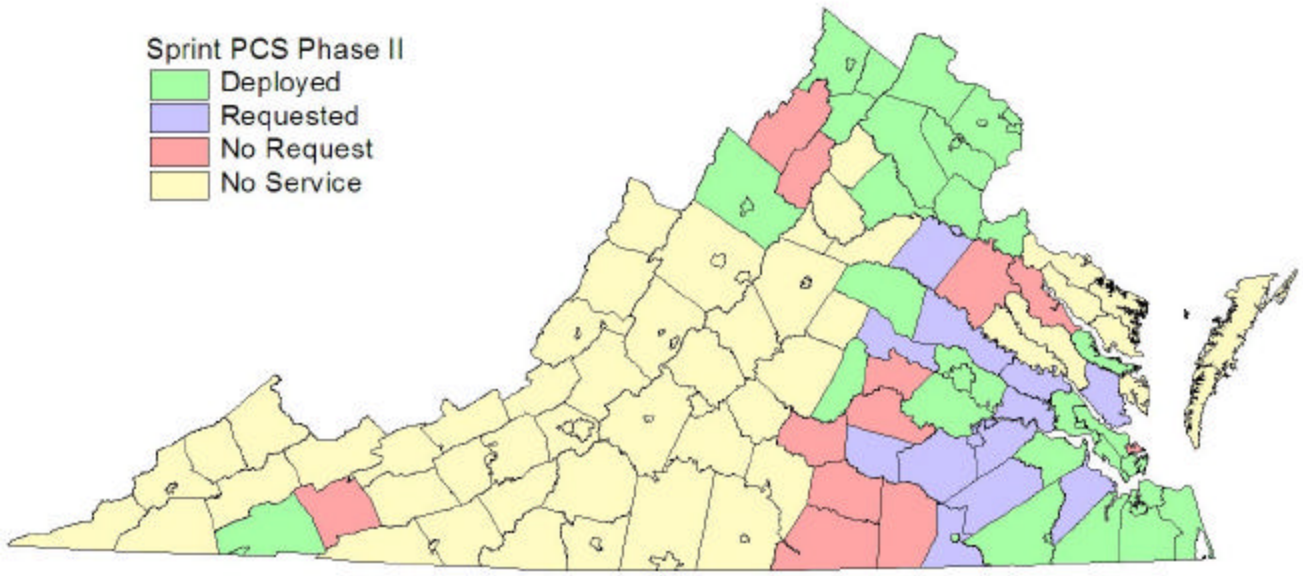

Figure 26 – Sprint PCS Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

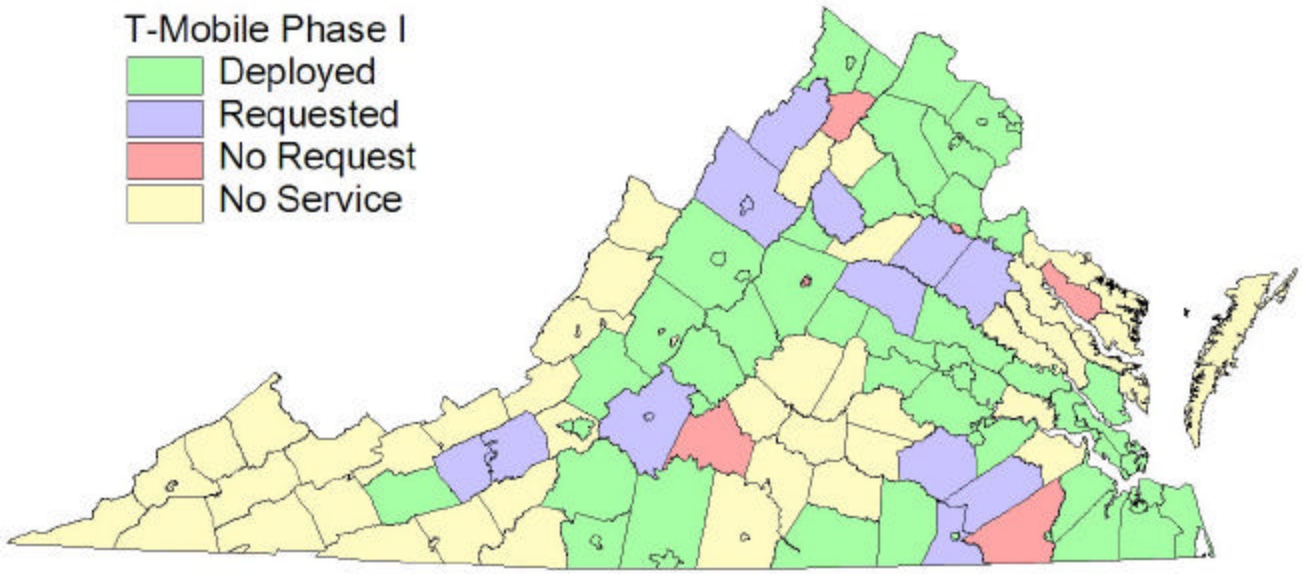

Figure 27 – T-Mobile Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

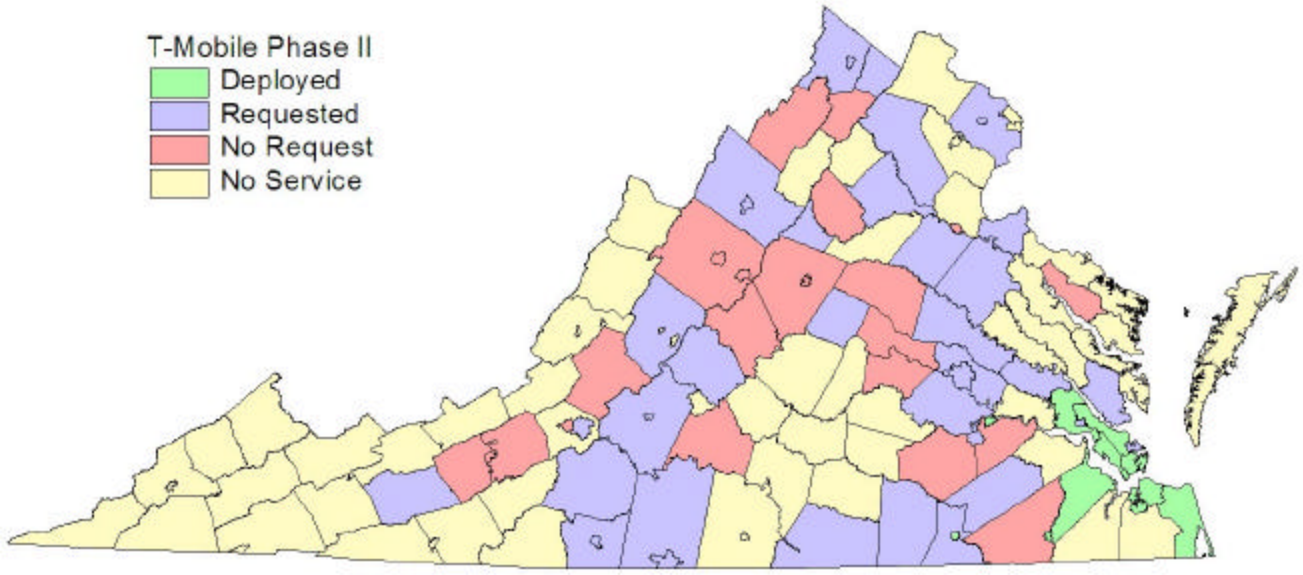

Figure 28 – T-Mobile Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

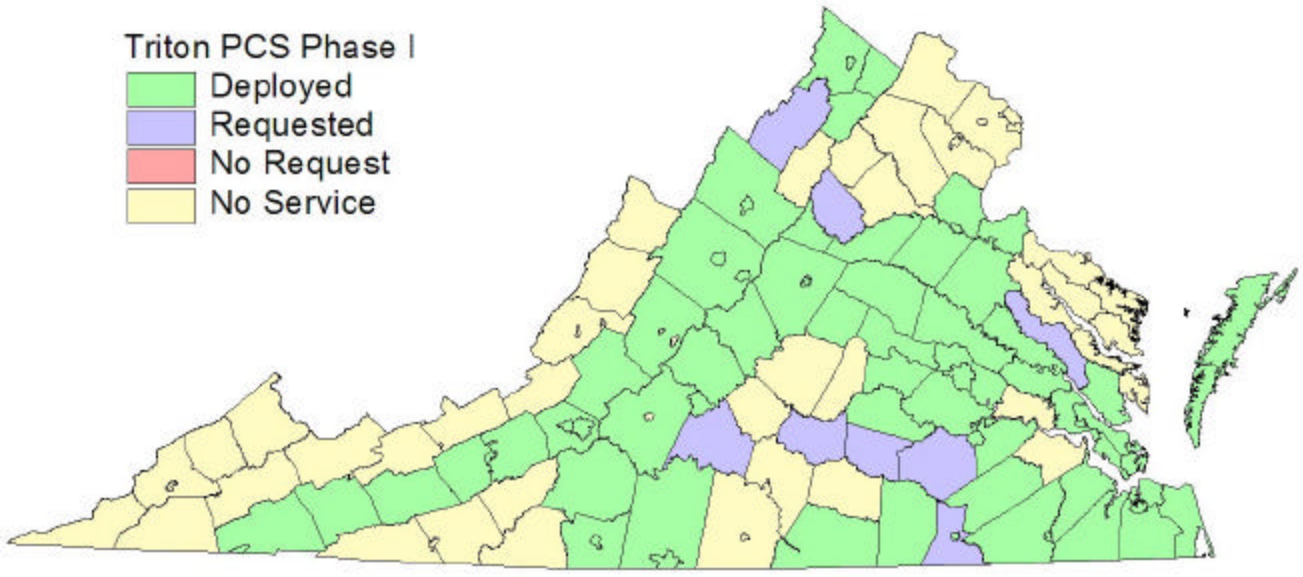

Figure 29 – Triton PCS (Suncom) Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

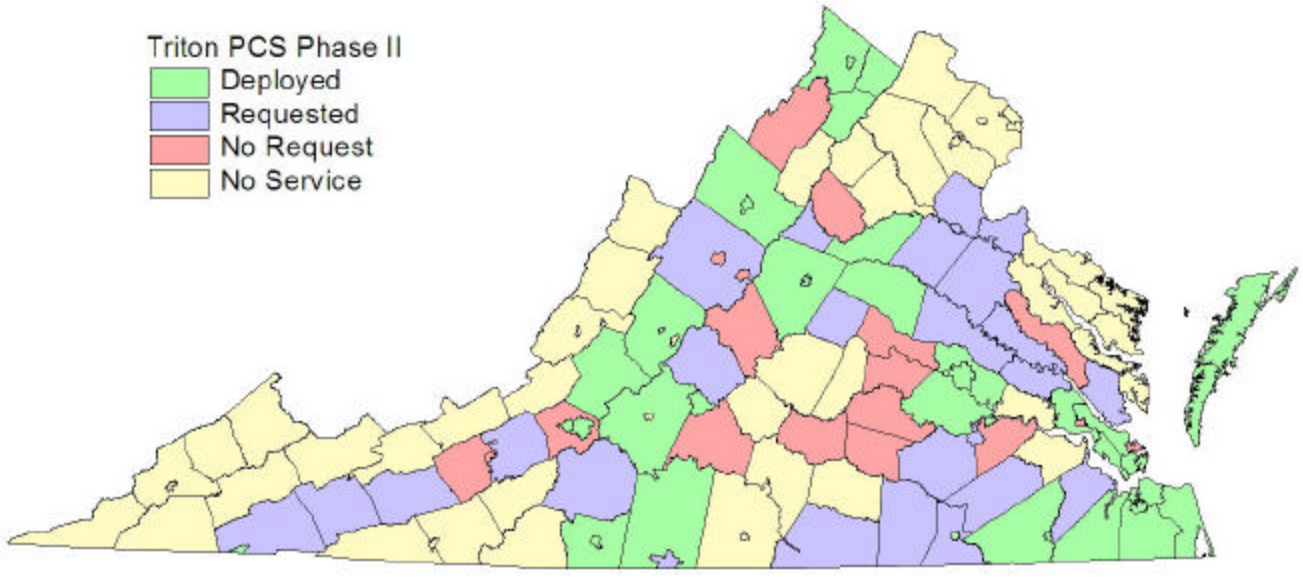

Figure 30 – Triton PCS (Suncom) Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

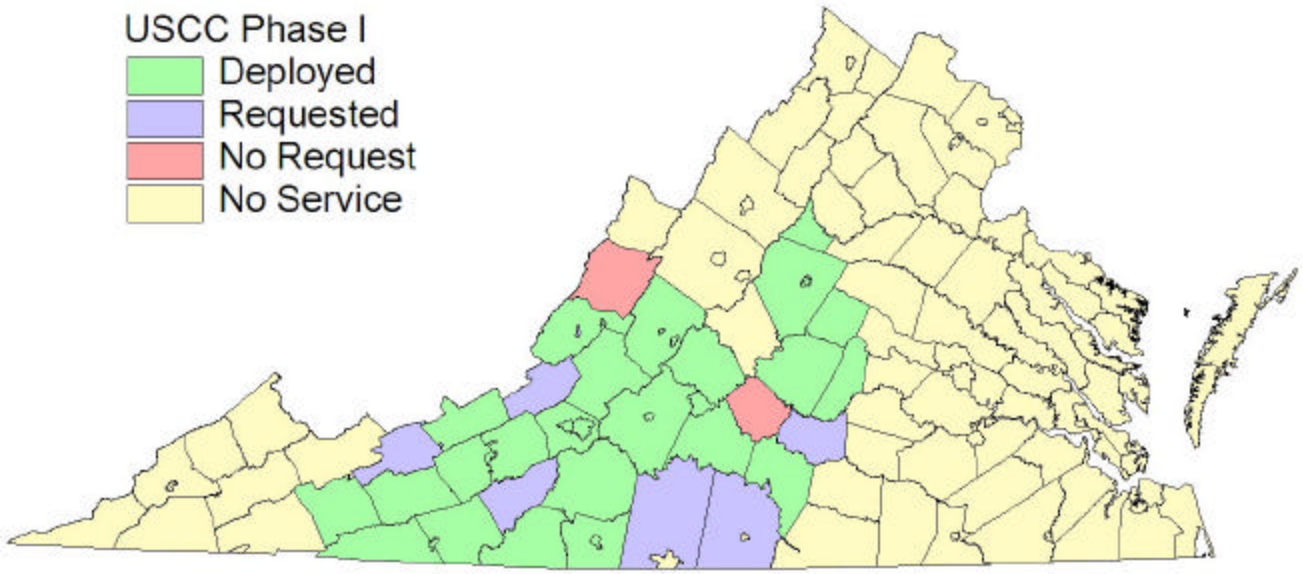

Figure 31 – U.S. Cellular Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

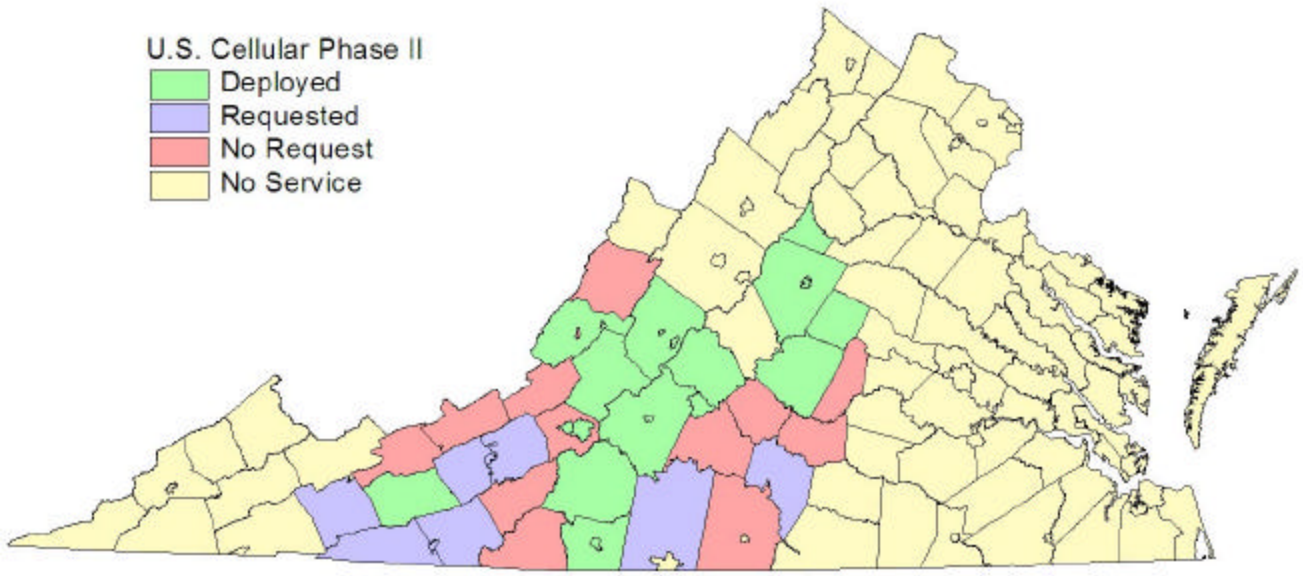

Figure 32 – U.S. Cellular Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

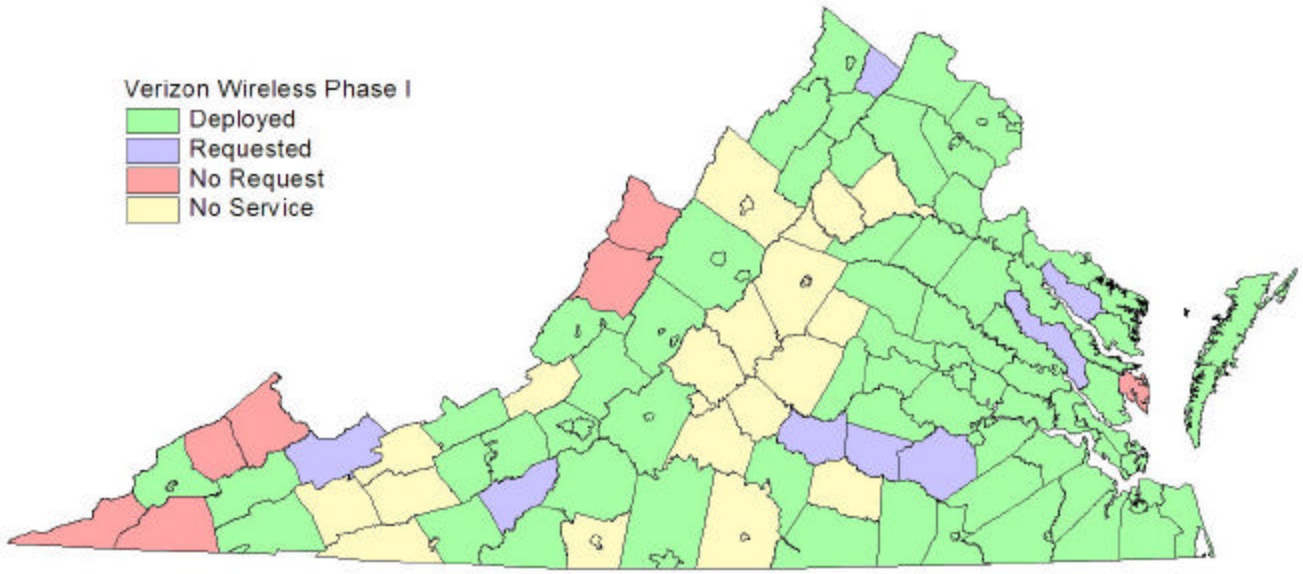

Figure 33 – Verizon Wireless Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

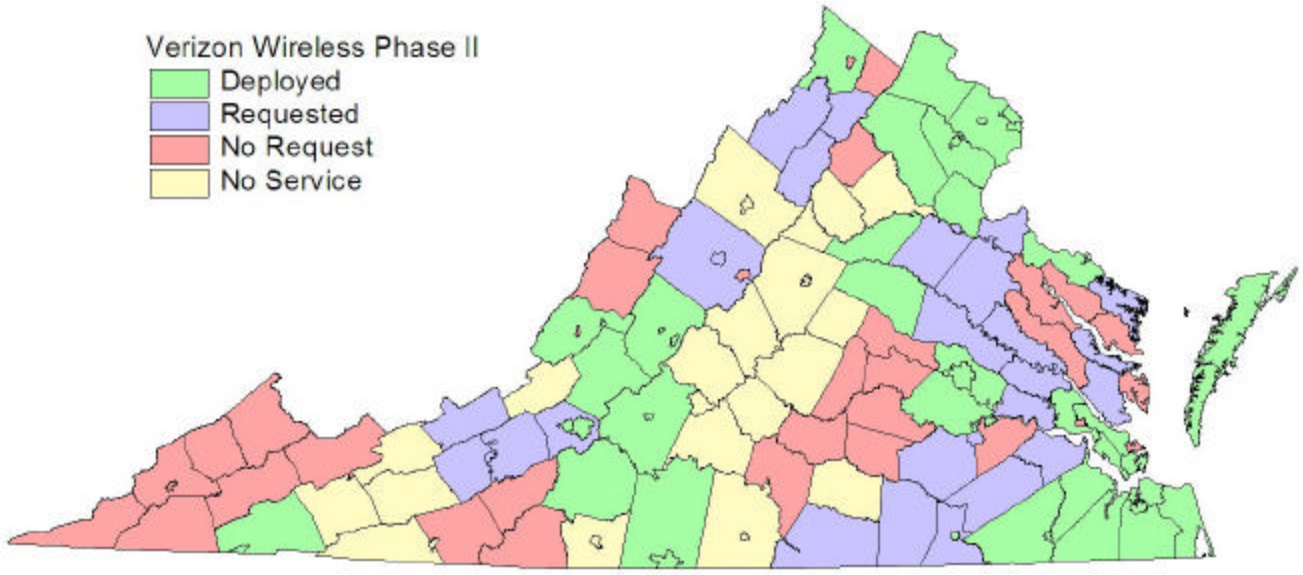

Figure 34 – Verizon Wireless Phase II Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

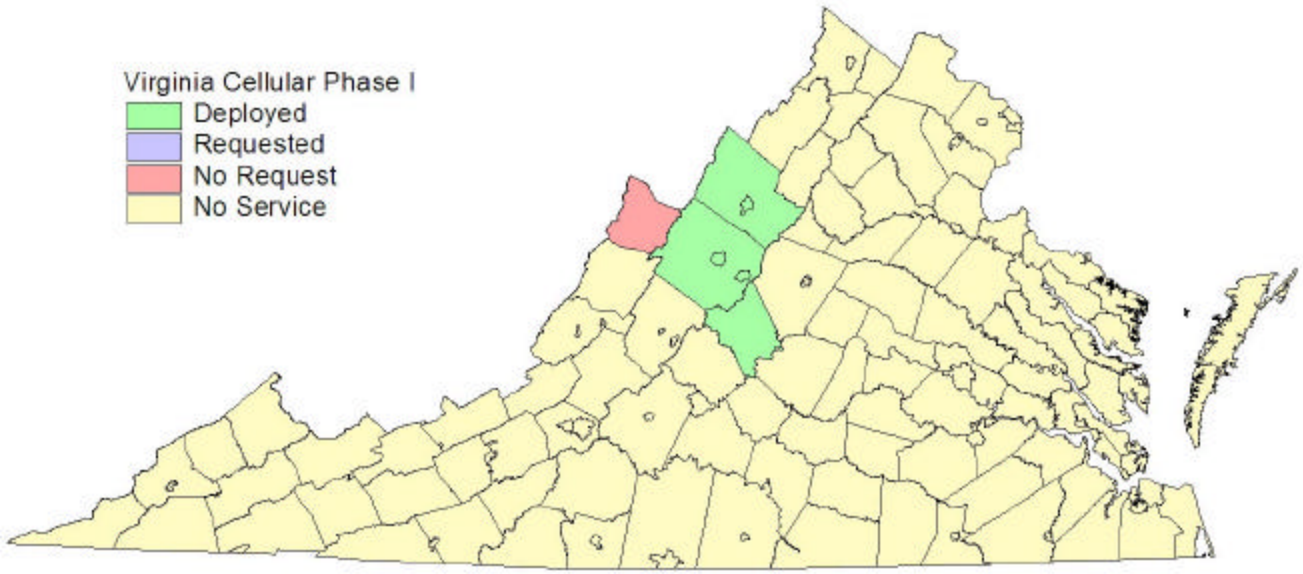

Figure 35 – Virginia Cellular Phase I Status

Deployed	Over 6 months	Under 6 months
63 Localities	0 Localities	5 Localities

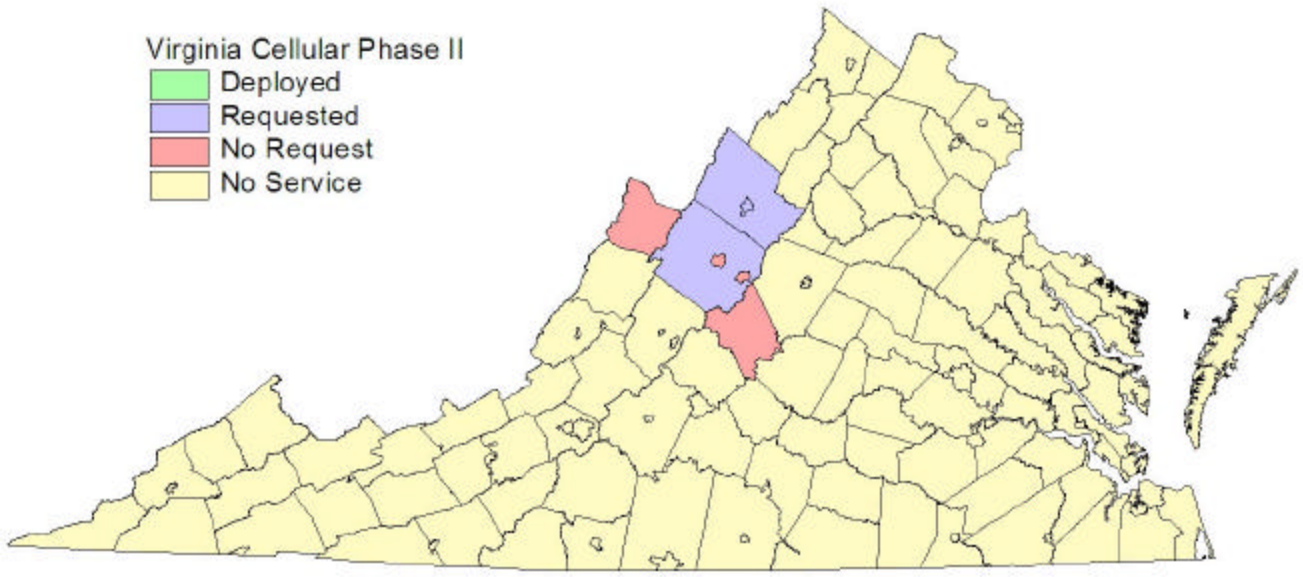

Figure 36 – Virginia Cellular Phase II Status

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.

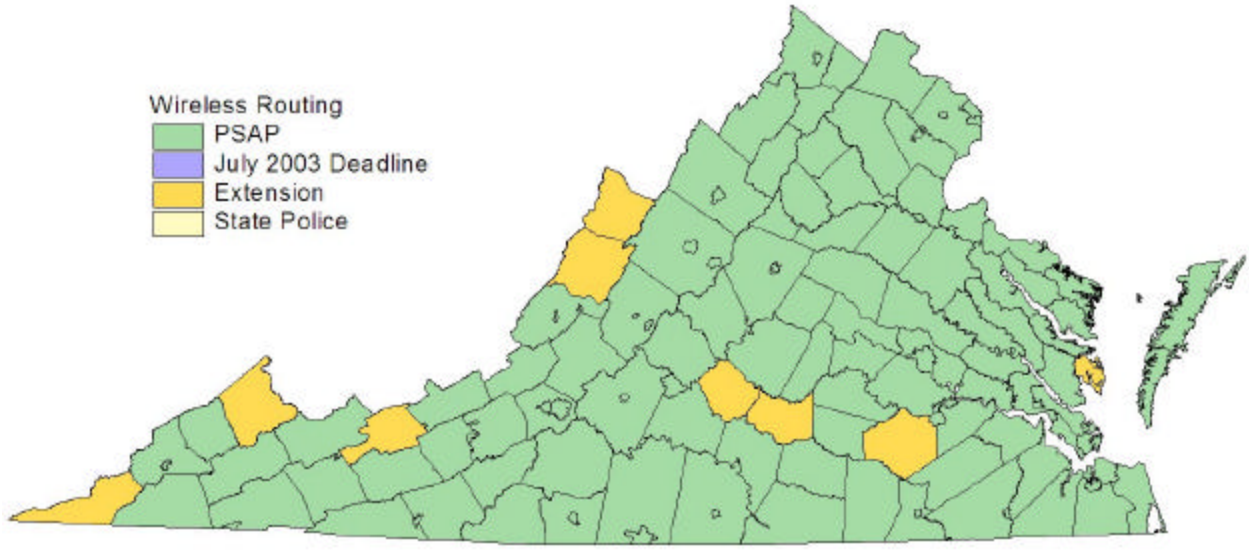

Figure 37 - Responsibility for Wireless 9-1-1

At the close of FY2003, 19 localities were still directing their wireless 9-1-1 calls through the State Police. At the close of FY2004, that number had been reduced to 9 localities (Figure 37). All 9 localities must complete deployment of wireline E-911 prior to proceeding with wireless.

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. All localities not wireline E-911 on July 1, 2000 are continuing to working on enhancement projects and remain committed to becoming enhanced. 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 911 database (explained below). The status of wireline E-911 implementation for the 37 jurisdictions eligible for funding is identified (Figure 38). From July 1, 2000 to July 1, 2004, twenty-two localities have implemented E-911 service bringing down the number of localities to 15 that need to implement during the next year (Figure 39). Many jurisdictions have finished all of the onsite work and are waiting on their local exchange carrier to verify their database.

With an unverified 911 database, the address information associated to a telephone service order does not verify as being valid when it is entered into the 911 database. Simply put, whatever location information is provided to the telephone company when the telephone service is ordered is

entered into the 9-1-1 database. In a typical enhanced 911 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 911 database should be considered true E-911 and decided it should not. This 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:

Appomattox County is working on the mapping and addressing portion of its wireline project. All of the proposed County road names have been approved and the street signs have been installed. The County has selected a location for its PSAP within the County's new courthouse complex. Once the PSAP is ready for occupancy, CPE equipment will be ordered and installed. The County has an extension granted by the Board until November 30, 2004.

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-9111
	= Basic 9-1-1
	= No 9-1-1

Figure 38 - Localities without E-911

Bath County has selected a mapping and addressing vendor and is working on addressing the County. The County had some initial concerns regarding local re-occurring 911 costs, but the County received the information it needed through its wireline project management firm, and decided to move forward with the wireline project. In addition to project management, Bath County has established a Coordinating Committee and also has appointed a local point of contact for the wireline E-911 project. The County has an extension until December 31, 2004.

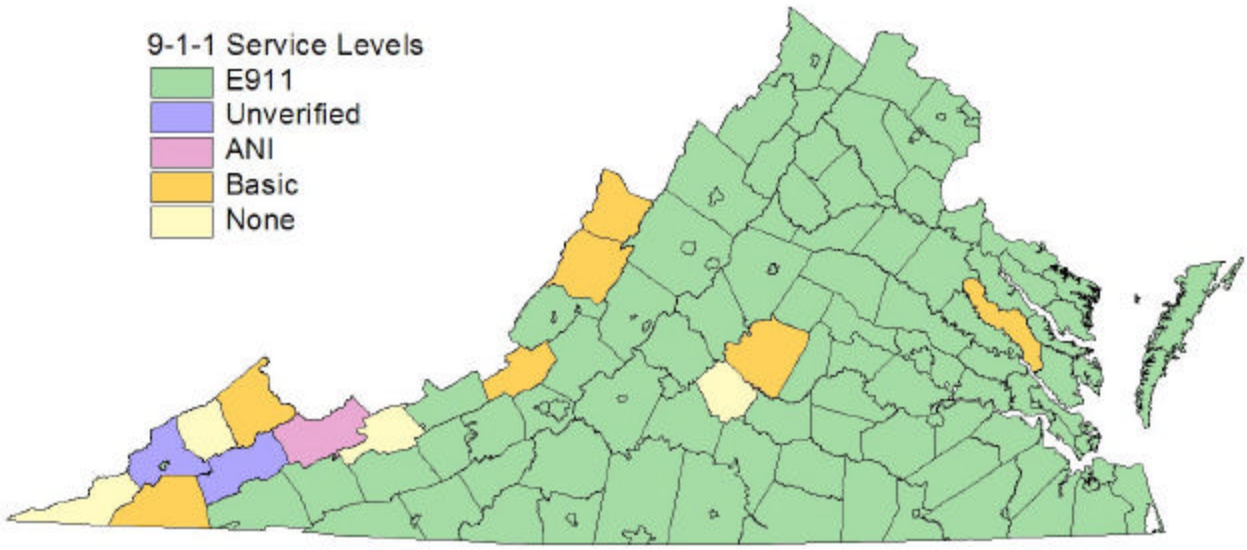

Figure 39 – Wireline E-911 Deployment Status

Bland County has completed the construction of the new County facility that will house the PSAP. The PSAP is operational and the CPE has been installed. The County's MSAG is complete and it has submitted its database to its LEC. The County is still waiting on the US. Postal Service to convert some addresses and when this occurs, the LEC will move forward with building the County's database and completing the enhancement process. The County has an extension granted by the Board until December 31, 2004.

Buchanan County did not even have basic 911 in July 1, 2000. They have since implemented basic service and are working on becoming enhanced. The mapping and addressing process was interrupted because of flooding that occurred in the County two years ago. One of the County's districts was flooded and it had to be completely re-addressed. Structures in the County have been assigned addresses, but the addresses have not been given out to the public. The County has completed road naming and the new road names have been added to the County's maps. The County has not yet started the verification process. However, the County has determined the location for its new PSAP and construction has begun. The County will be seeking wireline project management. The County has an extension granted by the Board until August 1, 2004.

Buckingham County is one of the counties that had an unverified 911database. 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 complete. The County will be ordering and installing new street signs and will be submitting the County's database to the LEC. The County has an extension granted by the Board until 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 completed assigning addresses to structures and will begin the verification process of these new addresses. The addressing and mapping vendor has delivered the completed MSAG to the locality. The County has received its new CPE and it is scheduled for installation in September. Other equipment is being installed in the PSAP currently, pushing back the install date for CPE. The County will request an extension until the end of this calendar year to complete the verification process and allow the LEC time to build the database and complete the enhancement process. The County had an extension granted by the Board until June 30, 2004 and will likely extend it.

Dickenson County is in the final stages of its wireline project. The County has submitted all of its addresses to the USPS and once the addresses have been converted, the LEC will complete the enhancement process. The County is receiving 911 calls on their 911 trunks with ANI. The County had an extension until January 1, 2004 and has not sought an extension since they are so close to full deployment.

Highland County is the third of the four localities that was offered 100% cost recovery by the Board for non-recurring wireline costs. Highland County is committed to becoming E-911. The County is working with a project management firm on their wireline project and will be selecting an addressing and mapping vendor from the responses of a recent RFP. The County created a road

naming committee that has named all of the County's unnamed public and private roads. The County has an extension granted by the Board until December 31, 2005.

King and Queen County has almost completed its verification process. The County has installed street signs and purchased CPE. The County is waiting on the LEC to install its CPE. Once the verification process is done, the County will submit its database to its LEC to complete the enhancement process. The County has an extension granted by the Board until December 31, 2004.

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 911. Lee County accepted the Board's offer for 100% non-recurring wireline funding, selected a project management firm, and is moving forward in the wireline enhancement process. The County recently selected an addressing and mapping vendor. The County has an extension granted by the Board until July 1, 2005.

Mathews County has completed the addressing portion of its wireline project. The MSAG is complete, the verification process is complete, and the CPE has been ordered. The County is waiting for construction on the new PSAP to be completed. Construction should be complete early fall and then the CPE can be installed. In the meantime, the LEC is building the database. The County has an extension granted by the Board until December 31, 2004.

Russell County is in the process of moving into a new PSAP. Construction is wrapping up and the PSAP is scheduled to be operational in September. The County's addressing and mapping vendor has delivered the final MSAG to the County and will deliver addresses to the USPS. The County will need to deliver its database to the LEC in order to complete the enhancement process. The County has an extension granted by the Board until March 31, 2005.

Scott County has deployed basic 9-1-1 and has selected an addressing and mapping vendor for their E-911 project. The County has completed 70% of the field verification work for county addresses. Road naming is complete on all of the public roads. The County will work with its project management firm to determine how it will handle CPE. The County has determined a site for its new PSAP facility. The County has an extension granted by the Board until June 30, 2005.

Tazewell County has almost completed its wireline project. The County has turned over its database to the LEC to complete the enhancement process. The County had an extension until December 31, 2003 and has not extended it since they are simply waiting for the LEC to complete deployment.

Wise County is still working on field verification to correct some previous erroneous addressing. The MSAG should be complete by the end of this calendar year. The County has purchased and installed CPE. The County will ask the Board for an extension until the spring of calendar year 2005. The County had an extension granted by the Board until December 31, 2003.

Wireline E-911 Funding

A total of $9.8 million was appropriated from the Wireless E-911 Fund to assist localities with the deployment of wireline E-911. The entire amount has been encumbered for wireline projects. The Board approved funding for all 37 jurisdictions that were not wireline E-911 as of July 1, 2000. To date, those jurisdictions have received $6.7 million in wireline payments from the Board.

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.

The remaining 15 localities that are not currently wireline E-911, did not implement by the July 1, 2003 deadline established in *Code*, and have requested extensions if they are anticipating additional wireline expenses. The Board has the authority to grant extension of time and has already done so for Appomattox, Bath, Bland, Buchanan, Highland, King and Queen, Lee, Mathews, Russell, Scott, Tazewell, and Wise Counties. The majority of the localities listed above anticipate being wireline E-911 before the end of FY 05. These localities are Appomattox, Bath, Bland, Buchanan, Buckingham, Craig, Dickenson, Highland, King and Queen, Mathews, and Tazewell. However, there will still be some localities that will need until FY 06 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 telephone 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.

Online Funding Application

The *Code* (§56-484.17) requires that PSAPs and wireless service providers must submit a funding request each year, which identifies the cost they expect during the coming fiscal year. From FY2000 to FY2004, these submissions were made using old-fashioned paper forms and a pen or pencil. Calculation errors, illegible handwriting and incorrect entries meant that Board staff needed over three months to review the 125 submissions that were received each year, which required a special meeting of the Board to meet the March 1 deadline for approval of the requests.

During FY2004 and in time for the FY2005 PSAP submission, which were due October 1, 2003, the Board implemented an online application for funding requests. The impact of the application was immediate. Though only 20-30% usage rate was expect for the first year, only 15 of the 125 requests submitted were made the old way. As a result, staff was able to review all 125 PSAP funding requests in time for the Board's January meeting.

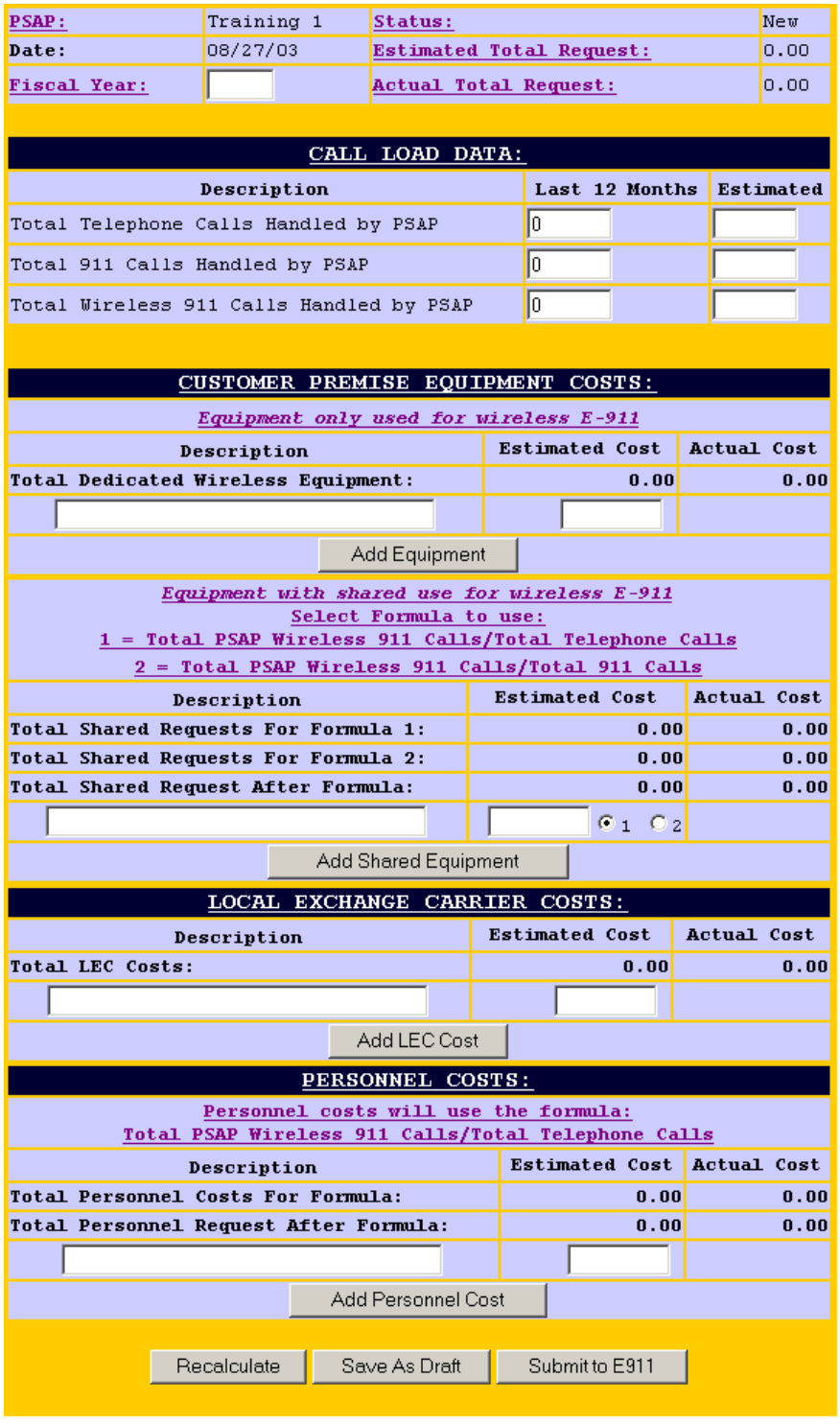

Figure 40 - Online Funding Form

Citizen and Public Education Survey

Survey Overview

One of the duties of the Board (§56-484.14) is to "take all steps necessary to inform the public of the use of the digits '9-1-1' as the designated emergency telephone number and the use of the digits '#-7-7' as a designated non-emergency telephone number." During FY2004, the Wireless E-911 Services Board conducted a citizen and PSAP survey to determine the level of public education necessary for wireline and wireless E-911 by identifying specific public educational E-911 needs and target audiences to satisfy the Board's legislative mandate.

The citizen survey was conducted in partnership with the Virginia Commonwealth University (VCU) Center for Public Policy. VCU staff developed the survey instrument and conducted the calls to Virginia citizens to ensure statistical validity. Many of the questions on the survey were modeled after a survey conducted by the National Emergency Number Association (NENA) so that comparison could be made with national averages. Additionally, the Commonwealth was broken into seven regions (Figure 41) with 400 calls being made in each region so that different regions could be compared.

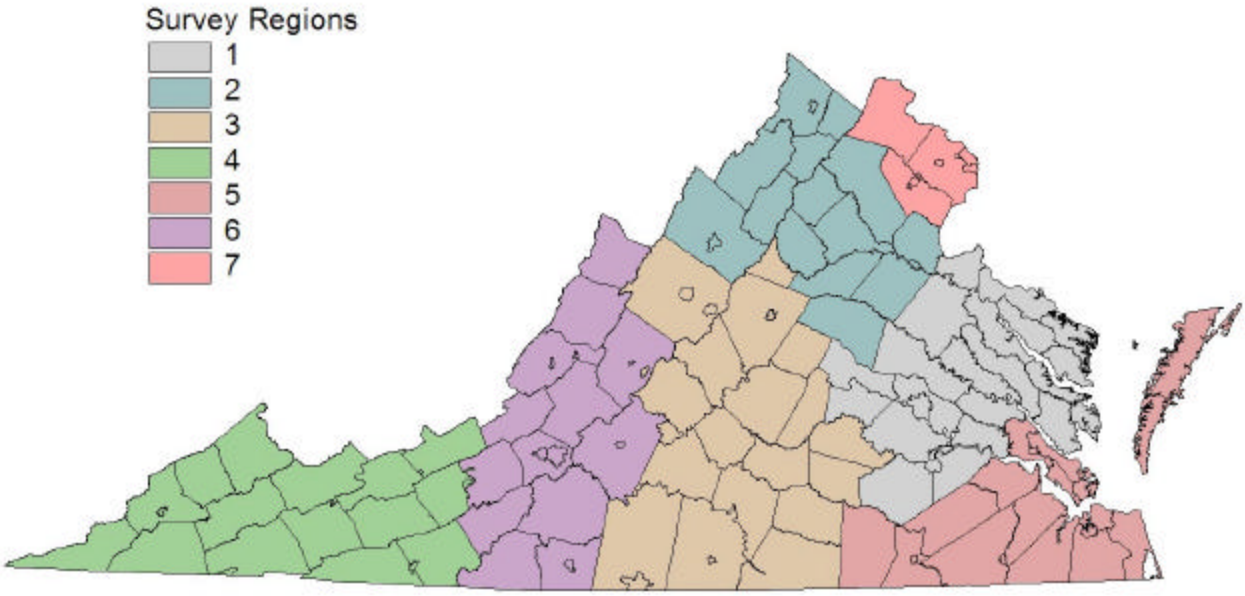

Figure 41 – Citizen Survey Regions

In addition to the citizen survey, on behalf of the Board, VITA Public Safety Communications staff conducted an online survey of all Virginia PSAPs to determine the current level of E-911 public education activities and to identify what local PSAP managers felt was needed to improve education.

Overview of Citizen Survey Findings

Question 1 - Have you ever called 9-1-1 with an emergency?

Nearly four in ten Virginians (39%) have called 9-1-1 with an emergency. This number represents a significant difference from NENA survey where almost 6 out 10 citizens have called 911 with an emergency. Virginians use 911 less than the national average. Furthermore, residents of survey area 4 were a bit less likely to have called 9-1-1 (29%). All other regions had a similar prevalence level.

Question 2 - (IF YES) The most recent time you made an emergency 9-1-1 call, what type of phone did you use—was it a wireline telephone, a cell phone or other wireless telephone, a pay phone, or some other type of phone?

Of those who have ever called 9-1-1, about one fifth (21%) used a wireless telephone during their most recent call to 9-1-1. Wireless owners were slightly more likely to have called 9-1-1 from a wireless phone (26% did so). The highest concentration of 9-1-1 calls from wireless phones was found in survey areas 2 and 3. These areas, for the most part, are not densely populated, but rather have either an interstate or major state highway, or both in their respective areas. Family income, education and age also played a role. There was a direct relationship between income and education and wireless phone usage. The greater an individual's income and education, the higher the percentage was for wireless phone usage. However, there was an inverse relationship between age and wireless phone usage. The greater an individual's age, the lower the percentage was for wireless phone usage.

Questions 3 - Overall, how would you rate the 9-1-1 emergency calling system in your community—excellent, very good, good, fair, or poor? or Overall, how would you rate the 9-1-1 emergency calling system in your community—excellent, good, average, below average, or poor?

Two versions of the question asking respondents to rate the 9-1-1 calling system in their community were randomly utilized. The two versions of the question had different response options to determine if wording made a difference. One set of response options was excellent, very good, good, fair, or poor. The second set of response options was excellent, good, average, below average or poor. This second set of response options was the same as those options used in the NENA survey. Respondents were more likely to give a more favorable rating (closer to excellent) in the second version of the question. Excellent and poor served as the anchor responses in both versions of the question. Response differences were more pronounced for the three middle categories, coinciding with the different labels for response options. The statistical significance test indicates that these differences are unlikely to have occurred by chance alone. Better than half of Virginians rate the 9-1-1 calling system in one of the top two categories. Those who have called 9-1-1 gave more favorable ratings than those with no experience having called 9-1-1. More than three quarters of those with experience calling 9-1-1 rated the system in one of the top two categories, slightly better than the 72% result reported by NENA. However, as income, education, and age for the respondents increase, the percentages for the top two categories decrease.

Question 4 and 5 - How confident are you that you would receive assistance in a short amount of time if you called 9-1-1 from your home telephone—very confident, somewhat confident, not too confident, or not at all confident? and How confident are you that you would receive assistance in a short amount of time if you called 9-1-1 from a cell phone or other wireless telephone—very confident, somewhat confident, not too confident, or not at all confident?

Public confidence that 9-1-1 calls would lead to assistance in a short amount of time was higher for calls from a home telephone than it was from a wireless phone. 67% were very confident about this when calling from a home telephone while 32% said that the same amount calls from a wireless telephone. However, project management area 4 had significantly less confidence only 54% of the respondents very confident that a 9-1-1 call from a wireline phone would lead to assistance in a short amount of time. The results of these questions indicate that there is awareness among Virginians for the difference between wireline and wireless telephony. Virginians understand that currently there are technology limitations with wireless telephony that may impact emergency response time. This understanding is substantiated by the results of questions 7 and 8. The confidence level for receiving assistance when using a wireless phone for 9-1-1 could be improved by educating Virginians on how they can help shorten the response time for service when using a wireless phone. This would be especially helpful with Virginians 65 or older since they have the lowest confidence level considering responses of "very confident" and "somewhat confident."

Question 6 - In general, do you think the amount of time it takes to receive assistance after emergency 9-1-1 calls are made from cell phones or other wireless telephones will be shorter, longer, or about the same as it is for calls made from wireline telephones?

More than half of Virginians expect the amount of time it takes to receive emergency assistance will be the same for wireless and wireline telephone calls to 9-1-1. This figure demonstrates that Virginians have confidence in wireless telephony. However, there may be a lack of awareness among Virginians that the level of service for wireless calls is not uniform throughout the State. Differences exist as to the type of wireless E-911 service, phase 0, phase 1, or phase 2, that is available from wireless carriers that operate in Virginia. 28% think assistance will take longer from wireless telephones while just 5% think assistance will take longer from wireline telephones.

Questions 7 and 8 - When you call 9-1-1 from your home telephone, do you believe that the 9-1-1 operator can automatically identify your address or location OR that you need to provide your address or location to the operator? and When you call 9-1-1 from a cell phone or other wireless telephone, do you believe that the 9-1-1 operator can automatically identify your address or location OR that you need to provide your address or location to the operator?

About seven in ten Virginians (73%) are aware that 9-1-1 calls from a home telephone can automatically identify a location. This figure is lower than the Harris Interactive national survey for NENA that identified that 94% of respondents were confident that location information was automatically available when they make a 9-1-1 call from their home phone. The lower results for Virginia may be due to the fact that wireline E-911 deployments are still underway and that ALI is not available throughout the State. This may also explain that only 60% of the respondents for survey area 4 believe location can be automatically identified with wireline 9-1-1 calls. Similarly, 71% of Virginians are aware that wireless callers to 9-1-1 (currently) need to provide an address or location to the operator. However, age is a factor for the awareness and understanding of ALI. 12% of Virginians 65 or older don't know if an operator has ALI with a 9-1-1 call from a home (wireline) telephone. This percentage climbs to 28% for wireless 9-1-1 calls.

Questions 9 and 10 - If you had an emergency while driving on the Virginia highways what number would you call for assistance? and If you had an accident while driving on the Virginia highways that was NOT an emergency, what number would you call for assistance?

69% of Virginians say that they would call 9-1-1 if they had an emergency while driving on Virginia's highways. Greater uncertainty about where to call for help occurs when the situation is not an emergency. In this case, 28% would call 9-1-1 for a non-emergency situation while driving on Virginia highways and 19% do not know whom they might call in that situation. Obviously, in the case of non-emergencies, there is an opportunity to educate Virginians as to what resources are available to them in non-emergency situations.

Question 11 - Next, I'm going to describe a situation to you and ask you to identify whether that situation would be an emergency or not an emergency: a fire in an apartment building with flames showing on the outside of the building; a fender bender where the drivers seem shaken but not seriously hurt; an accident that left a person bleeding heavily; and a house burglary where the burglars are no longer in the home?

Asked to recognize 2 emergency situations and 2 non-emergency situations, Virginians were very accurate in recognizing emergency situations while more confusion seemed to occur when it came to non-emergency situations. 43% considered "a house burglary where the burglars are no longer in the home" an emergency situation while 55% correctly classified this as a non-emergency. 23% considered "a fender bender where the drivers seem shaken but not seriously hurt" an emergency while 74% correctly classified this as a non-emergency. By contrast, 99% of Virginians correctly classified the two emergency situations. The inability, in some cases, to distinguish between an emergency and a non-emergency situation, strengthens the argument that there is an opportunity to educate Virginians about non-emergencies and available resources. The results of questions 12 through 16 validate this point.

Question 12 - If you needed to call your local police or sheriff's office for a non-emergency situation, how would you find the telephone number to call?

20% of the respondents from project management area 4 either have the non-emergency numbers for the local police or sheriff's department by their phone or know it by heart. Many localities in this area have been without any form of 9-1-1 and know how to reach the police or sheriff department directly. This is not the case for the majority of residents for the state who would need to locate this information.

Questions 13 and 14 - Have you ever seen the blue road signs on Virginia highways that say to dial cellular pound-7-7 (#77) for state police? and Have you ever called the pound-7-7 (#77) number for assistance?

Better than eight in ten (82%) recognize the state highway #77 signs though only 8% have ever called #77 for assistance on the highways.

Questions 15 and 16 - Do you happen to have a cell phone or other wireless telephone, or not? and Do you typically have a cell phone or other wireless telephone available to you while driving, or not?

Seven in ten Virginians report having a wireless telephone. Wireless penetration is highest in project management area 7 (79%) and lowest in area 4 (54%). The majority of individuals who have a wireless phone also have it with them while they are driving.

Overview of PSAP Survey Findings

Question 1 - Does your PSAP have an established 911 public education program?

The majority of PSAPs (87%) do not have an established 9-1-1 public education program. However, some of these PSAPs do have an informal approach to public education by providing speakers to meetings of local clubs and organizations and tours for school groups. Some PSAPs work in tandem with local law enforcement agencies, relying on the law enforcement agency to provide 9-1-1 public education.

Question 2 - If yes, how is the program funded?

The majority of the funding for 9-1-1 public education is internal either to the agency or locality. Only one agency has extraneous funding.

Questions 3 and 4 - If no, are there plans to establish a 911 public education program through your PSAP? and Is lack of funding the reason why you do not have a public education program?

Most of the PSAPs without a 9-1-1 public education program (84%) do not have plans to establish one. Funding would only encourage about a third of these PSAPs to move forward in establishing a 9-1-1 public education program.

Question 5 - The Committee has identified the following groups as potential target audiences for 911 public educational programming efforts. From the following list, please identify the top three groups needing 911 public education in your community: Pre-school/Kindergarten; Middle School; Junior/High School; Senior Citizens; Commuters; Travelers/Visitors; Minority Populations (specify); and Non-English speaking (specify).

The top three target audiences for 9-1-1 public education was identified as senior citizens (27%), pre-school/kindergarten (26%), and middle school (17%). These categories should not come as a surprise, however, what is noteworthy is that the next most popular target audience (12%) is non-English speaking/minority populations.

Question 6 - Which of the following instructional supplies for 911 public educational programming do you find useful? Coloring Books; Posters; Magnets; Stickers; Pens/Pencils; and Other (specify)

The consensus of the PSAPs surveyed was that they would take any type of instructional supplies that was made available to them, but the three most popular items were coloring books, stickers, and magnets. Each item corresponds to a different target audience (Coloring books for pre-school/kindergarten; stickers for middle school; and magnets for seniors for their refrigerators).

Question 7 - Does your PSAP utilize simulation exercises in its public education program to educate specific groups, such as pre-school age children, on the proper use of 911?

The majority of PSAPs (72%) do not have any type of simulation exercises. Those that said they did, for the most part, were not using an automated system, but were utilizing role paying as the educational technique.

Question 8 - Would media collateral, such as PSAs or videos, with a general message regarding the proper use of 911, benefit your PSAP, if the collateral could be customized to address the educational needs of specific groups within the community?

84% of PSAPs surveyed said they would find a PSA or video that could be customized by the locality useful.

Question 9 - Does your PSAP provide any type of public education targeted specifically to wireless E-911? If so, please describe in detail.

PSAPs recognize the need for wireless E-911 public education programming. There is strong public interest in many localities and a desire on the part of PSAPs to make something available, but there is uncertainty on how to proceed.

Question 10 - Please provide any additional comments that you think might be useful to the Committee in conducting a needs analysis for public education for wireless 911 in Virginia.

The most frequent response cited was the lack of personnel available for 9-1-1 public education in the PSAP.

Objectives for Public Education

As a result of the survey, the following objectives were developed for future public education activities:

1. Analyze why Virginia's utilization of 911 is less than the national average by identifying the demographic drivers that impact utilization by region and also by comparing the call load data for emergency and non-emergency calls by the same regions. It may be that Virginians have fewer emergencies than residents of other states. Or it may that some Virginians are reporting emergencies by calling a non-emergency number rather than 911 and it is an educational issue. The market research survey indicated that Virginians recognize emergency situations, but depending on demographics, some Virginians are less likely to call 911 to report emergencies.

2. Evaluate the correctness of the perception of Virginians that location information is available when they place either a wireline or wireless 911 call. E-911 for both wireline and wireless is not available throughout the entire State. Areas of discrepancies would be the focus of 911 public educational programming

3. Identify all 911 public education stakeholders. Consider resources and needs of stakeholder groups in developing a formal implementation plan for 911 public education. Stakeholders are not limited to the State of Virginia. There must be an awareness of 911 public educational trends on a national level.

4. Design a qualifying process for public education funding for PSAPs to ensure that funding is available to those PSAPs that have developed a public educational plan. The educational plan should include goals, objectives, and implementation strategies. Funding would be made available to either individual PSAPs or to regional PSAP groups.

5. Develop an educational guide that would be adaptable to the regional fluctuations of income levels, completed education, and age of residents. The use of wireline and wireless phones, confidence in responsiveness of emergency services, and knowledge of wireline and wireless telephony is differentiated across income, education, and age.

6. Create lesson plans that will educate Virginians on how to differentiate between emergency and non-emergency situations. Identify the resources that are available to Virginians in emergency and non-emergency situations and instill in them the knowledge to be able to differentiate between the two situations. The utilization of #77 can be a useful tool in educating Virginians about non-emergency situations.

7. Require a quantifiable evaluative process for PSAPs to complete in order to validate their 911 public education progress and successes.

Public Education Implementation Steps

The following implementation steps were developed as a guide for Board and staff activity with regards to public education:

1. Formulate a multi-faceted strategic approach to implementing a public education program in Virginia for wireline and wireless E-911 that considers the level of interest, desire to participate, and financial ability of Virginia PSAPs.

2. Broaden participation in the existing Wireless Board's 911 Public Education Subcommittee to allow for representation of all 911 public education stakeholders.

3. Build partnerships with national organizations such as the Association of Public-safety Communications Officials (APCO), NENA, and the National Association of State 9-1-1 Administrators (NASNA) that have involvement in 9-1-1 public educational issues.

4. Expand the existing Public Safety Communications Division website to include 9-1-1 public educational programming information. This information would be accessed through a link to a specific 9-1-1 public education website that would provides individuals with a 9-1-1 public educational guide and prepared lesson plans for specific 9-1-1 public educational issues.

5. Create the guidelines for PSAPs to request funding for 9-1-1 public educational initiatives. PSAPs would have the option of working alone or as part of a regional effort. The Board approved funding guidelines for PSAPs at their March 2004 meeting.

6. Establish a list of tentative projects based on specific demographic needs identified through the market research and web-based surveys. A preliminary list of tentative projects for 9-1-1 public educational initiatives would focus on seniors, Southwest Virginia, and minorities/non-English speaking Virginians. The list of projects would be refined as more demographic analysis is conducted. In March 2004, the Board approved $27,500 for a 9-1-1 public education project targeting Southwest Virginia.

7. Coordinate a centralized ordering approach for Virginia PSAPs for the most popular instructional aids identified through the PSAP Survey. These items would be available to

PSAP managers at no cost. Board staff would monitor the procurement and ordering process.

8. Design a wireless brochure for distribution by wireless carriers that serve Virginia to address specific issues related to wireless E-911. An example of a specific wireless public educational issue would be unintentional 9-1-1 calls.

9. Facilitate the creation of a public education video for 9-1-1 that would be made available to all VA PSAPs. This video would contain a standardized message and would serve to supplement the PSAPs' own public educational efforts.

Conclusion

The Wireless E-911 Services Board continues to be effective in their role of promoting and assisting with wireless E-911 deployment. As a result, Virginia continues to be a nationally recognized leader in E-911. While the current legislation has served the Board well since its passage in 2000, change is necessary to address several issues that have been recently identified.

The implementation of wireless enhanced 9-1-1 is progressing very well. Over 95% of all wireless telephone service subscribers now have Phase I service, which provides the caller's telephone number and the address of the cell site processing the call. Approximately 80% have access to Phase II service, which provides the longitude and latitude of the caller. Though many will need to upgrade their telephone handsets to take advantage of the Phase II service, the infrastructure is in place at the PSAP and within the wireless network to process the call. Beginning with Orange County and the City of Hampton, a total of 47 PSAPs have now completed deployment of Phase II with all of the wireless service providers in their area.

The amount of the wireless surcharge can be reduced to $0.65 in FY2006 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 budget reductions last biennium and remaining projects will likely eliminate most of the fund balance by the end of the current biennium.

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. Though some of the localities did not implement E-911 by the July 1, 2003 deadline established in *Code*, all are working toward full deployment of their E-911 system.