



# Enhanced 9-1-1 Status Report



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## **Introduction**

During the 2000 Session, the General Assembly appropriated \$1.4 million in the second year of the biennium budget to assist localities with the provision of enhanced 9-1-1 services. To qualify for funding the localities must be “making a good-faith effort to develop E-911 wireline emergency telephone services, but have a demonstrated financial need for state assistance.” Section 56-484.14 of the *Code of Virginia* authorizes the Wireless E-911 Services Board to disburse these funds “only in specific local jurisdictions that are not wireline E-911 capable as of July 1, 2000”.

Item 465 of the 2000 Appropriation Act requires the Department of Technology Planning to produce a status report regarding statewide wireline enhanced 9-1-1. This document constitutes that status report.

As of July 1, 2000, there were 23 jurisdictions (Figure 1) that did not provide enhanced 9-1-1 service; however, five of those jurisdictions, Essex, Lunenburg, Nelson, Tazwell, and Westmoreland Counties, have or will be implemented by the end of 2000. In addition to these jurisdictions, there are nine more that provide a form of enhanced 9-1-1 that may not be considered as truly enhanced. In these jurisdictions the enhanced 9-1-1 equipment exists, but the location information displayed to the call taker is rural route information or directions and not a street address that has been validated or “scrubbed”. This may have originally been done as a cost saving measure, as it does not require the locality to map or address the jurisdiction. The jurisdiction may need to assign street addresses to the structures throughout the locality in order to become fully enhanced.

## **Localities without Enhanced 9-1-1**

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 jurisdiction, 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 jurisdiction. 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 \$275,000 depending on the size of the jurisdiction. The Board is investigating whether executing regional contracts for mapping services would reduce the cost of this process.

The second process is the network and equipment process. 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 public safety answering point (PSAP). The local telephone company often, but not always, also provides the enhanced 9-1-1 telephone equipment. 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.

County	Map/ Add.	Sign	Equip	Net.	Comments
Alleghany County	Y	Y	N	N	Looking at a regional PSAP with Clifton Forge and Covington. Has completed the addressing process. Has collected a surcharge since 1992, currently \$0.30, with a balance of \$215,000.
Appomattox County	N	N	N	N	Recently established an implementation committee and a surcharge of \$3.00.
Bath County	N	N	N	N	Has basic 9-1-1 with call identification.
Bland County	N	N	N	N	Recently established an implementation committee and a surcharge of \$3.00.
Buchanan County	N	N	N	N	Recently established an implementation committee and a surcharge of \$3.00.
City of Clifton Forge	Y	Y	N	N	Looking at regional PSAP with Alleghany County. Has completed the addressing process. Has no surcharge at this time.
City of Covington	Y	Y	N	N	Looking at a regional PSAP with Alleghany County. Has completed the addressing process. Has collected a surcharge since 1992, currently \$0.30, with a balance of \$195,000.
Craig County	N	N	N	N	No progress at this time.
Dickenson County	N	N	N	N	Establishing an implementation committee in Dec.
Essex County	Y	Y	Y	Y	Implementation October 2000.
Fluvanna County	N	N	N	N	Has basic 9-1-1. Recently signed a contract for mapping, addressing and street signs. Has a surcharge of \$1.50 at this time.
Highland County	N	N	N	N	Has basic 9-1-1 with call identification.
King and Queen County	N	N	N	N	Has basic 9-1-1. 70% completed with street naming process. Has a surcharge of \$2.00.
King William County	Y	Y	N	N	Has basic 9-1-1. Has completed the mapping and addressing process. Has a surcharge of \$3.00.
Lee County	N	N	N	N	Recently established an implementation committee.
Lunenburg County	Y	Y	Y	Y	Implementation December 2000.
Madison County	N	N	N	N	Recently established an implementation and street naming committee.
Mathews County	N	N	N	N	Has basic 9-1-1 with caller identification. Recently signed a contract for mapping, addressing and street signs. Has a surcharge of \$2.00 at this time.
Middlesex County	Y	N	N	N	Has basic 9-1-1. Currently, verifying street name and installing street signs. Planned implementation of E9-1-1 in summer 2001. Has a surcharge of \$2.00.
Nelson County	Y	Y	Y	Y	Implementation September 2000.
Scott County	N	N	N	N	Working on establishing a surcharge.
Tazwell County	Y	Y	Y	Y	Implementation August 2000.
Westmoreland County	Y	Y	Y	Y	Implementation December 2000.

**Figure 1 - Localities without E-911**

Of the 18 localities that will not be providing enhanced 9-1-1 services by January 1, 2001, five have completed the mapping and addressing process, though one has not completed installation of the street signs. The remaining jurisdictions are in the early stages of planning or implementation of enhanced 9-1-1.

## Proposed Wireline E-911 Grant Guidelines

The Wireless E911 Services Board is responsible for the establishment of the wireline E-911 grant guidelines. At their November and December meetings, the Board considered the following issues:

- Whether non-verified enhanced 9-1-1 should be considered as truly enhanced.
- What costs should be allowable under the grant program.
- How to measure a jurisdiction's need for state financial assistance.
- Should the grant be a single or multiple year grant.

The following sections detail the results of those discussions.

### ***Non-Verified E-911***

Nine jurisdictions (Figure 2) currently provide a type of enhanced 9-1-1 service that does not verify the address information when it is entered in the 9-1-1 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 9-1-1 system, all telephone service requests are verified against a list of the valid street names and address ranges in the jurisdiction. Consequently, if a citizen requests telephone service and provides an incorrect address, it is identified as an error and is flagged for resolution. This does not happen with a non-verified enhanced 9-1-1 system. All records are entered in the 9-1-1 database regardless of being valid. Jurisdictions often select this type of service to reduce cost by avoiding the need to map and address the jurisdiction. Instead of addresses, rural route or direction information are used in the 9-1-1 database.

County	Map/ Add.	Sign	Equip	Net.	Comments
Accomack/Northampton Co.	Y	Y	Y	Y	Has been mapped and addressed. Is working with the telephone company to become validated.
Augusta County	Y	Y	Y	Y	Has been mapped and addressed. Is working with the telephone company to become validated.
Buckingham County	N	N	Y	Y	Needs to map and address before becoming validated.
Clarke County	Y	Y	Y	Y	Has been mapped and addressed. Is working with the telephone company to become validated.
Cumberland County	N	N	Y	Y	Is in the process of mapping and addressing.
City of Norton	Y	Y	Y	Y	Has been mapped and addressed. Needs to work with the telephone company to become validated.
Pulaski County	Y	Y	Y	Y	Has been mapped and addressed. Needs to work with the telephone company to become validated.
Russell County	N	N	Y	Y	Needs to map and address before becoming validated.
Wise County	N	N	Y	Y	Needs to map and address before becoming validated.

**Figure 2 - Non-Verified Enhanced 9-1-1**

The Wireless E-911 Services Board is considering whether this level of service should be considered as being fully enhanced 9-1-1. If not, these nine jurisdictions would be required to become fully enhanced 9-1-1 capable by the July 1, 2003 deadline established by *Code*. Five of the nine jurisdictions have everything in place to become fully enhanced. They are mapped, addressed, and have all of the required equipment. They need only communicate the valid street information to the telephone company then the telephone company can validate all of the existing records in the 9-1-1 database. After fixing any invalid records, the jurisdiction will be providing completely enhanced 9-1-1. The four remaining jurisdictions need to map and address the jurisdiction before going through the validation process. Some of these jurisdictions may have a financial need for state assistance in order to complete this process.

### ***Allowable Costs***

The Wireless E-911 Services Board has determined that the following costs be considered allowable under the wireline E-911 grant guidelines: mapping; addressing; street signage; customer premise equipment (PSAP equipment); and network costs. Further the Board has determined that the following costs be specifically identified as not being eligible for funding under the wireline E-911 grant guidelines: voice logging equipment; computer-aided dispatch systems; buildings and furnishings; and radio systems. The Board would consider any other items on a case-by-case basis.

### ***Ability to Pay***

The Wireless E-911 Services Board considered two methods for determining the financial need of each jurisdiction. The first method utilizes the Composite Index to determine the percentage of the allowable costs that the jurisdiction must fund. The Composite Index is used elsewhere in State Government as an ability to pay indicator for localities such as for education funding. As an illustration, if a jurisdiction has a Composite Index of .2345, the jurisdiction must fund 23.45% of the allowable cost of the project while the Board will fund 76.55% of the cost.

The second method considered by the Board for determining the financial need of a jurisdiction was based on the amount of funding that could be generated by the local E-911 surcharge. For a jurisdiction with 5,000 telephone lines, the amount funded by the jurisdiction would be calculated by multiplying the telephone line count by \$1.50 (a midrange surcharge) by 24 months (the amount of time before the July 1, 2003 deadline). In this case the jurisdiction would fund \$180,000 while the Board would fund the remaining cost of the project.

Since the Composite Index is an established method of determining a jurisdiction's ability to pay, the Wireless E-911 Services Board selected it as the preferred method (Figure 3); however, a disadvantage of this method was identified. A few of the jurisdictions would not be able to generate their share of the project funding using the local E-911 surcharge. In order to generate their share, one jurisdiction would have to charge \$6.50 per month per access line over the next 24 months, which significantly exceeds the \$3.00 monthly cap established in §58.1-3813.1 of the *Code of Virginia*.

County	Project Cost	Composite Method			
		Composite Index	Jurisdiction Share	State Share	Surcharge Needed
Alleghany County	\$ 370,000	0.3354	\$ 124,098	\$ 245,902	\$ 0.84
Appomattox County	\$ 470,000	0.3121	\$ 146,687	\$ 323,313	\$ 1.00
<b>Bath County</b>	<b>\$ 455,000</b>	<b>0.8000</b>	<b>\$ 364,000</b>	<b>\$ 91,000</b>	<b>\$ 3.64</b>
Bland County	\$ 455,000	0.2748	\$ 125,034	\$ 329,966	\$ 1.49
Buchanan County	\$ 507,500	0.2573	\$ 130,580	\$ 376,920	\$ 0.51
Buckingham County	\$ 275,000	0.2694	\$ 74,085	\$ 200,915	\$ 0.42
City of Clifton Forge	\$ 340,000	0.2423	\$ 82,382	\$ 257,618	\$ 1.57
City of Covington	\$ 355,000	0.3358	\$ 119,209	\$ 235,791	\$ 1.44
Craig County	\$ 447,500	0.3416	\$ 152,866	\$ 294,634	\$ 2.48
Cumberland County	\$ 175,000	0.3394	\$ 59,395	\$ 115,605	\$ 0.62
Dickenson County	\$ 485,000	0.2358	\$ 114,363	\$ 370,637	\$ 0.58
Fluvanna County	\$ 500,000	0.3817	\$ 190,850	\$ 309,150	\$ 0.83
<b>Highland County</b>	<b>\$ 440,000</b>	<b>0.5502</b>	<b>\$ 242,088</b>	<b>\$ 197,912</b>	<b>\$ 6.50</b>
King and Queen County	\$ 455,000	0.4021	\$ 182,956	\$ 272,045	\$ 1.92
King William County	\$ 202,500	0.3662	\$ 74,156	\$ 128,345	\$ 0.48
Lee County	\$ 522,500	0.1886	\$ 98,544	\$ 423,957	\$ 0.33
Madison County	\$ 470,000	0.4005	\$ 188,235	\$ 281,765	\$ 1.35
Mathews County	\$ 462,500	0.4798	\$ 221,908	\$ 240,593	\$ 2.01
Middlesex County	\$ 287,500	0.5658	\$ 162,668	\$ 124,833	\$ 1.40
Russell County	\$ 275,000	0.2298	\$ 63,195	\$ 211,805	\$ 0.19
Scott County	\$ 507,500	0.2298	\$ 116,624	\$ 390,877	\$ 0.44
Wise County	\$ 275,000	0.2237	\$ 61,518	\$ 213,483	\$ 0.13
	<b>\$8,457,500</b>		<b>\$3,033,920</b>	<b>\$5,423,580</b>	

Figure 3 - Composite Index Method

To address this shortcoming, the Board developed the “Capped Composite” method of determining a jurisdiction’s ability to pay. This method caps the jurisdiction’s share as calculated using the Composite Index at the amount the jurisdiction can generate imposing a \$1.50 over 24 months (Figure 4). The \$1.50 amount is used rather than \$3.00 to allow jurisdictions to use the surcharge to generate additional revenue for expenditures not covered by this grant, such as the salary of an E-911 Coordinator, and in deference to concerns raised regarding the amount of the E-911 surcharges.

County	Project Cost	Capped Composite		
		Jurisdiction Share	State Share	Amount Increased
Bath County	\$ 455,000	\$ 150,156	\$ 304,844	\$ 213,844
City of Clifton Forge	\$ 340,000	\$ 78,587	\$ 261,413	\$ 3,795
Craig County	\$ 447,500	\$ 92,468	\$ 355,032	\$ 60,398
Highland County	\$ 440,000	\$ 55,872	\$ 384,128	\$ 186,216
King and Queen County	\$ 455,000	\$ 143,172	\$ 311,828	\$ 39,784
Mathews County	\$ 462,500	\$ 165,695	\$ 296,805	\$ 56,212
				<b>\$ 560,248</b>

Figure 4 - Jurisdictions Impacted by Capped Composite Method

### ***Single/Multiple Year Grant***

The Wireless E-911 Services Board had determined that a multiple year grant is most appropriate for this project. This means that a jurisdiction will submit a grant request for the entire project amount rather than only that which can be spent in the following fiscal year. In this way, the Board can determine the projected cost of the entire project so that a single appropriation can be made.

### **Conclusion**

Using the “Capped Composite” method being considered by the Wireless E911 Services Board, the state-funding share is \$5,983,828. The current Fiscal Year 2002 appropriation is \$1.4 million. Whether the July 1, 2003 deadline for implementation of enhanced 9-1-1 is achievable will depend on an increase to the appropriation and the ability of the jurisdictions to complete the mapping and addressing process in a timely manner. While the portion of this process usually completed by a vendor takes six to eight months, the street naming and imposition of the new addresses has taken a few jurisdictions more than three years to complete. The amount of time needed depends on the political climate within the jurisdiction. Though a few jurisdictions have already inquired about requesting an extension from the Board, the Board will likely not consider any requests for extension until the beginning of 2002.