

**Regional Emergency
Response Technical
Advisory Committee**

Richmond Regional Planning
District Commission
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REGIONAL NATIONAL PUBLIC SAFETY ADVISORY COMMITTEE MUTUAL AID COMMUNICATIONS PROPOSAL

Purpose:

The Regional Emergency Response Technical Advisory Committee, comprised of local staff appointed respectively by each of the Richmond Regional Planning District Commission localities, identified the need to improve emergency radio communications throughout the region. Anticipating that federal grant funds would become available, the committee established an interoperability steering committee to identify needed regional improvements and develop a proposal to implement the improvements. This document provides a history of the regional coordination efforts leading to a proposal for improved regional interoperability.

Capital Region Communications Steering Committee History:

Inter-jurisdictional radio interoperability has always been an obstacle when operating in multi-jurisdictional mutual aid situations. Over the past several years, the Counties of Henrico, and Chesterfield and the City of Richmond have worked together to minimize radio communications barriers in these types of situations, as well as in day-to-day operations. All three jurisdictions have purchased 800 MHz Motorola digital trunked systems, linked through a Smartzone controller. The Smartzone software and controller allow individual radio users to seamlessly roam between the three jurisdictional sub-systems, provided they are on a talkgroup that has been designated as a wide area resource.

The three jurisdictions formed the Capital Region Communications Steering Committee and have worked together to ensure that policies and procedures are in place to take full advantage of the interoperability capabilities of the Smartzone Network. The three jurisdictions have created generic regional talkgroups that are programmed in all of the radios on the Smartzone Network. These generic talkgroups can be assigned by any of the three dispatch centers and can be used for any type of regional situation. In addition to the generic regional talkgroups, regional law enforcement talkgroups have also been created. These talkgroups are programmed into law enforcement radios and are used for specific purposes, such as regional vice operations

or regional hostage situations. All of the talkgroups that are designated as regional talkgroups are programmed as wide area talkgroups, meaning they can talk throughout the entire coverage area of the Smartzone Network.

In addition to the designated regional talkgroups, the three jurisdictions have agreed to share certain key police, fire and general government talkgroups, with each other. These shared talkgroups are also designated as wide area and can be used throughout the entire coverage area of the Smartzone Network.

The console systems of the three jurisdictions are also linked through a common network and can be programmed to share resources. Through this console network, all three jurisdictions have access to two National Public Safety National Advisory Committee (NPSPAC) calling channels and four NPSPAC tactical channels. Henrico County is in the process of finalizing an MOU with Hanover County to allow the Henrico dispatch center to patch Henrico talkgroups to the Hanover Enhanced Digital Access Communications System (EDACS) through a control station located at the Henrico communications center. Henrico is also working on a MOU with the State Police that would allow Henrico dispatch to patch the State Police Division One repeater channel to Henrico talkgroups. Once these two control stations are installed, Chesterfield County and the City of Richmond would have the capability of patching through the shared console network, provided they have a MOU with Hanover and the State.

Richmond Regional Planning District Committee Recommendation:

Recently, the Richmond Regional Planning District Commission (RRDPC), Regional Emergency Response Technical Advisory Committee (RERTAC), was tasked with developing a mutually agreeable plan to help overcome some of the obstacles of interagency radio communications with jurisdictions that do not have 800 MHz Smartzone systems. The primary focus in developing this plan was to identify a practical means of radio communication between field units and dispatchers from different jurisdictions, using different types of radio systems.

One obstacle in such a plan is funding. The members of the RERTAC acknowledged that the best approach to have such a system funded would be to submit a regional application for a competitive United States Department of Justice (DOJ) grant. It has not yet been determined which jurisdiction would be the primary applicant for the grant although there has been some preliminary discussions regarding a sponsor. As of the last RERTAC last meeting, on November 25th, 2002, DOJ had not released the funding and was not accepting applications. However, in late December, the Virginia Department of Emergency Management issued a request for proposals on behalf of the DOJ to local chief administrative officials statewide. Competitive grants for coordinated proposals, such as regional interoperability are due March 31, 2003.

The committee considered several approaches including VCALL, the Macom Network First solution, the JPS ACU-1000 and the NPSPAC national mutual aid system. The NPSPAC mutual aid system is currently in use in the Counties of Hanover and Henrico and in the City of Richmond. It was determined that the most logical approach would be to develop a plan that would expand on this existing regional NPSPAC mutual aid system, to allow for coverage in the counties surrounding Richmond, Henrico and Hanover.

The NPSPAC mutual aid system is a series of conventional analog 800 MHz repeaters and subscribers. The system is comprised of a national calling channel and four tactical repeaters. The frequencies associated with each channel are consistent nationwide. The normal procedure for using these channels is as follows; a public safety user who is out of their own radio coverage area, but is within the coverage area of a jurisdiction with NPSPAC would switch an 800 MHz radio to the national calling channel (NCC) and request assistance. A dispatcher monitoring the national calling channel would assign the user to the appropriate tactical channel and enable the repeater. The dispatcher could then patch the user to an operational channel or work on the assigned tactical channel. The dispatcher will disable the repeater once the operation is complete.

The basic idea of the proposed system would be to strategically place NPSPAC calling channels and tactical channels in each jurisdiction in the region. The channels would be tied to the jurisdiction's dispatch consoles. The dispatcher will have the ability to patch the NPSPAC channels to operational channels in the County. For example if a Henrico police unit was traveling through Goochland and needed help, the officer would call Goochland dispatch on the national calling channel (NCC) and Goochland would enable their tactical channel. The dispatcher would then tell the Henrico officer to switch to the appropriate tactical channel. The dispatcher would be able to patch the officer to the Goochland Sheriff's office or any other appropriate channel that is currently available on the dispatch console.

In the proposed solution, Henrico, Hanover and Richmond would make no changes to their current systems. Chesterfield would add a national calling channel and one tactical channel to one of their existing towers and a second tactical channel to another of their towers. Powhatan would add the national calling channel and a tactical channel to a single tower. (The Mitchell road tower site was used in producing coverage predictions.) New Kent would add the national calling channel and a tactical channel to a single tower. (The Cox tower at the courthouse was used in producing coverage predictions.) Charles City would add the national calling channel and a tactical channel. (The Munford road site was used for the coverage predictions, but other sites may produce better coverage.) Goochland would add the national calling channel and a tactical channel to a single tower. (The Goochland Courthouse tower site was used in producing coverage predictions.)

Coverage prediction maps were produced using estimates on antenna height, transmission line lengths and assumptions that the chosen towers provide the requested access. Locality-specific, individual detailed site assessments will be required to determine the feasibility of and equipment for each tower site. The individual site assessments also will be used to determine the best way to get the radio signals to the jurisdiction's communications center and should indicate what, if any, modifications need to be made to the console system of each jurisdiction. The RERTAC will need this detailed information to determine a final cost estimate and system summary for the grant application.

The general operating guidelines of the NPSPAC channels are included in the Region 42 Plan that directs how federally regulated communication channels are managed and operated within most of Virginia. Specific mutual aid procedures will need to be adopted for the region as part of expanded interoperability capabilities. Training and maintenance should be incorporated in each respective locality's existing E911 radio communication policies and procedures.

If the members of the Richmond Regional Planning District Commission-RERTAC choose to proceed with the NPSPAC proposal as prescribed, the next step would be to identify specific equipment cost by locality. Additional steps include preparing the grant application for submission by March 31, 2003 and obtaining a local government sponsor for the regional application.