

## Problem

The Radio Working Group (RWG) was created in late 2017 in response to ongoing concerns of several public safety agencies. These agencies perceived a lack of progress towards a long-term public safety communications solution. The RWG has identified three main problems underlying public safety communications in Montgomery County, the Towns of Blacksburg and Christiansburg, and Virginia Tech.

1. **A lack of design and engineering of an overarching system.** This issue is the parent of several key items that let to the current request before the Montgomery County Board of Supervisors.
  - a. Agencies are on different frequency bands, which means multiple radios are required for each agency. This has reduced the ability of the individual responder to communicate effectively, and increased system costs over time (i.e., individual vehicles require two or more radios).
  - b. In the absence of a centralized plan, agencies have modernized and addressed communications needs based on resources and perceived priority within that agency. This has led to coverage gaps, a lack of interoperability, and inconsistency in/incompatibility of equipment purchases.
  - c. Infrastructure needs (antenna sites, etc.) have not been adequately addressed, because of ownership issues (sic. Cumulus radio tower) and the typical high cost.
2. **There currently is no ongoing capital funding allocation for a public safety radio system.** Individual agencies have received funding from local government for specific improvements. The public safety radio system does not exist in a vacuum for each locality and shared infrastructure a critical element. Failing to capitalize on
3. **Individual agency purchasing.** In part due to (1) and (2) above, means agencies are neither receiving economy of scale nor competitive pricing benefits. This has also led to sub-optimal situations, such as Elliston Fire Department's placement of a repeater on an AEP power pole as opposed to an actual prepared, dedicated tower site.

## Evaluation

The RWG evaluated these problems as they were synthesized and described. Evaluation consisted of a review of the 2010 report; interaction with individual government and agency leaders; a review of prepared quotations for Elliston Fire Department (EFD), Shawsville Volunteer Rescue Squad (SVRS), and Riner Fire Department (RFD) related to current funding requests; a review of state contract documents from the Virginia Information Technology Agency; and a review of similar contracts awarded and related academic literature.

## Solutions

A number of solutions were considered by the RWG. Two potential solutions were rejected after discussion:

- **Allow each agency to present an independent funding request to their funding authority.** This solution does not help resolve problem (1) or (2) and does not take advantage of volume discounts or competitive bid procedures. This does not address underlying system design, coverage issues, antenna loading, or interference issues.
- **Delay any capital expenditure requests until problems (1) and (2) are resolved.** There is a critical, immediate need to bring the three agencies into the same frequency band as the rest of Montgomery County. Interoperability among Montgomery County agencies is critical due to continued growth and call volume.

Further discussion by the RWG yielded three unanimous recommendations:

- **Fund a short-term solution to address the immediate needs of SVRS, EFD, and RFD.** With assistance from and the support of the RWG, the RWG via the JAC and FRC will request funding in the amount of \$350,000 from the Montgomery County Board of Supervisors to move the three impacted agencies to the same

band (UHF) immediately as part of a short-term plan. The requests from each agency will be adapted to control costs. Any savings will be reserved towards capital projects via the radio reserve fund.

- **Establish a capital radio system reserve fund.** In keeping with the 2010 RCC Consultant report, the RWG recognizes that the solution outlined for SVRS, EFD and RFD is at most a short-term solution and will not resolve the underlying problems. The RWG is proposing that the JAC and NRV911A approach the individual jurisdictions and request the establishment of, and ongoing contribution to, a capital reserve specifically for funding the creation and maintenance of the NRV's public safety radio system. *Note: The RWG recommends that grant funding be sought from both federal and state sources to reduce jurisdictional costs.*
- **Recommend to the JAC and NRV911A that an external engineering / consulting firm be employed.** An external firm should be sought to (a) update the 2010 RCC Consultants report, (b) design a public safety radio system for NRV911A member jurisdictions, addressing the coverage and technical issues that are well-documented, and (c) develop a formal RFP package to determine the acquisition and operational costs of the system outlined in (b).

### Threats

A number of potential pitfalls exist; some of these are identified as contributing to the current status:

1. **Implementation of communication projects without coordination between agencies.** To minimize the threat, the RWG and other groups as appropriate should be constituted to ensure coordination of effort, increase purchasing power, and increase standardization of the system(s).
2. **Engineering projects independently of a master plan for the design, installation, use and maintenance of those project(s).** Employing an external entity to engineer the system allows individual jurisdictions and agencies to solve underlying technical issues such as coverage, interference, and interoperability rather than continue implementing short-term, less efficient alternatives.
3. **Failure to provide sufficient funding.** As outlined in the 2010 report, funding and governance of the area's public safety communication system must be addressed to achieve a 15-year solution. Failure to provide funding for the immediate needs, the design and acquisition of an engineered system, and for maintenance of the new system will assuredly lead to increased incremental costs and place member(s) of both the public and our public safety community at risk.