



BERTHA W. HENRY, County Administrator

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May 22, 2018

Frank Babinec, Fire Chief
President, Fire Chief's Association of Broward County
Coral Springs-Parkland Fire Department
2801 Coral Springs Drive
Coral Springs, FL 33065

W. Howard Harrison, Police Chief
President, Broward County Chiefs of Police Association
Plantation Police Department
451 NW 70th Terrace
Plantation, FL 33317

Subject: Response to Joint Letter from the Fire and Police Chiefs' Associations and Broward Sheriff's Office dated May 8, 2018

Dear Chiefs:

As you are aware, the County has engaged the Police Foundation, Inc. to holistically review the community's response to the incident that occurred at Marjory Stoneman Douglas High School on February 14, 2018. The goal of the County's After-Action Report is to consolidate the various individual assessments into a communitywide assessment; look for any gaps in preparedness; and offer a report that accentuates our strengths while providing best practice strategies to close any gaps that are identified.

One of the first tasks for the Police Foundation will be to review the performance of the County's radio communications system during the incident. Data and user activity from the radio system has been provided to the Police Foundation's communications expert to help us better understand any system deficiencies, end user training needs, and any other factors contributing to the challenges faced in communications that day. To assist with this review, we are requesting copies of the policies and standard operating procedures, and training records currently in place by each agency regarding radio usage, placing emphasis on those that relate to mass incidents. If available, we would also like to request copies of the radio preventative maintenance programs, including when each radio received their last preventative maintenance. Your assistance with collecting this information will be much appreciated as it will be essential in enhancing any training that may be necessary. The goal is to review and update, not replace, existing policies to ensure they cover the essential elements for proper radio use.

In the interim, we are working with Motorola and Mission Critical Partners (MCP) to determine if there are stop gap measures that can be implemented until the new system and protocols are in place. In either case, offering first responders this one basic tip will assist greatly: every push of the button or

Broward County Board of County Commissioners

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twist of the channel control knob has an impact on the radio system's resources and can impact communication. Limiting or avoiding such actions by those not responding to and/or working the incident will serve to improve radio system performance during a mass incident.

Based on your letter to Brett Bayag dated May 8, 2018, received on May 15, 2018, I would like to address some key points and respond to your comments.

Public Safety Radio System Replacement

As you are aware, the County embarked on replacing the Public Safety Radio System by engaging Mission Critical Partners (MCP) to conduct a comprehensive radio system assessment and analysis, and gain feedback from end users. Please recall letters to the Police and Fire Chiefs' Associations dated December 28, 2015 and January 19, 2016. Both these letters addressed various issues raised by each Association. End-user feedback was utilized in the design of the new system. Both Associations were directly involved in the development of the new system's specifications; consisted of the majority technical review committee makeup for field demonstrations; provided specific vendor demonstration requirements; and were included on the committee tasked with vendor selection (Motorola) to replace the legacy system.

The occurrence of throttling in the existing system has been known by all and correspondence has been sent to the end-users as well as discussed at the Broward County Consolidated Communications Committee (BCCCC) prior to incidents at Fort Lauderdale-Hollywood International Airport and Marjory Stoneman Douglas High School. Subsequently, efforts to educate continue (March 14, 2018, May 3, 2018, and now, May 23, 2018).

We strongly believe that once non first responders are removed from the system along with the higher processing power of the new P25 controller, coupled with end user training and disciplined usage protocols, we can significantly mitigate, if not totally eliminate, throttling from occurring.

Funding and Planning on the Replacement Regional Communications Systems

The commitment demonstrated by the County Commission to regional public safety communications and related systems is reflected by the investments it has made, which exceeds \$140 million. This includes the replacement of major systems such as the Public Safety Radio, Computer Aided Dispatch (CAD), Fire Station Alerting, Viper 911 Phone, Local Government Radio, Alphanumeric Paging, and Text to 911 systems. These projects have been strategically planned and managed by subject matter experts with feedback from first responders, with the vision of providing state-of-art equipment that will benefit Broward County for many years to come.

Interoperability Between Systems

Interoperability has been significantly increased through dispatch consolidation. Further enhancements are required such as standardized operational procedures and radio protocols, training (dispatch and field) and regional fleet maps. In addition, we encourage the Cities of Coral Springs and Plantation to the join the County's Computer Aided Dispatch (CAD) system as non-regional participants. This will allow them to maintain their independent dispatch center status; however, the common CAD will eliminate the need for call transfers and enable greater capabilities

for situational awareness across the PSAPs in the County. We encourage both the Police and Fire Chiefs' Associations to support and lead some of these efforts to further enhance interoperability.

Closest Unit Response

The discussions on Closest Unit Response (CUR) began nearly 20 years ago, beginning with the Charter Review Committee. In 2002, the voters approved the charter amendment allowing for the implementation of CUR. For years, the County has invested millions and continues to fund mobile data terminals (MDTs) so that this life saving program can become a reality for our community. Unfortunately, CUR has not been accomplished even after a successful pilot was conducted to test the existing system capabilities. On a positive note, the County received the May 14, 2018 letter from the Fire Chief's Association proffering a guideline for a Closest Unit Response program. Although this is the first step of several, we appreciate your support and the County will be developing a project charter so that specific details can be approved by participating municipalities.

For your use, I have attached responses to your comments. We look forward to meeting your associations on May 23, 2018 to further discuss the implementation of the new P25 radio system and addressing concerns with the existing system.

If you have any questions, please contact me or Alphonso Jefferson, Jr., Assistant County Administrator, at 954-357-7352.

Sincerely,



Bertha Henry
County Administrator

Attachment

cc: Board of County Commissioners
Sheriff Scott Israel, Broward Sheriff's Office
Monica Cepero, Deputy County Administrator
Alphonso Jefferson, Jr., Assistant County Administrator
Municipal Managers

Responses to Comments

1. After Action Report – All stake holders must be involved in the after-action report being prepared for the county. This way communications will be represented from an operational stand point and not just a technical stand point.

Response: *The After-Action Report that will be developed by the Police Foundation will include Motorola, MCP, ORCAT and end users. You have been designated as the point of contact for the end users and an invitation will be sent in the next day or so. The consultants will be conducting phone/skype interviews on May 30 and 31. If one day is better than the other for you, please let us know by May 25, 2018.*

2. SmartZone system components – specifically, the prime controller and site controller are no longer supported. As this has been identified as a prime area of concern (reference “throttling”), **Can we replace it immediately regardless of whether or not it is compatible with the new P25 system?**

Response: *There are no interim solutions available to replace the current controllers.*

3. Maintenance of existing subscriber units – Overall, this has been inconsistent causing them to affiliate to the system much more than normal; thereby affecting reliability and causing outages in the system controller. Has this been mitigated or resolved?

Response: *No. There continues to be agency subscriber units that are not properly maintained. Regularly, the County provides agencies with information on radios that require maintenance as they are identified to be operating outside of recommended performance standards. The maintenance responsibility for subscriber units resides with the end-user agencies and should have preventive maintenance at least once a year. As part of the new P25 radio system implementation, the County will be offering preventive maintenance services at a fee-based cost structure to municipalities or they can choose to use Motorola as our contract allows for a fee-based cost structure as well.*

4. SmartZone capacity limit – the system approaches capacity limit (more than desired) during peak usage hours (morning – evening), especially due to the number of users on the system (with school board usage being one of the identified users); **What can be done to reduce this usage to temporarily increase capacity until a permanent solution is in place?**

Response: *There are no options for increasing control channel capacity on the existing system. The system has the capacity (talkpaths) to handle the requested calls. The County is actively working to implement a UHF MotoTRBO system to migrate local government users off the public safety infrastructure. Completion of the MotoTRBO system is anticipated by 1st quarter of calendar year 2019. Transition of non-public safety users will occur following this timeframe.*

5. Single points of failure – MCP notes that this design can leave first responders with no way to communicate; **Have all options been exhausted to retrofit existing points of connectivity, site controller locations, and single site controllers to attempt to change this (even temporarily)?**

Response: *Yes. The new system has been carefully designed to ensure there are no single points of failure, including use of geographically redundant master sites and prime sites, and redundant network connections to each location. The ability to add additional site controllers is not available with the existing system. The most significant single point of failure in the current system is the prime controllers located at the Public Safety Building, due to age and control channel capacity. The system*

has redundant controllers to account for the failure of an individual controller. The other point of failure identified could potentially disable an individual radio site; but could not result in a complete system-wide outage.

6. Subscriber Units – At the time of the analysis, MCP estimates that 10,427 primary subscriber radios are currently on system; with additional estimates having another 3,000 to 4,000 subscriber radios programmed with the ability to access the system for interoperability; ***Is the new system designed for this level of capacity?***

Response: Yes. The new system was designed to handle loading for all existing users plus all first responder agencies in Broward County, including those operating on their own P25 digital systems (Fort Lauderdale, Coral Springs, and Plantation) and digital system (Hollywood). Based on Motorola's proposal, the primary simulcast cell can support up to 3,361 active users while maintaining a 1% grade of service, meaning with this number of users there is a 1% chance of a user receiving a busy (all talkpaths are in use). The new system also provides for a secondary "backup system" providing 12 simultaneous talkpaths, and 11 fixed conventional channels. Additionally, capacity will be improved by removing approximately 4,500 local government and school board users.

7. Back-up – Is there a plan to use Coral Springs and Plantation as true backups and vice versa?

Response: There is no current plan to utilize the Coral Springs, Plantation, or Fort Lauderdale systems as a backup to the countywide system as they do not provide the coverage or capacity to serve as a countywide backup. Individual departments are welcome to negotiate shared programming of talkgroups from these systems in a coordinated fashion to ensure these systems are not overloaded. The County is implementing a 7-channel backup system providing 12 available talkpaths and outdoor portable coverage from 4 transmitter locations. The County system has been designed with the coverage and capacity to serve as a backup for the Coral Springs, Plantation, Hollywood and Fort Lauderdale systems.

8. In building coverage requirements – have we established any guidelines regarding the use of additional BDA's, mobile and/or fixed repeaters, to help bridge the coverage gap? Has any contact been made with entities such as the Hospital District(s) or School Board regarding the issues within their buildings?

Response: Yes. Some hospitals have begun procurement of BDAs for their critical areas. We encourage School Board to evaluate the use of BDAs to improve radio coverage inside schools. The County advocated for and has adopted Section 118 to the Broward County building code regarding the use of "Two-way Radio Communication Enhanced Public Safety Signal Booster Systems" which went into effect April 15, 2016. The rules establish mandatory criteria for in-building public safety communications for new and existing buildings. While the new system will provide significantly improved in-building coverage, there is no guarantee that coverage will be provided in any specific building, and therefore BDAs should be implemented regardless. The County is supportive of agencies implementing vehicular repeater systems to provide another option for improving in-building coverage. The County intends to repurpose some of its 800 MHz channels for vehicular repeater usage once the existing system is decommissioned. There needs to be established detailed SOPs for these type of operations, to include recurring end user training.

9. Static back up system for redundancy – Is one being configured and if so, how? What is the status of the 4-RDSTFD locations related to the Region 7 700 MHz system? MCP recommended that the County proceed with implementing the RDSTF 700 MHz overlay system as a stand-alone trunked P25 Phase I location for backup capability – was the procurement of this system authorized and

completed prior to the end of 2015 (as recommended)? A fixed / dedicated solution was recommended to ensure immediate availability; with supplemental components such as mobile, conventional repeaters.

Response: *As previously noted, the County is implementing a 4-site 12-talkpath backup system with an independent controller. The County has already implemented one RDSTF location in east Broward County. While operational, the RDSTF sites are equipped with only 3 channels, providing a maximum of 2 simultaneous talkpaths, and thus providing limited capacity. As part of the P25 contract, the County procured a communications trailer that is equipped with both gateway equipment and two fixed conventional repeaters to support scene-of-incident response. While not yet operational, the County will explore options for deploying this resource prior to completion of the P25 system. In addition, the County is expanding the 3 8TAC channels to a 4-site simulcast configuration to provide improved coverage; and implementing 8 additional 700 MHz conventional interoperability channels. These resources can all be leveraged for backup scenarios.*

10. Non public safety users – are all non-public safety users being removed from the new 700 MHz frequencies?

Response: Yes.

11. Future use of the 800 MHz frequencies – will they still be available for use within the new system, regardless of whether or not the current design calls for its use? Would current and future tower sites be capable of housing/supporting both systems and the necessary equipment?

Response: *The County is exploring opportunities that would allow these licenses to be retained. Of the 28 frequencies utilized on the current system, 7 are licensed by the Broward County School Board, and thus the County does not have control over what ultimately happens to these resources.*

12. End of life replacement schedule (pre-determined) – MCP notes that even new equipment will have both predetermined and recommended end-of-life dates. Is there a plan in place to require the procurement and replacement of these pieces of equipment to ensure the new system does not suffer like the current one is in dealing with non-supported, non-functioning communication equipment?

Response: *The new system was procured with maintenance pricing for a System Upgrade Agreement (SUA) which includes the update of software and hardware every 2-years to keep the system current and replace any end-of-life components. It is the County's intent to execute this option on an ongoing basis. End user equipment will also need to be considered for continuous maintenance and end of support/life.*

13. Microwave system status – MCP recommended replacement of current system prior to the system cutover; what is the status?

Response: *The new Aviat microwave system is being implemented concurrently with the new P25 system. The design has been completed, the equipment has been staged, and delivered to a storage location inside Broward County prior to installation. The microwave system will be installed in parallel to the existing system to support a seamless cutover. The microwave system will be turned on and tested prior to the P25 system.*

14. Paging system – current system has a single controller resulting in a single point of failure. MCP recommends redundant controllers for new the system to mitigate this; is that recommendation being built into the newly designed paging system?

Response: *The new paging system has been equipped with geographically redundant controllers located at the Sunrise and Coconut Creek dispatch centers. The system has been operational since early 2017 and is currently undergoing project closeout activities.*

15. Fort Lauderdale / Hollywood and their current system design with the newly proposed Regional Design – MCP mentions the use of the current hosted master site and its interoperability with both Fort Lauderdale and Hollywood, including the Phase 1 subscriber units; is this still a concern and if so, how is it being handled?

Response: *This is no longer a concern. The new system will include an Inter-RF Sub System Interface (ISSI) to provide connectivity between the new County system and the Motorola Hosted Master site, which serves the systems utilized by Fort Lauderdale, Coral Springs, Plantation, and Hollywood. This connection will allow for the continued wire-line dispatch of Fort Lauderdale users at the County's regional dispatch centers, and shared console programming of talkgroups at all five PSAPs in the County. The County has advised all system users that Phase II radios are required to operate on the County system. In the beginning, Phase I compatible talkgroups will be required to be tightly controlled (only limited to mutual aid) and will eventually be completely Phase II (TDMA).*

16. UHF frequency status for paging / station alerting – have the identified frequencies been secured for these items?

Response: *Yes, a new UHF frequency was secured for both systems and has been utilized on the new paging system since early 2017. Fire station alerting is still in progress of being implemented.*

17. Maintenance Plan – MCP recommends a mandatory preventative maintenance program that requires a retune every other year for subscriber units to prevent issues in the system; how is that being handled and by whom?

Response: *Pricing was secured from Motorola for the recommended subscriber retune schedule. Since the end user subscriber units are the direct responsibility of each agency, each agency is accountable for complying with the recommended maintenance of all radios being used on the County's infrastructure on an annual basis. For the new system, a regional preventive maintenance standard will be established, implemented and tracked for all users that utilize the County's radio infrastructure.*

18. Transition between current system to new system - MCP mentions issues with Phase I vs Phase II subscribers regarding system capacity with Phase I subscribers using the system until the unit is changed to a Phase II compatible subscriber unit; is this still a concern and if so, how is it being handled?

Response: *This discussion revolved around system options that could allow for the prolonged use of Phase I radios on the County system. Based on the system deployment schedule and coterminous end-of-support dates for fielded XTS and XTL subscribers, the County elected to proceed with a system architecture designed for Phase II radio usage. Users have been advised that any Phase I radios will need to be replaced with Phase II enabled radios prior to system cutover. This was also reinforced during the December 6, 2017 and the March 14, 2018 subscriber meetings. Subscriber pricing was negotiated as part of the P25 system procurement, negotiated pricing discounts set to expire May 2019. Contract has been uploaded to the County's website.*

19. Local Government System - When will the local government system be ready? Is there a delay? If so, what is that delay?

Response: *The local government radio system is planned to be available by 1st quarter calendar year 2019. A delay in implementation occurred because the contracted vendor, Control Communications, declared bankruptcy. An emergency procurement was performed to reassign the system deployment to Radio One.*

20. School Board - If the school board users prove to be a problem, can they be off-loaded to a commercial system now? If not, why?

Response: *Recognizing only the School Board Police Department will be accommodated on the new P25 public safety radio system, they are pursuing an alternate solution to accommodate their non-public safety radio communication needs.*

21. Talkgroups - Are talkgroup priorities set in the new system to allow Main channels and tactical channels to connect?

Response: *Yes, talkgroup priorities will be set in the new system. In addition, talkgroup priorities are already defined and established on the existing system for public safety users. However, talkgroup priorities only come into play once the system has reached a busy state (all talkpaths are being used), and additional talkgroup requests are placed in a queue. Talkgroups with priority are automatically placed at the top of the queue. As an FYI, priorities have no bearing on scenarios involving "throttling" or control channel loading.*

22. Design - Did the design consultant consider a two or three controller system, North/South, Main/Tactical, Law/Fire or any other combination/consideration on the new system?

Response: *The consultant considered all available options, including designs using multiple controllers. The system, as planned, will utilize two controllers in a geographically redundant configuration to account for both equipment failures and loss-of-site failures. A split between two simulcast cells was considered (as noted in Option 1 in the report), but avoided due to operational limitations, including but not limited to the fact that such a split would potentially limit talkgroups to a limited coverage area (not countywide). Split simulcast cells result in reduced capacity when talkgroups carry across multiple simulcast cells, result in reduced spectrum efficiency, and require more equipment. The trunked backup system described above utilizes a separate controller that can, upon agreed to detailed SOP's, be utilized to offload traffic during critical incidents to limit the potential for overloading the control channel on the primary simulcast cell.*

23. Compliance - Does the new system comply with NFPA 1221 with regard to having non-trunked conventional or simplex channels for tactical operations? Non-trunked/conventional channels do not need a controller.

Response: *NFPA 1221 speaks to using analog conventional channels on the fire ground in the "direct" or "simplex" mode. Use of these channels is an operational decision and not dependent on the fixed system architecture. Currently, the FR regional fleetmap has a dedicated conventional resource for this operation, BCF-VRSD. In the past there were additional discussions of having vehicle repeaters as well. As like any operation, there needs to be a regional SOP on utilization of these systems and what frequencies they will utilize so there's no interference with the primary*

trunked system. In Broward County, the City of Fort Lauderdale, Coral Springs, and Plantation all currently utilize a digital P25 system for its public safety users.

24. Training - When will formal training be provided by the County for the end users?

Response: *Initial training will be conducted on May 23, 2018 to demonstrate again the user activity on the radio system. Following this initial training, County staff will be working with the Police and Fire Chiefs' Associations to establish a regional standardized training curriculum on best practices for radio operations. It was mentioned during the Commission meeting held on May 8, 2018 that Law and Fire have end user training. We are requesting each agency to provide their current radio training procedures and the frequency in which such training is conducted. Our goal is to have all radios users trained.*

25. MDTs - What is the replacement plan for the mobile data terminals?

Response: *The County understands the importance of having functional MDTs in the Fire/EMS front line units; and has programmed budget funding to support their repair or replacement, on an as needed basis. The County remains committed to replace units that are not repairable. The County has received the guidelines for Closest Unit response proposed by the Fire Chief's Association and will present these guidelines to the municipalities for approval. In the meantime, the County has committed to reimburse agencies that decide to purchase new front-line MDTs in advance, for amounts up to the County's costs of procuring Fire/EMS MDTs.*

26. Tactical Communications Plan - In the August 15, 2017 After Action Report "Active Shooter Incident and Post-Event Response January 6, 2017", issued by Broward County, Recommendation Item 1.1.1.5 states: "Consider developing a Tactical Communications Plan for first responders during high-volume events when radio and cell phones are busy, not working or overwhelmed." This is related, obviously, to the "throttling issue" briefly discussed therein. Can you please provide a copy of this plan.

Response: *We previously provided a response to this question in a series of emails in which you were copied indicating what was meant and understood by the Airport Leadership, Airport Consultant and ORCAT. We have offered to assist in developing a countywide tactical plan and have offered resources to do so. I am advised Fire Rescue developed regional consolidated fleet map in 2013, which we will need to be revised as well. In the meantime, we are gathering best practices to assist the operational teams with developing and/or modifying Standard Operational Procedures for Law and Fire and, absent a plan from operations, will implement these best practices as part of the new system. We are awaiting a response to our offer.*

27. SOPs – Please provide a copy of the County's current SOP on governing the use of the radio system.

Response: *Please refer to the Regional ILA's for the previous developed SOPs.*