



Communications Center Operations Analysis and Recommendations

Public Safety Communications System Assessment and Design

Broome County, New York

Report

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1 Overview

1.1 Overview

The purpose of this report was to perform a complete review of the Broome County emergency communications center operations. This review was comprised of several visits by Blue Wing Services personnel to perform an inventory of the center, gather information to perform an overview of the complete operation, and interview the communications staff. As part of the study, several visits were arranged to other emergency communications centers to provide comparisons of operations, as well as to gather ideas for potential future implementation. One of the primary purposes of these visits was to evaluate the use of separate call taking operations.

Blue Wing Services performed the initial overview on July 27-28, 2011.

Blue Wing Services conducted interviews on October 26-28, 2011. This review consisted of management interviews, data gathering, and observations and interviews with each shift. Most of the material for the analysis of the operations was obtained during this visit.

Site visits were also arranged for the following communications centers. These visits consisted of both members of Broome County and several members of Blue Wing. Notes and highlights of these visits are attached to the end of this report.

November 3, 2011 – Saratoga County, NY

November 7, 2011 – Monroe County, NY

November 8, 2011 – Lackawanna County, PA

November 10, 2011 – Dutchess County, NY

December 5, 2011 – Alexandria, VA

December 6, 2011 – Arlington County, VA



1.2 Organization of Communications Center Analysis Documents

The existing systems overview is included as part of this document because many of the operational characteristics of Broome County are referenced in this document.

The second section is an evaluation of Broome County's operations and initial recommendations to the county for enhancements to its existing operations.

The third section provides a statistical analysis of both the county's operations and some comparisons to the operations of the sites that were visited as part of this study.

The final section is a set of trip reports providing an overview of each visited PSAP, highlighting some of the important or interesting observations or facts of each communications center.

1.3 Preliminary Findings

The following is a list of findings in the analysis of Broome County's operation and areas that may be improved. More detailed discussion of each of these will follow.

- Management tasks and responsibilities
- Aging and complexity of current radio system
- Staffing
- Need for dedicated call takers
- Staff loading and efficiency
- Procedural commonality and enforcement
- Policy setting and streamlined external governance
- Staff training



2 Executive Summary

Migrate to a Two-Stage Dispatch Operation

The PSAP call volume is sufficient to migrate to a two-stage call taking operation. E9-1-1 call standards shall meet New York state wireless guidelines. Non-emergency call standards need to be established locally.

Increase the Number of Call Takers

The number of call takers needs to be increased. Staffing recommendations are provided.

Communications Supervisors

Communications supervisors should not serve as the relief for dispatchers on break. This current practice denies the shift of leadership.

Adopt a New Talk Path Plan

A new talk path plan for law enforcement, fire and EMS is proposed and would add efficiency to both user and communications center operations. The talk path plan would provide greater situational awareness to users while reducing the number of individual radio systems that would need to be supported and monitored.

Streamline Call Taker/Dispatcher Tasks

Standardize non-communications tasks performed by the communications staff. These would include wrecker notifications, coroner notifications, firefighter recalls, DOT notifications, etc. Determine the task appropriate to the communications center, develop standardized methodologies and utilize automated systems when possible.

Standard Operating Procedures

Review procedures for consistency between agencies. Identify unique processes for individual agencies. Provide training to communications and field staff on procedures. Develop a feedback and enforcement process. (See Governance.)

Additional Staff Levels

Additional staff levels would provide for entry-level call takers and multiple dispatcher levels and create an assistance supervisor position. These positions would provide additional career opportunities and add efficiency to the communications center.



On-Call

The current full-time staff should be recalled only after the part-time staff pool has been exhausted. It is important to allow full-time staff to have adequate rest and recovery time.

Training

Training for communications staff and responders needs to be reinvigorated. Communications staff training needs to be done consistently on a reoccurring basis. Responder training needs to occur at regular intervals and should be included as part of initial and recurring fire and EMS responder training.

Quality Assurance

The quality assurance program needs to ensure that all communications staff is monitored on a regular basis. Firm monitoring and feedback requirements need to be established for both random and scheduled call taking and dispatching operations.

Governance

A governance committee should be established to review communications center operations, approve proposed changes to policy, enforce operational policies, and provide input to the communications center management staff. The governance committee should consist of representatives from law enforcement, fire, EMS and local government.

Equipment

The communications center equipment needs to be better maintained. Some of the wireless headsets suffer from poor batteries, and telephone equipment has loose wires. All communications center equipment should receive a preventative maintenance check.

House Keeping

The communications center needs a thorough house cleaning. Ventilation ducts need cleaning, along with all surfaces. A house-keeping program for daily, weekly and seasonal tasks needs to be instituted and maintained.



3 Review and Recommendations

The following sections are a review of different areas of Broome County's communications operations. More supporting details and statistical comparisons are found in following sections.

During Blue Wing's period of observation and interviews with the dispatchers, we found the staff competent and professional. In the few "difficult" situations that we observed, the dispatchers handled themselves well, being both polite and professional.

The dispatchers were encouraged to be open and frank about any problems that they perceived. The findings presented here are Blue Wing's observations of the operation. Some items were common with several staff while other items seemed to be issues with only one or two dispatchers. Nevertheless, all of the comments were collected. The major findings have been a result of our internal discussions and combined observations.

3.1 Radio System

The general rule for efficient dispatch is to have one primary channel for use by dispatch for each agency type. Typically for similar systems, this equates to one dispatch channel for fire, one for EMS, one for county law, and separate channels for any major city within the county for fire and law depending upon the amount of activity. In Broome County, Binghamton would qualify for a separate channel based upon activity. In many cases, dispatch centers combine fire and EMS on a single dispatch channel. Once dispatched, fire or EMS is usually moved over to a tactical or fire ground channel that may or may not be monitored by dispatch.

For fire, Broome operates a main fire channel for most of the rural departments. There is a separate channel for the West Broome radio system, a separate channel for Binghamton Fire and a separate channel for Johnson City. This makes dispatch responsible for four channels, but given the five-site county fire configuration, each of those sites requires individual monitoring, as well as the separate ground operations. Effectively there are up to 15 fire channels to monitor.

For EMS, each of the four EMS agencies is on its own individual channels; other units are dispatched on the regular fire channels.



While leaving Binghamton on its own channel, dispatcher efficiency would be greatly increased by combining the fire/EMS frequencies into two simulcast channels. This would alleviate confusion and potential of mistakes for dispatch during large-scale incidents. Paging and alerting for fire/EMS should be dedicated to a single conventional channel. This will allow for normal fire/EMS communications with two dispatchers. Note that this only factors in dispatch operations, not the normal call taking for which fire/EMS currently has the primary responsibility.

The current system has adequate channels for fire ground and operations. Any new radio system should have the same or preferably more. One area that will need to be explored by management will be whether ground or tactical channels need to be monitored by the dispatcher. Many dispatch centers do not monitor the tactical and ground channels. For law, the county dispatches on one channel with four sites for the sheriff. This includes most of the smaller local police departments, New York State Police (NYSP), and other state and federal agencies. While using the same repeater pair, both dispatchers and subscribers must select the tower that provides the best coverage. The county is currently installing simulcast on the county law radio system. Simulcast will eliminate the need for dispatchers and subscribers to select the best tower. All of the towers will transmit simultaneously, thus eliminating the need to select the best tower. Simulcast will reduce the dispatcher workload to a limited degree. The statewide interagency 155.370 MHz channel is also monitored. Police departments for Endicott, Vestal and Johnson City each have their own channel, as well as Binghamton. Note that Binghamton also has a second channel, but this is typically not used for dispatch. Broome County Security and BCC Public Safety also operate on an additional channel.

The dispatchers are also responsible for the seven-digit and administrative lines. This requires a minimum staffing of five positions to handle law. It is recommended that law be combined into three simulcast talk paths. Potentially, the configurations would be one talk path for county law that would include the Sherriff's Office, NYSP, Deposit Police, and other state and federal agencies; one for Binghamton and Johnson City Police; and one talk path for Endicott and Vestal. Details of this will be discussed separately in the radio system recommendations and talk path planning studies.



3.2 Separate Call Takers

In the past, only the largest communications centers had separate call takers. In current configurations, even smaller dispatch centers have separated call taking from dispatch. This has been enabled with major improvements in CAD systems, as well as the ability to interchange data between 9-1-1 phone systems and CAD.

Broome County's current operation is to have all positions handle combined call taking and dispatch. Typical dispatch centers the size of Broome County that handles a similar number of phone calls usually separate the call taking function from the dispatch function.

Separating the call taking function allows more efficient operation for the dispatch center while having both the call taker and the dispatcher concentrate on the respective function. In the current operation, it was noted while observing the dispatch operation that the phones ringing while the dispatcher was trying to handle an incident was a distraction, and sometimes a source of frustration for the dispatcher.

Another element that communications centers must look at is the advent of NG9-1-1. While NG9-1-1 may be 10 years away, many areas of the country are already implementing NG9-1-1 networks. The federal government is also making a push to speed up the adoption. With NG9-1-1, call takers will be receiving much more information, everything from text to video, telematics from automobiles, etc. This is analogous to when wireless calls started coming into the PSAP, greatly increasing the traffic, especially during certain incidents. This will require increased focus on the part of the call taker, because the amount of information being presented will demand more concentration from the call taker.

Initially, having separate call takers will increase the communications staff. Using typical numbers, it is estimated that Broome County would need up to eight dedicated call takers to handle the current number of phone calls during busy hours. More detailed analysis of this is presented in the next section.

Note that other steps may be taken to reduce the amount of phone usage. This will be discussed in the following paragraph.

3.3 Dispatcher Responsibilities

Moving forward, the responsibilities of the communications center need to be evaluated. Currently, much of the dispatcher's time is used by non-emergency telephone calls. The communications center needs to review current agreements and practices with client agencies. A staffing analysis is provided for



the current tasks and responsibilities. Besides the normal 9-1-1 and seven-digit public safety traffic, Broome County's staff is responsible for other tasks including calling wreckers, coroners and off-duty Binghamton firefighters, as well as after-hours calls.

The biggest seven-digit phone obligation is the sheriff's line. Interviews with the staff indicated the majority of the calls for the sheriff were not for public-safety needs that require a law enforcement response. It has been stated that roughly 50 percent of the telephone call traffic is on the sheriff lines. Additional call analysis is recommended. During our interviews, it was also observed that many of the calls to the seven-digit local police lines were also for general information. A certain percentage of this is normal for any emergency communications center.

Specifically for the sheriff's office line, an automated system should be used to direct the caller to the appropriate office. Blue Wing understands that the sheriff wants a human to answer all calls for the department. However, an automated system would be helpful in directing administrative traffic. This is more of a policy decision in determining the responsibility of the communications center. If the sheriff's office wants all calls to be answered by a human, then appropriate staff loading and funding for such must be accounted for.

Broome County's operation is also responsible for other types of calls, not necessarily high in volume, but still adding to the total workload of the communications center. Broome has after-hours responsibility for the County Health Department, the Department of Social Services and the Department of Public Works.

Broome is also the clearinghouse for the county coroner. During our observations, we found it to be sometimes elusive to track down a coroner. With the current combined call taker/dispatcher operation, this adds to the frustration during a critical incident.

Other calls that occur on a low volume are county probation and parole. There are also some alarm circuits that auto dial the dispatch center directly.

Requests for a tow truck vary by police agency. A single rotation list by type of wrecker needed would reduce errors and streamline the call-out process.

These factors are distractions that are only amplified with the combined call taker/dispatcher function currently in place. Moving operations to having separate call takers would make the process more efficient, but as stated before, proper staffing needs must account for these other call taking responsibilities.

These telephone responsibilities are not different than many other similar counties. Counties range from having no other responsibility except for 9-1-1 to providing a 3-1-1 call center (or a close approximation thereof). County



management must first determine the tasks and responsibilities of the emergency communications department, and then properly account and fund for the staff loading needed for each. Such an evaluation will not be easy and needs to include not only county agencies but also client municipalities. The forum of policy evaluation would include representation from the county and local government administrations, communications center, and representatives from the client services. A discussion on creating a high-level policy governing board is addressed in a later section.

The Broome County dispatchers also have responsibility for eJustice entry for the sheriff's office and at various levels for other agencies. This is a common responsibility to most dispatch centers, but adds to the overhead responsibilities for Broome County.

3.4 Procedures

Procedures are an area that can have a great effect on the communications center efficiencies. Procedures have several aspects that need to be evaluated. All areas of the operation are affected: dispatchers, trainers, QA/QI, supervisors, management, and the outside agencies themselves.

- Are written procedures in place?
- Are the dispatchers and supervisors trained in the procedures?
- Are procedures being followed (both internal and external)?
- Are the procedures effective and efficient?
- What are the mechanisms for developing procedures?
- What are the mechanisms for enforcing procedures?
- How are procedures communicated to the agencies?

Broome County has written procedures that are detailed and available to the dispatchers. Most of the access is through procedure books and notes. It could improve the operations to have procedures available electronically in an easy-to-use format that can be quickly referenced from the CAD or workstation. Broome County does have procedures available electronically, but some dispatchers are either not aware, or prefer to access the hardcopy books.

Most of the dispatchers seemed well versed in the procedures. There were some comments on the interpretation of some procedures, and a difference in what supervisors perceived the procedures to be. This did not seem to be a major issue.



One area of concern was in using the Emergency Medical Dispatch (EMD) protocol. It is understood that there are some integration issues with the ProQA/CAD interface. We observed that some dispatchers were following the standard protocol, while others freelance. From a liability and consistency of operations standpoint, all dispatchers must follow the same documented protocol. If the desire is to use ProQA exclusively, then issues with the interface need to be resolved.

One procedure that seemed inefficient was calling wreckers. Whether or not this should be done by dispatch could be debated, but the procedure itself in following three different wrecker rotations depending on which agency or local police department, and type of call or vehicle type, seems to be an inefficient use of the dispatcher's time. It also subjects the dispatcher to complaints from the different tow truck companies. This is one area that needs to be simplified

There seemed to be different procedures for various fire departments, and comments from dispatchers that some chiefs want things done their own way. This is a common situation with most communications centers, because fire departments by nature tend to want individualized procedures. The goal would be for all fire departments to be dispatched using the same procedures. Management needs to work with the fire advisory board to streamline and enforce the process. The fire and EMS services need to work to find the correct balance between standardization and addressing unique department requirements. There should be standardization in the following:

- Paging and alerting
- Automatic mutual aid and pre-plan alerting
- Unit and apparatus call out
- Unit and apparatus on-scene arrival
- Dispatch designation of tactical and ground channels
- Tactical communications procedures
- COI communications

The procedures for the city of Binghamton Fire Department are complex and lengthy, and some of the tasks should not be done by dispatch. In most dispatch centers, dispatching city fire is a different procedure than the normal volunteer fire department. It is felt that the Binghamton procedures are more complex than what one would typically expect of a city fire department.

Another problematic task is the off-duty call-back list process. This process should be done by the city fire personnel or an automated system similar to that



used in Johnson City and Endicott. As well as maintaining the radio dispatch and narrative work of an alarm, Broome communications staff then has to make additional phone calls for notification purposes to fire personnel. Our observation is that this process can take up to 30 minutes to complete the list. This additional workload only creates more opportunity for the Broome staff to possibly make a serious error or miss a radio transmission in dealing with the call back. It is understood that Johnson City and Endicott use NY-Alert for calling in backup crews.

Broome County needs to homogenize the fire procedures, and especially Binghamton needs to be brought into a standard procedure that is similar to the rest of the county's fire departments.

Another area of question is the use of IAR (I Am Responding) as a primary part of the dispatch process. Although this is a useful tool, especially for fire stations, most dispatch centers have regulated its use to being an additional secondary information source only. Broome County should either fully implement the use IAR for effective response, or it becomes secondary in nature. There is also the question of need for the redundant pre and duplicate post-tone announcements for fire and EMS alerting. While some dispatch centers make redundant announcements and toning, most have gotten away from this and make a single announcement. Some counties have given daytime mutual-aid companies a single pager tone, thus eliminating the need for multiple tones which Broome has implemented. The use of cell phone based text message alerting is secondary to a public safety alerting system. Cell phone text systems can result in message delays and are deemed unsuitable for primary alerting. This may also be addressed when evaluations are made on the radio system, and decisions are made on single paging and dispatch-only channels.

In examining the law enforcement procedures, there were some of the same concerns as with fire. Most of the law enforcement operations seem to be working smoothly with the exception of Binghamton police. The local police departments' desk officers seem to communicate well with the dispatchers, although we were told that it varies between departments. There were no complaints voiced by the staff when working with the local police other than Binghamton.

Binghamton Police Department is reported to not always follow procedures, and we observed several incidents of units not calling in or acknowledging calls.

A notable issue is during shift changes. For a period of time, up to a half hour, Binghamton police does not respond to calls. This is regardless of how many calls are stacking up or the priority of the calls. This is a public safety issue that needs to be addressed. Although frustrated, the Broome County dispatchers can



only continue to take calls and place them in queue. It was reported that some officers do not consistently call in. We observed that it could take even more time after a shift change for the dispatchers to finalize the on-duty cars and have everyone logged in. Binghamton Police procedures need to be brought into the same mode as the other public safety departments. There are policy standardization and procedures enforcement issues that need to be addressed.

Some other minor comments were noted about the need to call for judges and calls for cabs. In some cases the departments' staff would call for highway departments, and other departments rely on the county dispatch. Although calling the department of public works or department of transportation is typically a dispatch function, policies should be standardized across the departments.

It was also noted that there is also a fairly new procedure to input additional CAD records strictly for Binghamton Police for non-incident related activity. As with other procedures, this is a policy decision, but adds one more item to the staffing burden for the dispatchers, as well as another different procedure for dispatchers to remember.

Another time consuming procedure is the individual call outs of SWAT team members, with a repeated explanation to each individual member. The need for SWAT is not a daily event, but a uniform notification method would be beneficial. Note that since the initial review, Broome County has implemented this procedure using NYALERT.

Other tasks that should be evaluated for efficiency are general motor vehicle stops and other data lookups that are readily available through mobile data for the field units. If the officers are equipped and authorized to do their own lookups locally, then for routine operations it would be more efficient not to involve dispatch.

Another law enforcement area to examine would be the polling for units on the county law enforcement channel. It was observed that at times, the dispatcher could go through several units on the list before getting a response. This method does not seem to be efficient. Law dispatch is usually done in three different ways. Many dispatch centers have gone to a broadcast announcement method, where the call is dispatched and any available unit can be assigned. If all units are equipped with AVL, which several are in Broome, this should allow the dispatcher to properly choose the best unit. Obviously there isn't a right or wrong way, but a method that allows a quicker response should be evaluated.

Another item of concern is the response to 9-1-1 hang-ups. It was noted that Vestal always sends two units on a 9-1-1 hang-up, and that Johnson City may be moving in that direction. Vestal depends upon other activity at the time. Binghamton often does not respond to hang-ups due to high call volume.



Although this is not the dispatcher's function, in the interest of public safety, all departments should follow similar procedures, and should respond with at least one unit.

Most of the comments were focused on Binghamton, both police and fire. Typically city operations are different than more rural areas. They also tend to have more staffing to run operations, especially with fire being full-time paid members. It is expected that Binghamton will have slightly different procedures than the rest of the county.

3.5 Dispatch Staff

One of the issues affecting the staff is the perceived lack of the ability for promotion. Currently there are two positions, dispatcher and supervisor. Many dispatch centers have multiple levels that could consist of call taker, dispatcher I, dispatcher II, and supervisor positions. If Broome County moves toward separate call takers and dispatcher, this would be a good time to look into implementing a few additional levels with the ability to have some upward mobility. Suggested positions would include:

Call Taker – An entry-level position that would answer 10-digit and 9-1-1 calls.

Dispatcher I – This position would include call taking and the ability to dispatch one service – police or fire.

Dispatcher II – This position would include call taking and the ability to dispatch both police and fire.

CTO – Communications Training Officer. This position would include all of the responsibilities of Dispatcher II and recognize the CTO certification.

Supervisor I – This entry-level supervisor would be a working shift supervisor.

Supervisor II – This would be a management position with tasks such as radio, CAD, quality control, training, operations and administrative responsibilities.

Of particular concern was the necessity of shift supervisors working positions of dispatch staff on break. With the supervisors working as dispatchers they are not available to oversee operations and ensure operational compliance. Additionally, they may not be available to facilitate an escalating event.

It was noted that uniforms were cut due to budgeting at the beginning of 2011. While some dispatch centers operate without uniforms, they do add an element of professionalism both internally and externally.



3.6 Shift Schedules

Broome County currently runs a schedule of eight -, 10- and 12-hour shifts, with the majority being 12-hour shifts. Only the 12-hour shift employees get breaks. There are multiple ways to set up shifts, many more convenient than the current schedule. Options include fixed shifts, rotating shifts, weekly rotation, monthly rotation, assignment based on bidding by seniority and seniority not a factor. No one method will suit all employees. The PSAP visits had shown that every communications center had a different type of schedule that worked for its situation. The goal must be what best suits management and a majority of staff.

Broome County uses an extensive amount of part-timers, approximately 30 percent of the staff. Broome should work toward more equal shifts, gradually moving the staff toward all full-time positions. Full-time staffs are desirable operationally, because regular work leads to familiarization with policies and procedures. While the part-time labor pool is seen as an entry point for full-time employment, the desired goal is for more full-time staff. A major area that affects the dispatch staff is the on-call policy. Although part-timers are initially called first, off duty full-time staff is quite often called back in for duty. A re-evaluation of the on-call policy is recommended to ensure that the full-time staff is able to properly utilize their time off. With the increasing high call volume and the stress assigned to this career, time off is important for the staff. Time off enables them to defuse and stabilize away from the high-paced environment of dispatch. It appears that the current on-call process creates additional stress and tension among the members of the staff.

Many of the dispatchers only work certain positions. On any given shift, up to 50% of the staff report to be not "comfortable" working certain positions. Ideally all dispatchers should be trained and rotated through all positions. Some dispatch centers have multiple rotations during each shift. This keeps the dispatchers current on all positions and reduces the stress level of being on one high-stress position for the entire shift. If call takers are made separate in the operation, this may be a good time to add a fixed rotation so that dispatchers may get a less stressful break during the shift. Some large dispatch centers have gone to three tiers of dispatchers. Dispatcher I is a 9-1-1 call taker, Dispatcher II is a 9-1-1 call taker plus fire/EMS or law enforcement radio dispatcher, and Dispatcher III is a 9-1-1 call taker plus fire/EMS and law enforcement radio dispatcher. As employees obtain proficiency at a higher tier, they are rewarded with an increase in base pay.

The supervisors must be competent on each position so that they are aware of the details given any outstanding situation. Under the current schedule, with the supervisor providing much of the needed coverage during breaks, this is in theory already being done.



3.7 Supervisors

One of the most outstanding issues found was that the supervisors cover the 40-minute breaks that dispatchers get during the shift. This means that on a given shift, up to seven dispatchers breaks need to be covered or 280 minutes (4.75 hours). During this time, the supervisor is not truly available to “supervise.”

Supervisors need to supervise and be available for decision making, fielding questions and overall support to the on-duty staff. By allowing supervisors to cover staff on breaks, this creates a gap in supervision in the dispatch center. Most supervisors have extra tasks that are not completed due to covering breaks.

An acting or assistant supervisor position is needed. There are times when the shift supervisor is not available or committed to another task. The acting or assistant supervisor would provide backup to the shift supervisor. While on duty, the acting supervisor should be compensated for holding this position. The average span of control in dispatch is one supervisor for five dispatchers. With Broome County having a total of nine staff on duty, allowing the acting supervisor to take on more responsibility would balance the supervision for the staff. It would also provide another step in a career path.

Most dispatch centers the size of Broome typically has two supervisory personnel on each shift.

The Broome County shift supervisors also wear multiple hats. One supervisor sets up all shift assignments, assists on QA/QC, etc. Accommodation for these additional tasks needs to be recognized.

There also needs to be official shift communications from the shift supervisor at the beginning of the shift. Starting the shift with a review of recent calls, changed priorities, issues to be watchful of, important announcements and other items must be part of every shift.

Supervisors also need to be more involved in the enforcement and communication of procedures. Several dispatchers noted that there is a perceived lack of enforcement by some staff. This also extends to external procedures and QA/QI. The staff report that they do not get consistent feedback on issues on external enforcement or policy compliance.



3.8 Training

The current in-service training, although meeting the NYS 21 training hours, needs to be revamped. Having only two or three in-service six- to eight-hour training sessions per year is inadequate. Monthly or quarterly training sessions would be more effective. Training topics that relate to the dispatcher skill sets are vital to promote and maintain professionalism. Topics could include, but are not limited to, core competencies, law enforcement, fire and EMS programs, domestic violence, gang violence, bullying and industry trends.

No programs for supervisory training were noted. Supervisors should receive training to support their position. Topics would include compliance with policies and procedures, supervision, human resources policies and procedures, disciplinary policies and procedures, performing evaluations, and rewarding exemplary work. It is noted that a training plan is currently being put into use.

The new shift supervisor is promoted from the dispatcher ranks. The new supervisor is then required to supervise staff who were previously peers. For many new supervisors, this is a difficult transition. The supervisor needs not only communications center related skills but management skills to allow the employee to be an effective supervisor.

Recurring training for communications staff and supervisors is recommended. Formal recurring training is necessary to maintain professionalism and proficiency. At the end of training, the employee must demonstrate proficiency in the tasks and skills of their position. It is important for management and supervisory staff to be consistent with the application of staff and operational policies. Senior management must provide a list of tasks and responsibilities for each senior position, along with expectations and performance standards.

Currently, the TC (Training Coordinator) is not located within the same area as the communications area. The TC should be local to the dispatch area and available.

3.9 QA/QI

The staff trainer, who is also assigned to perform QA/QI, has an office that is not located within the dispatch center. The invisibility of this position does not help the overall effectiveness of the staffs' daily performance. The trainer needs to be assigned a position or office within or adjacent to the dispatch area. The relative location to the dispatch floor is important so that the trainer may receive first-hand knowledge of current issues and problems. This may include call handling,



EMD, active listening, policies and procedures, as well as to assist with escalating incidents.

Besides responding to specific call complaints, a regular program of monitoring each dispatcher's performance needs to be implemented. This is to ensure that each dispatcher and supervisor is reviewed and evaluated at least twice a year. Testing of skills and procedures should also be done at least bi-annually for each staff member.

A feedback mechanism should be put in place through the supervisor so that the dispatcher gets constructive comments.

It was noted that while the dispatchers get limited feedback, lapses of user agencies typically went unresolved in the eyes of the dispatchers. Dispatchers need to get consistent feedback.

It was observed that many complaints from the local police departments and the sheriff's office go directly to the dispatcher through the administrative lines. There needs to be a policy for addressing issues and complaints from user agencies. These need to be directed immediately to the supervisor and QA/QI for analysis. The dispatchers should not need to deal with these complaints first hand. Although a policy is in place for reporting these complaints, dispatchers are frequently failing to inform their supervisor.

3.10 Management

The management team needs to add rigor to the management of the communications center. Elements would include:

- Consistent enforcement of staff-related policies.
- Consistence enforcement of standard operating procedures.
- Review and commitment to staff tasks and responsibilities.
- Continued outreach to user groups.

Management needs to select a fixed day and time to meet with senior staff. This would allow for the exchange of information, obtain task status updates and review policy compliance. There needs to be a better informational communications mechanism in place for the entire staff for feedback both ways. The current process of two annual meetings does not serve the best interest of employees or management.

Annual performance evaluations need to be reviewed. Although county policy does not require this, management needs to maintain reviews as part of the



feedback mechanism. Evaluations need to be subjective, bi-directional and provide performance goals for the staff. This lack of task sends a message to the staff that their feedback, good or bad, is not important. Without these evaluations, the staff has no goals established to improve upon.

It was generally perceived that from the dispatchers point of view, there is a disconnect in communications with management. An official feedback mechanism needs to be established for internal communications. The information flow should be to and from communications staff, shift supervisor, mid-level management to senior management.

Supervisors need to provide an update for each shift. Although this is done by some supervisors, it is not regularly enforced for all shifts. Regular meetings should be held with management visible to the dispatch staff. Management does attempt to have a meeting every three to four weeks.

This lack of a feedback process for the dispatchers is reported to make some feel that they are not heard and therefore do not bring forth items that need to be addressed. Even items such as equipment maintenance are reportedly not communicated, because it is perceived that nothing will be done about it. Feedback is fundamental to the basic moral of the department

3.11 Governing Body

When the Broome County consolidated communications center was created, the local communications functions from the municipalities were simply relocated to the county. Instead of a local dispatcher taking and dispatching calls, a county dispatcher at the county communications center now performs that function.

As individual municipalities moved their call taking and radio communications function to the county, various agreements were made and there was apparently the assumption that each municipality could receive communications services unique to its operations. The result, according to staff, has been various communications policies and processes. From the dispatch center perspective, the more uniform the communications policies, the fewer dispatch procedure variations, and thus the greater ability to provide a uniform communications service. The desire for uniformity needs to be balanced with the need to provide unique services to meet individual service and agency requirements.

From the other communications centers visited by Blue Wing and county staff, there were two ways of policy development.

In a few cases, the consolidated center receives input from the user community and then develops a policy. User agencies follow the policy and directive. In the



models that were reviewed, there is a high degree of trust and cooperation between the consolidated communications center and user agencies.

In the more common model, there is a policy and procedure governance body. The governance body has representatives from law enforcement, fire, EMS and local government. The governance body represents the user agencies and municipalities. There is a governance document that defines the responsibilities of the county and the member agencies. The governance document defines how operational policy is developed and enforced. It would also define a process for resolving disputes between the communications center and users.

The challenge will be to find the procedures that are common to all, while understanding and accommodating the uniqueness of agencies. Areas of commonality could include:

- 9-1-1 call taking
- 9-1-1 hang up calls
- 10-digit call taking and transfers
- Use of Emergency Medical Dispatch
- Priority of dispatch
- Emergency fire/EMS alerting messages
- Mutual aid fire/EMS alerting – stand orders and preplans
- Routine police dispatching
- Emergency police dispatching
- Routine EMS dispatching
- Emergency EMS dispatching
- Appropriate use of communications, tactical and ground talk paths
- Coroner notifications
- Wrecker notifications
- Highway department and DOT notifications
- Tasks that can be entered into CAD and the dispatcher prompted with a recommendation from CAD.

Although there is the Fire Advisory Board and the Law Enforcement Communications Advisory Committee, it appears that neither committee has the



actual overall control to enforce policy and discipline or support all the agencies governed by the Broome County 9-1-1 staff.

With a new radio system being considered, this is the time to form an effective committee structure with the proper communications and enforcement capability. The fact that Broome County has been “accommodating” since its inception will be hard to overcome, but the current situation limits the overall effectiveness of the communications center and the service provided to the users. With ongoing budget constraints, Broome County needs to assert its position so that it can have efficient and effective use of its dispatch staff.

3.12 Equipment

Most of the equipment with the exception of the E9-1-1 telephone phone system is old. This is commonplace among established dispatch centers with the normal budget process. The furniture is worn. The chairs are in need of cleaning and replacement. Many of them are badly soiled, and several are broken. It was observed that filters for the console are clogged and need replacement. In places, wiring in the consoles was hanging loose. .

The radio consoles appear to be in good order. Problems with headsets were noted. Headsets are notoriously high-maintenance parts. There are several headsets with missing battery covers. On occasions, the dispatchers had problems transmitting. The source of the problem is unknown. Problems with the phone system were observed. There seem to be several bad lines, with the Endicott direct line consistently bad. There are multiple instances of echoing. Some of the keypads seem to be intermittent. In one instance, the dispatcher was unable to hang up the phone. The cause of the problems, remedial efforts and problems reported by staff are unknown. These issues need to be addressed with feedback to those reporting the problem.

The CAD system is old, but still effective. The current size of the monitors limit the amount of viewed information, especially on status screens. The CAD upgrade will eliminate some of this, as most of the newer CAD software uses smaller fonts and more compact displays. There were some integration problems with the EMD software, ProQA. No other problems were observed with CAD or mapping.



3.13 Future Equipment Considerations

The county is already in the planning stages of a new radio system. This will most likely include the purchase of new radio consoles, which will by default, bring them up to date with newer features and technologies. One of the key items will be to consolidate radio channels, preferably allowing one channel per dispatcher. This will facilitate a more efficient dispatch operation and make the transition to separate call takers and lessen the increase to staff as call levels increase.

Paging should be consolidated to one channel for fire and EMS. Broome may also want to explore digital paging. Besides the decreased cost, digital paging uses less air time and allows more information to be sent.

Broome may also want to explore using some of the built-in status capabilities when the county purchases new radios. Because the features would be available for portables and mobiles, it could allow for efficient response from the units without voice activity or the need for mobile data terminals. Broome County had mobile data in most law units. Broome should explore increasing the usage of MDTs for routine dispatch. Field units should be encouraged to make great use of the capabilities. Adding the capability to fire/EMS would also make for more efficient operation.

When purchasing computer monitors, plan for the largest displays that are feasible. The amount of information being fed to the dispatchers will only increase, especially with the advent of NG 9-1-1.

Broome County should also explore its Internet usage. This becomes a larger part of the dispatch environment, but also opens up the possibility of viruses or other attacks on the network. Internet should be on its own workstation, and preferably be on a separate network than the public safety systems.

3.14 Facilities

It was observed that the dispatch room needs a thorough cleaning. Broome had just experienced an unusual amount of activity and personnel due to the flooding incidents. A regular cleaning schedule needs to be implemented, with the cleaning to include the dispatch room, all surfaces, and the HVAC and ductwork. Currently it is up to the dispatch staff to clean on Sunday nights if "time is available." Although this time period may be the lowest level of activity for the week, time may not always be available.

The room itself is not an ideal dispatch environment. The current operation has outgrown its facilities. Besides the overcrowding and poor acoustic environment,



HVAC does not appear to provide sufficient for airflow and proper circulation. The overhead fluorescent lighting is also not ideal for a dispatch environment. In dispatch centers, task lighting is preferred.

Broome County tests the generator on a regular basis, but it was noted that the generator was not tested under full load. This is not sufficient for testing; generators need to be exercised under full load to ensure that all parts of the system are capable of handling the load.

Broome County does not have a full functioning backup center. The library location provides for phone and CAD only, and is not sized or equipped for dispatch. This forces the county to depend upon many of its individual agencies to provide for dispatch operation. In case of any long-term loss of the main center, this could effectively shut down normal dispatch operations for a long period of time. A full functioning dispatch center should be provided and planned. With the upgrade of the radio system, this would be the proper time to analyze needs, network feeds and access to plan the feasibility.

3.15 Future Facility Considerations

Broome County emergency communications has outgrown the current facility. In looking for a new facility, it is preferable that the dispatch operations have its own facility and not share the space with another agency. If shared, the communications center should be totally separate from any other facility tenants, including its own parking.

The location needs to accommodate proper diversity in network feeds, preferably using both fiber and microwave.

Proper attention should be paid, allowing ample room for offices, training areas and an area for use by OEM. Facilities should provide for locker and shower areas, bunks, quiet rooms, conference areas and kitchen areas. The center should be self-sustaining for at least 72 hours and preferably for a week.

In evaluating a new site, or an existing building, it is recommended to refer to the FEMA Risk Management Series (RMS) publications. Although written for terrorist attacks, the FEMA documents provide some good reference material that can be applied to any public safety building. In particular:

- FEMA-426 Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings
- FEMA-427 Primer for Design of Commercial Buildings to Mitigate Terrorist Attacks



- FEMA-452 A How-To Guide to Mitigate Potential Terrorist Attacks Against Buildings
- FEMA-459 Incremental Protection for Existing Commercial Buildings from Terrorist Attack

From the Natural Disaster RMS Series:

- FEMA-543 Design Guide for Improving Critical Facility Safety from Flooding and High Winds

3.16 Summary

Broome County is a large enough center to change operations to separate call takers and dispatchers. Broome has a larger percentage of non-9-1-1 calls than most dispatch operations of equivalent size. This move needs to be coordinated with a consolidation of channels on the radio system. Additional staff is needed for separate call takers due to the inability to consolidate dispatchers because of the multiple dispatch channels needed on the current radio system.

The current facility has been outgrown and is not suitable for the current size of the emergency communications operations. A new facility should be provided, preferably with the upgrade of the radio system. The facility should be sized for future expansion because it could be up to 20 years before the next upgrade is realized. Along with the new facility, a full functioning backup center needs to be provided. Currently Broome does not have capable backup for a long-term loss of facilities.

Broome County needs to evaluate the operations of its management staff. Supervisors need to be available, and a mechanism for providing coverage during breaks that does not involve the shift supervisor needs to be put into place. Bidirectional communications needs to be improved and a system needs to be put in place to facilitate consistent information flow in both directions.

Procedures need to be evaluated and enforced. Along with increased and proper training, QA/QI procedures need to be more visible and provide the proper feedback mechanisms to both the dispatchers and supervisors. Procedures need to be simplified and homogenized among the agencies. Although Broome County does have a Fire Advisory Board and a Law Enforcement Advisory Committee, it appears that neither committee has the control to develop, support and enforce policies and procedures needed for effective emergency communications. It is suggested to form one overall governing body that oversees this effort in the best interest of all agencies served by the emergency communications center. The city of Binghamton police and



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fire need to follow the same mutually agreed upon procedures as other municipalities. Although their operational needs may be different than the rest of the county, there is still need for uniformity.

The shift schedule should be analyzed, especially if moving toward separate call-takers and dispatchers. The need for part-time dispatchers should be examined with the potential of moving to a full-time staff only or reducing the reliance of part time staff. On-call staffing needs to be examined in a way that has least impact on the dispatchers' scheduled time off. Migrating to a multi-tiered staff positions may allow more flexibility in this, and reduce the reliance on part-timers.



4 Attachment I – Staffing Need

The number of call takers is determined by the level of service given to a particular class of calls. For example, in New York state the E-911 Wireless guidelines has established that 90 percent of the wireless E-9-1-1 calls shall be answered within 10 seconds. While some communications centers use the same performance criteria of non-emergency calls, there is a cost in maintaining such a high standard. Alternatively, non-emergency calls can be answered less quickly and still provides a satisfactory level of service to the public.

Under normal conditions neither E-9-1-1 nor 10-digit calls arrive uniformly throughout a 24-hour period. To address this factor, average hour and busy hour staffing levels are determined. While there are times of day variances, there are also day-of-the-week and seasonal variations. Extraordinary events can completely overwhelm the call taking operation. For these occasions, plans need to be in place to allow the E-9-1-1 call to be redirected and then the call information to be dispatched to the appropriate responders. The estimates for average hour and busy hour do not address extraordinary operations.

Determining the actual number of call takers requires looking at the predicted requirements, determining the impact of the time-of-day factors and making adjustment based on local conditions.

The following table shows a recommended staffing level using Broome County’s call statistics and incident reports. The number of call takers was based upon Erlang calculations. Details of these statistics are shown in the comparison section of this report. The number of dispatchers was based upon a talk path plan using three channels for law. One dispatcher would be required on each channel, with two dispatchers on fire/EMS. Due to the higher activity level, it is recommended that an additional dispatcher be available after noon to assist during periods of higher activity.

Time	9-1-1	7-digit	Dispatcher	Asst. Super	Supervisor	Total Staff
M-F 0000-0600	1	3	5	1	1	11
M-F 0600-1200	2	4	5	1	1	13
M-F 1200-0000	3	5	6	1	1	16
S-S 0000-0600	1	3	5	1	1	11
S-S 0600-1200	2	4	5	1	1	13
S-S 1200-0000	3	4	5	1	1	14

Table 4-1: Call Staffing by Time of Day

An analysis for full-time equivalent (FTE) staff shows the need for 34 call-takers, and 29 dispatchers and 10 assistant supervisor/supervisor positions.



Blue Wing

Blue Wing recommended that the county does not use the supervisor in a dispatcher capacity. Blue Wing also recommended that the county have a second supervisor or assistant supervisor available on each shift. The preceding table shows the recommended minimum requirements. It is recommended that the second supervisory position could be available for call taker overflow.

The ACD could be programmed similarly to the current programming, where the first group is the call takers, the second group would be fire/EMS, and then to the supervisory positions.