



DRAFT REPORT SECTIONS

THRU 2ND BRIEFING

April 29, 2019



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EXECUTIVE SUMMARY

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SECTION 1 – INTRODUCTION

[THIS SECTION WILL BE ADDED WHEN THE FINAL REPORT IS ASSEMBLED]

SECTION 2 – OPERATIONAL OUTLINE PHASE ELEMENTS

1. TRANSITION PLAN FOR DISPATCH CENTERS

Develop a process to transition up to five separate dispatch centers into one consolidated regional dispatch center with limited disruption, including recommending any services that should remain with the local communities.

The orderly transition to live operations will be a key success factor for CCPSA’s regional dispatch operation. Unless some compelling event requires this transition to take place for all five operations at the same time, IXP recommends that the transition be planned as two phases. In the first phase, the operations of Colchester, South Burlington, Williston and Winooski would be migrated to CCPSA operations. Then, in the second phase, Burlington would join CCPSA operations.

In preparation for the first phase, all of the personnel from the existing centers would need to undergo training on the new systems at CCPSA and the operational policies and procedures of CCPSA. This training would not need to encompass training on PSAP 9-1-1 CPE or call-taking processes since this functionality and responsibility won’t be added until after CCPSA dispatch operations are up and operational. From IXP’s experience with similar transitions in other agencies, we recommend the following characteristics for this training cycle:

- The process would commence with selecting at least one person from each of the five agencies to serve on a working group that would develop the training material for the new CCPSA operation. This approach starts the process of building stronger links between all the personnel that will be joining together in the new operation and leverages their local knowledge and experience with their home agency as the training material for CCPSA is developed.
- Typically, these are personnel already serving in a training capacity for their home agencies. As the CCPSA operation develops (facility, systems and operational policies/procedures) this training group would gather appropriate information for this training material. Time spent organizing this information and reading the training program is absorbed by the home agencies to keep CCPSA costs low during this phase of transition.
- This group would also form the cadre of personnel needed to conduct the training. Typically, this training is scheduled to commence before the final fit-out of the new center is completed so that the early sessions focus on policies/procedures and the later sessions focus on the specific systems at the new center (after they are fully installed and tested). The training cycles are also timed so that as

short a time period as possible elapses between the completion of training and the commencement of live operations. Typically, the training wraps up about 2-4 weeks before the planned start-up date.

- Training needs to be conducted in at least two parallel tracks so that the working schedules of all the current employees can be accommodated. Wherever possible, the personnel attending each track should be from all of the agencies to help build the team environment before they move together in the CCPSA center. As with the training personnel, it is typical for the overtime costs needed to send personnel to training to be borne by the home agencies.
- If new-hire employees are needed to meet the start-up staffing levels, it is advisable to do as much of their training with the existing employees as possible. When the local team can't meet all of the training needs for the new personnel, a combination of online or outside training can be used to supplement their training to get them ready to join the experienced team at the start of live CCPSA operations.
- Outside training support should also be engaged on specific system use skills for systems like CAD and radio consoles. This will allow those trainers to focus on the nuts-and-bolts on how to use the system and the CCPSA trainer cadres to focus on the operational side of how those systems have been configured for use in the new operation.
- It is recommended that Burlington's personnel be included in all of the training development and receiving training, even if they are sequenced for migration as a second phase. This will help build the team cohesion for CCPSA's operation and allow the Burlington personnel to better understand their backup role while Burlington is still operational before cutover to CCPSA operation. Depending on the time interval between phase one and phase two, a short refresher training cycle may be needed for the Burlington personnel before they move over to CCPSA operations.

The actual transition to live operations phase one should take place in as short a timeframe as possible, ideally in a single operational day. A common approach is outlined below:

- On the day of cutover, the staff for the first shift of CCPSA operations (at the staffing level to support the workload of the first four agencies) would report to the new facility and ready themselves for operation. Each of the existing facilities would also be staffed and operating as normal at the start of this day.
- In preparation for live operations, these personnel would confirm that radio communications are working to the field units they'll be taking on, and that they are ready with CAD to handle live operations.
- Then, one-by-one the telephone circuits from the existing centers will be swung over to the new center. Following a few test calls, the new center will know that inbound calls will be coming to them and the existing center will confirm that no new calls are arriving at their location.
- The new center would then take control of the radio channels and units on the air, and commence live operations for that agency. Personnel at the home center would remain in place for a period of time to make sure everything was stable and that the CCPSA center was handling all of their units

and calls. They would then log off their systems and leave work, preparing themselves for whatever their next shift assignment is at the CCPSA center.

- The transition for phase two (Burlington) would follow a similar pattern whenever it was decided to make this second transition.

Many of the functions currently performed at the individual dispatch centers can continue to be done from the regional facility through combinations of technology and process changes. For example:

- Each of the centers have some degree of direct interaction with the public in the lobby of their police facility. This functionality is typically maintained when regionalized dispatch is implemented by establishing either ring-down phone lines or a video/audio 'kiosk' in the lobby of the police station that would no longer have a staffed window. Dispatchers at CCPSA could interact with people entering the lobby and provide needed information or dispatch appropriate resources if needed. They would not be able to support functions such as exchanging paperwork, taking payments or similar transitions requiring direct interaction with the public, so these processes would need to be restructured by each agency to meet their local needs and conditions.
- Similarly, each of the current centers has the ability to use a variety of video sources to monitor/observe security cameras around their facility. These feeds could be provided to the CCPSA operation so this functionality was available at the regional center when needed.
- The remote video capability could also be extended from the cameras that monitor things like sally ports, booking areas and holding areas as well so that CCPSA personnel could provide this extra layer of monitoring when officers were actively working in these areas. Controls for sally port and other secure doors in these areas should not be remoted to the CCPSA facility. This will require each agency to modify their procedures on how the staff these areas when they have a subject in for processing.
- Each of the current centers support a number of activities that place them in routine interaction and support of officers as they come into the station to process subjects or reports. This includes things like running criminal histories and pulling other records information from RMS systems. These support functions could still be provided by the regional center, but the interactions with officers would be through a combination of remote printing and telephone conversations rather than face-to-face interactions.
- Each of the current centers also provide a wide variety of administrative support functions for their agencies. These functions typically do not migrate well to a regional dispatch operation and each agency will need to undertake some process restructuring to meet their individual needs within their individual resources.

2. HANDLING TELEPHONE CALLS

Develop a process to handle phone calls from different CCPSA member communities based on input previously received from police chiefs regarding what processes must stay at local police departments, what processes should be handled by regional dispatch, and processes on which decisions must be made including: 9-1-1 calls; business lines; non-emergency calls for service.

9-1-1 CALLS

During the initial period of operation, 9-1-1 calls will be handled as they are today, with one of the PSAPs on the state network transferring those callers to designated 10-digit lines at the new CCPSA regional center that will be handled on the general telephone system at the center. As a secondary-PSAP in this type of operation, the CCPSA center will seldom need to transfer 9-1-1 calls to any other dispatch center since they will only be receiving 9-1-1 calls emerging from within their service area.

Once the State agrees to allow the center to become a regional PSAP, 9-1-1 telephone system equipment will be installed, and personnel will need to be trained to meet the statewide standards on 9-1-1 call receiving and processing. It is important to remember that once the CCPSA center becomes a PSAP in the State network, they will be handling calls from more than just their own communities. The state will assign the CCPSA PSAP what is known as a Catchment Area, which is the group of communities from which 9-1-1 calls would be routed to the CCPSA center. Presumably this Catchment Area will match the CCPSA member agencies, but the final configuration will need to be worked out with the State.

In addition to calls from the Catchment Area, the CCPSA PSAP will also receive 9-1-1 calls that would normally be routed to one of the other PSAPs but can't be routed there because all available Call Receivers are already engaged in processing a call. These calls will need to be screened and then transferred to the appropriate dispatch center for further processing.

NON-EMERGENCY CALLS FOR SERVICE

It is common for public safety agencies, particularly police departments, to have published 10-digit lines that encourage the public to use when they have a need for services that they may not think are of an emergent nature. Unfortunately, the public's perception of what is and isn't an emergency (or what should or shouldn't result in a unit being dispatched) doesn't always align with the agencies' intended service levels. Therefore, it is important for the CCPSA regional dispatch center to still receive these calls so they can be screened to determine if a response is needed or refer the caller to another non-emergency resource.

It is also common for public safety dispatch centers to provide after-hours answering of 'emergency' lines for various public works functions. Reports of issues are captured and then relayed to the appropriate contact points for those public works agencies (which are typically multiple personnel assigned to some sort

of after-hours callout rotation). This function could also be integrated into the CCPSA regional dispatch operation so that the individual jurisdictions didn't need to redesign this process in their organizations.

BUSINESS LINES

The handling of routine 10-digit business lines is the area that typically causes the most debate when new regional dispatch centers are being planned. Typically, the existing centers become some form of main answering point for business-related calls for their agency, even if other direct 10-digit numbers are published for various internal functions of the organization (such as investigations, records, etc.). Ideally there would be solid statistics already in place with each of the existing centers to understand how many calls this actually entailed so that judgements could be made on whether this workload could be continued at the regional center.

Since this body of data does not exist, IXP recommends that to the extent possible within the capabilities of the existing telephone systems at each of the existing centers, these lines be forwarded to lines at the regional dispatch center. This will allow the regional center to build a solid statistical understanding of the actual volume and complexity of these calls so that a more informed decision can be made as to whether this workload can be sustained at the center. If it is found that the regional center is unable to sustain this workload without impacting service levels for emergency call processing, subsequent work can be done at each agency to redesign their internal processes and staffing to take this workload back inhouse.

It is advisable to complete this interim strategy and workload analysis before the transition process begins for bringing the center into the statewide 9-1-1 PSAP network so that a solid understanding of current workload is in-hand before shifting to the final staffing configuration to fulfill 9-1-1 PSAP responsibilities.

COMMUNITY ENGAGEMENT AND EDUCATION

Throughout the process of establishing CCPSA regional dispatch operations and becoming the primary PSAP for your designated Catchment Area, it will be essential for CCPSA and each of the participating communities to engage in ongoing public education and outreach efforts. From IXP's experience, the creation of a new regionalized emergency communications center creates a perfect opportunity to re-focus the public's attention on the appropriate uses of 9-1-1, non-emergency and business telephone numbers, and help the public understand the best ways for them to access the services they need.

3. DEVELOPMENT OF POLICES, PROCEDURES AND PRACTICES

Consider current dispatch center policies, procedures and practices and develop/recommend public safety communications policies and procedures that are consistent with industry best practices and standards.

The development of the specific policies, procedures and practices for the regional communication center will likely be one of the most time consuming and challenging aspects of establishing the organization. While it is important that these documents be developed to reflect industry best practices and standards, it is even more important that they reflect the local service delivery and operational requirements of the communities and agencies being served.

The process of developing these documents should begin in advance of commencing the training processes outlined in Item #1 above. This will allow key policy and operational procedure decisions to be thoroughly debated and decided before the training material is developed and training commences. This will also allow the completed policy and procedure manual to become an integral resource during the training process.

IXP recommends creating a policy and procedure development workgroup and attempting to get representation on this group from each of the existing communications centers, along with a single representative from the law enforcement community, one from the fire service community and a final member from the emergency medical services community. This group of 8 individuals would take on the responsibility for reaching consensus on the Table of Contents for the policy/procedure documentation and gaining approval for this from the CCPSA governing process. It is also recommended that the Director for the CCPSA regional center be brought on board before the policy and procedure process begins so that this individual can lead and be engaged in the process from the outset.

With the Table of Contents in place, the process would then commence in drafting the individual sections to the document. Typically, this work is assigned across multiple individuals in the workgroup based on their area of expertise. Periodic joint workshops are held to make sure each subgroup is making progress according to the schedule established at the start of the process. As individual sections are completed, the workgroup would review and edit as needed so that consensus was reached, and the section would then be forwarded to the CCPSA governing process for final review and adoption.

From IXP's experience this type of incremental approval process is preferable to waiting until the entire document is complete and attempting to do the final review and adoption process in one large effort. It is also advisable to implement some form of online document management platform (such as PowerDMS) to manage the development, dissemination and management of this material.

An example table of contents is provided below. This structure comes from a regional communications center provides both multi-jurisdictional and multi-disciplinary dispatching services and has been in operation for over 40 years. Therefore, this table of contents has been refined over time to be one the best

all-inclusive examples that IXP has encountered in our work with agencies across the country. This agency is also accredited by the Commission on Accreditation for Law Enforcement Agencies (CALEA) and the Association of Public-Safety Communications Officials (APCO) so it represents a structure that meets current industry standards and best practices.

While every section of this example may not be pertinent to the final operational structures and strategies adopted by CCPSA, it provides a useful starting point to get the workgroup process underway.

ADMINISTRATION

- Policy #100 Organizational Structure/Chain of Command/Authority
- #101 Liability Protection Program
- #102 FCC Rules and Regulations
- #104 Industrial Accident/Illness Leave
- #105 Jury Duty
- #106 Leave of Absence Without Pay
- #107 Maternity Disability Leave
- #108 Military Leave
- #109 Maintain Residence Telephone/Address
- #111 Peaceful Performance of Duty
- #112 Outside Employment
- #114 Overtime/Compensatory Time
- #115 Salary Administration
- #116 Trade Procedures
- #117 Sick, Bereavement, Administrative & Emergency Leave
- #117A Family Medical Leave Act
- #118 Suggestions
- #119 Americans With Disabilities Act Policy
- #120 Work Schedules
- #121 Inquiry Processing Procedures
- #122 Time Off Procedures (Vacation, Holiday & Comp)
- #123 Administrative Reporting Program
- #124 Calls For Service
- #125 Reporting Improper Governmental Actions
- #126 Fitness For Duty
- #127 Risk Management
- #128 Temporary Assignments Due to Injury/Illness

PERSONNEL

- Policy #200 Personnel Policies & Practices
- #204 Disciplinary System & Appeal Process
- #205 Recruitment and Selection Practices
- #207 Equal Opportunity Employment

- #208 Administrative Employees Salary & Benefits
- #209 Performance Evaluation System
- #210 Personnel Files
- #211 Classification Plan & Position Job Descriptions
- #212 Trial Service Period
- #214 Promotion
- #215 Personnel Early Warning System
- #216 Resignation/Dismissal/Termination of Employment
- #218 Benefit Programs
- #219 Supervisory Files
- #220 Training
- #221 Specialized & Rotating Assignments
- #222 Educational Benefits
- #223 Collective Bargaining
- #224 Orientation
- #225 Relief from Duty

MISCELLANEOUS ADMINISTRATION

- Policy #300 Attendance, Notification, Tardiness & Time Sheets
- #301 Rest & Meal Breaks
- #302 Charitable Solicitations
- #304 Forms & Disposal of Sensitive Materials
- #305 Memo Book
- #306 Recognizing & Rewarding Good Performance
- #307 Personal Appearance
- #308 Employee Conduct/Code of Ethics
- #309 Safety
- #310 Community Education, Social Media & News Releases
- #311 Smoking Privileges
- #312 Security, Visitors, Vendors & DHS Threat Levels
- #313 Workplace Violence
- #314 Facility Cleanliness
- #315 Chaplaincy Program
- #316 Employee Wellness
- #317 Release of Public Records
- #318 Written Directive System
- #350 Planning & Research
- #351 Organizational Mission, Purpose, Vision, Values & Goals
- #352 Performance Measurement Program
- #353 Quality Assurance Program

TELEPHONE PROCEDURES

- Policy #400 Personal Telephone Calls
- #402 Processing of 911 and 10 Digit Telephone Lines
- #404 Telephone Liability
- #405 TDD/TTY Accessibility
- #406 9-1-1 Hangup Calls & Open Lines
- #411 Non-English Speaking Callers
- #412 Downloading/Advised Incidents/In-Station Reports

MISCELLANEOUS

- Policy #501 Electronic Messaging
- #502 Miscellaneous Equipment in Communications Center
- #503 Text Messaging and Retention
- #505 Management Information System (MIS)
- #510 Incident Processing, Canceling and Unit History
- #515 Jurisdictional Boundaries
- #520 Call Type Classification (Typecodes)
- #523 Agency Involved Domestic Violence
- #525 Bloodborne & Airborne Pathogen Hazards
- #550 ACCESS/Data Inquiries & Returns
- #551 Criminal History Use and Dissemination
- #560 Communications Recordings
- #570 CAD Safety Warnings
- #580 Emergency Alert System (EAS)

POLICE PROCEDURES

- Policy #610 Police Dispatch Technique
- #611 Officer Availability/Sergeant Notifications
- #617 Alarms (Police)
- #619 Restricted/Closed Air/Marker Tones
- #620 Mobile Data – Police Procedures
- #622 Data/Overflow Dispatcher Procedure
- #640 Police Electronic Emergency Alerts
- #645 Officer Safety/Critical Incident Control
- #650 Serious Injuries to Children
- #651 Missing/Endangered Children or Adults
- #655 Manual Police Dispatch Procedures
- #660 Volunteers – Police Departments

FIRE PROCEDURES

- Policy #710 Fire/EMS Dispatch Technique
- #711 Fire/EMS Radio Conduct
- #717 Firefighter Safety Procedures

- #720 Fire/EMS MDT Dispatch Protocol
- #726 Medic Dispatch Procedures
- #728 Medical 911 Calls from Hospitals
- #730 Ambulance Response
- #735 Fire Department Move-Up/Cover Procedures
- #737 Fire Department Mutual Aid Procedures
- #740 Special Response Procedures
- #741 Airlift Procedures
- #743 Port of Seattle Mutual Aid
- #744 Multiple Casualty Incident (MCI) Procedures
- #745 High Call Volume Events
- #746 Earthquake Response Procedures
- #755 Manual Fire/EMS Dispatch Procedures
- #760 Dam Procedures
- #766 EOC Activations

TECHNICAL - MISCELLANEOUS

- Policy #900 Information & Information Security
- #901 Electronic Data Storage
 - #910 Alphanumeric Paging
 - #920 Personal Mobile Device

FINANCIAL - MISCELLANEOUS

- Policy #1000 Property Control/Capitalization
- #1001 Equipment Replacement
 - #1003 Cash Management
 - #1004 Travel and/or Expense Reimbursement
 - #1005 Credit Card Use
 - #1006 Budget
 - #1007 Purchasing and Contracting Policy
 - #1008 Donations

GENERAL ORDERS (these are holdovers from an original General Orders approach that could easily be integrated into the sections above, but left on the list in this order so they align with the complete set of documentation)

- Order #5 Alcohol, Drugs & Intoxicants
- #6 Unlawful Harassment/Sexual Harassment
 - #9 Posting of Materials
 - #11 Emergency Operations Plan

4. CAD AND RMS SYSTEMS

Review current CAD/RMS systems and make recommendations for future use.

Historically, computer aided dispatch (CAD) systems and records management systems (RMS) have often been implemented as paired solutions from a single vendor. This approach brings a variety of advantages if the vendor is able to build highly capable solutions for both functional areas. Unfortunately, this is not always the case, and it is not uncommon to find situations where a vendor's CAD offering is a great fit for an organization while the RMS functionality is lacking in some manner. Conversely, RMS solutions that provide great functionality from a law enforcement or fire service perspective often lack strong CAD capabilities.

This disparity of capabilities becomes even more pronounced when considering solutions for multi-jurisdictional and multi-disciplinary communications centers such as what is being planned for CCPSA. Therefore, it is increasingly common to find separate solutions being selected and implemented for CAD and RMS when multiple jurisdictions join together in regional dispatch initiatives. This is becoming even more common, and reasonable to execute, as the data interfacing strategies between CAD and RMS systems becomes easier to implement and manage.

It is also important to recognize that for law enforcement agencies there are significant operational and investigatory advantages to having RMS systems well populated with historical information. If the planning of a new regional dispatch organization were to simultaneously require migrating to a new regional RMS system, a large data conversion effort could potentially be needed to meet the operational expectations of the individual agencies. From IXP's experience, data-conversion and data-merging projects such as this are extremely difficult and expensive to execute, and often result in a new system that is perceived as less functional than the individual legacy systems the agencies migrated from.

With all of these factors in consideration, IXP recommends that if at all possible, the creation of a new regional dispatch operation not require any of the participating agencies to leave their existing RMS solutions. Good CAD systems for multi-jurisdictional and multi-disciplinary communications centers are fully capable of developing interfaces to each RMS system in use so that CAD data can be transferred to the appropriate RMS system(s) as needed. This allows the CAD system to be tailored for optimal functionality from a dispatch perspective while still preserving the functionality and historical data each agency has established with their existing RMS solution.

In addition to establishing the appropriate CAD-to-RMS interfaces as described above, it will also be important for the regional dispatch center to have access to the legacy RMS systems to support other operational needs. The Valcour RMS solution is currently utilized by the Burlington, South Burlington, Colchester and Winooski police departments and the Spillman RMS solution is used by Williston PD. Administrative workstations should be established at each dispatch console furniture position so that

regional dispatch personnel can be given whatever query access is needed into these systems to support the operational needs of the center and its user agencies.

Working from the assumption that legacy RMS solutions can remain in place, attention can then turn to considering whether the Tyler Technologies/New World CAD system currently in use at Burlington could be reconfigured and utilized as the regional CAD solution for the new CCPSA regional dispatch center. IXP has seen this product used successfully in many other multi-jurisdictional and multi-disciplinary communications centers. IXP also conducted an online demonstration session with the vendor to help confirm system functionality and configuration opportunities.

From everything we can see, CCPSA should be able to successfully reconfigure the Tyler/New World CAD system to meet your regional dispatch needs. Not only does this create an opportunity to leverage the existing information already built into the system, the City of Burlington advised that the potential for regional use was considered when the initial licensing of the system was put in place, so it also seems likely that only minor licensing adjustments would be needed based on the final number of workstations installed at the regional dispatch center and its backup facility.

5. STAFFING LEVELS AND SHIFT CONFIGURATIONS

Recommend appropriate staffing levels and shift configurations for consolidated dispatch center that considers the following factors and provide an explanation of the methodology used to determine results:

- a. PSAP requirements
- b. 9-1-1 call volume
- c. Radio traffic
- d. Non-emergency phone activity
- e. Number of officers on per jurisdiction
- f. Training, Management, and QA/QC

[THIS SECTION WILL BE ADDED FOR BRIEFING #3]

6. TRANSITION OF EXISTING WORKFORCE

Recommend best strategy to transition current workforce into new consolidated center, understanding the need to retain current dispatchers in local dispatch until their communities are dispatched by regional, (considering training and possible joint employment by local and regional dispatch for a period of time) and within the constraints of applicable labor laws and in consultation with CCPSA's labor attorney.

[THIS SECTION WILL BE ADDED FOR BRIEFING #3]

7. CALL TAKING STRATEGY FOR COMBINED PSAP/DISPATCH

Recommend best call-taking strategy (one stage with combined PSAP/dispatch positions or two-stage with separate PSAP and dispatch positions) for a combined PSAP/Dispatch Center given expected call volume.

[THIS SECTION WILL BE ADDED FOR BRIEFING #3]

8. RECOMMENDATIONS ON EXISTING TECHNOLOGIES

Provide recommendations on the most efficient way to incorporate the use of existing technology, including the following:

- a. 9-1-1 customer premises equipment
- b. CAD
- c. Recording equipment
- d. Radio equipment
- e. Networking
- f. Workstation equipment
- g. Fire alarm monitoring system

One of the most significant challenges in establishing a new regional emergency communications center in an entirely new facility is that the facility and all of the technology systems have to be fully installed, tested and trained on prior to the cut-over to live operations. Attempting to go live with a limited set of technology and/or functionality puts the new operation at risk of not being to perform critical functions until systems are de-installed at their current center, re-installed at the regional center, and then tested to make sure they

are ready for live operations. Further, legacy systems may lack the features and functions needed for a regional dispatch environment. And finally, it is not uncommon for legacy systems to be at or near the end of their normal life cycle and not ideally suited for re-use at the new facility.

IXP offers the following observations and recommendations on the various technology systems needed for the regional dispatch center.

- a. 9-1-1 Customer Premises Equipment (CPE) – While not specifically identified in CCPSA’s Statement of work, we need to consider 9-1-1 CPE in the context of an overall telephone system environment for the new regional center. Since the State 9-1-1 Program will not undertake the process of providing and installing 9-1-1 CPE until the center has successfully commenced regional dispatch operations, the new center will need to install a basic telephone system to allow the routine processing of inbound and outbound telephone calls as is currently accomplished at each of the existing centers. This will need to be a new system that is fully installed, tested and trained on prior to commencing live operations.

In the process of laying out each of the dispatch console positions and the technology equipment room, space would be reserved for 9-1-1 system to be installed by the State at the point in time they are ready to begin the transition to the center serving as a PSAP in their network. Since 9-1-1 calls would then be handled on the 9-1-1 CPE rather than being transferred to the center of 10-digit lines as it is today, the general telephone system could be reconfigured to reduce the number of lines to meet the routine 10-digit needs of the regional center.

A new phone system would likely not be needed for whatever facility is identified as the backup facility. Rather, the existing phone system at that center would be reconfigured to accommodate backup operations and 9-1-1 calls would be routed to the backup facility over 10-digit lines from one of the other PSAPs in the State network as it is today.

- b. CAD System – As discussed in Item #4 above, the Tyler Technologies/New World CAD system could be re-configured and re-used as the CAD system for the regional dispatch center. The best practice for re-use of system like this is to provision new servers and workstations at the new facility and get the re-configured system fully installed, tested and trained on at the new center. This is preferable to trying to operate as remote workstations so that the new center can be fully self-contained from functionality, maintenance and security perspectives. If the City of Burlington is not a part of the start-up cutover of the regional center, their workstations could be converted to operate remotely off the regional system at the new center until such time as they make the transition to the regional center.
- c. Recording Equipment – The logging and recording system for the regional center should be a new system that is fully installed, integrated, tested and trained on prior to commencing live operations. IXP also recommends that regional dispatch centers also operate a low-cost backup recording system to minimally capture telephone line and radio channel traffic that is essential to the operational record of the center. For this backup system, one of the recording systems from one of the existing centers could be moved to the regional center after that agency cuts over to regional dispatch.

- d. Radio Equipment – The new regional center will need to have a new radio console system fully installed, integrated, tested and trained on prior to commencing live operations. These systems require a significant number of radio control stations and leased phone lines to be interfaced and tested to allow normal operations to be conducted. This often takes several months to complete and limits the ability to relocate any back-end system equipment from any of the existing centers.

As part of acquiring and implementing the new radio console system, a new fire station alerting and personnel notification system will also need to be installed so it can be fully installed, tested and trained on prior to commencing live operations.

If the new system at the regional center matches systems currently in use at one or more of the existing centers, the initial number of furniture positions equipped with radio console workstations could be kept to the minimum needed for start-up operations. Workstation positions could then be moved and reused from existing centers based on compatibility. Three different radio console systems are currently in use at the existing centers: Motorola MCC5500, Motorola MIP5000 and Avtec Scout (now a Motorola company).

- e. Networking – A new stand-alone local domain and network will be needed for the regional center. This will allow all of the systems at the facility to be properly configured, installed, and tested prior to commencing live operations. Operating on a stand-alone network also allows the regional center to protect itself within its own firewalls and security systems. It will also allow the center to carefully configure, control and monitor any interfaces to external systems and networks.
- f. Workstation Equipment – As discussed above, there may be some opportunity for reuse of CAD or radio console workstations after the regional center commences live operations and equipment can be moved from centers that are closing down. 9-1-1 workstations would all be new as part of the State installing the 9-1-1 CPE. IXP recommends that each working position in the center also be equipped with what we refer to as an ‘administrative’ workstation. This is used for interactions with both internal and external systems such as email, RMS systems, external databases, etc. Keeping these ancillary functions off the 9-1-1, CAD and Radio workstations is part of the security architecture that helps protect mission-critical comm center systems. Some re-use opportunities may present themselves here depending on the sequence of centers migrating to regional operations and the age/capability of the legacy equipment.
- g. Fire Alarm Monitoring System – The City of Burlington is the only dispatch center currently providing direct monitoring of fire alarm systems. All of the other jurisdictions receive notifications of activated fire alarms from commercial central station alarm companies via 10-digit telephone calls. It is recommended that when the new regional dispatch center’s telephone system is configured that a specific 10-digit number be established for these alarm monitoring company calls to make it easier for the center’s staff to manage call answering responsibilities and work flow.

Assuming that the City of Burlington will want to continue to provide direct fire alarm monitoring service to their community and continue the annual revenue stream derived from their alarm monitoring agreements, it will be necessary to replicate the Sigcom TRX50 system functionality at the regional dispatch center. This will need to be done in advance of Burlington

joining the regional dispatch operation so the system can be fully installed and tested before cutting over to live operations. The system currently in place at Burlington's dispatch center could then remain in place if Burlington's center is selected as the backup center, or moved to whichever facility is selected as the backup center.

- h. Other Systems – While not specifically mentioned in the Statement of Work the new regional center will also need several ancillary technologies installed as part of readying for live operations. A master time synchronization system is needed to tie all the dispatch-related systems to a common time reference. This is critical for future incident reconstruction or similar quality assurance activities. A variety of video monitors and workstations to control them will also be needed to allow access to video feeds from facility security systems at the regional center, regional traffic and weather feeds, and as needed video feeds from the facilities of the agencies being served.

9. EVALUATION OF DESIGNATED SPACE

Evaluate the designated space and provide recommendations for configuration based on the operational and staffing requirements, including:

- a. Comfort
- b. Security
- c. Utilities
- d. Technology
- e. Environment needs
- f. Console position, configuration and planned assigned use
- g. Adjacency access such as lockers, break room, storage, and access to restrooms

IXP was asked to evaluate leasable office space on the second floor of the building that houses South Burlington Police Department at 19 Gregory Drive. This space has a total of approximately 3,450 square feet of space that could be remodeled to house the regional communications center operations in several different configurations.

The space is encumbered by several design constraints due to the layout of the building and the location of existing tenant spaces. The geometry of the space is unusual, with a large triangular space separated from the main space by a combination of a wall that cannot be removed (but it can have doorways framed into it). There is also an existing technology equipment room that is currently used by another tenant. Early conversations with this tenant indicated a willingness to share the space with the communications center by consolidating as much of their equipment as possible to one end of the room. Figure 1 below provides an overview of the space available.

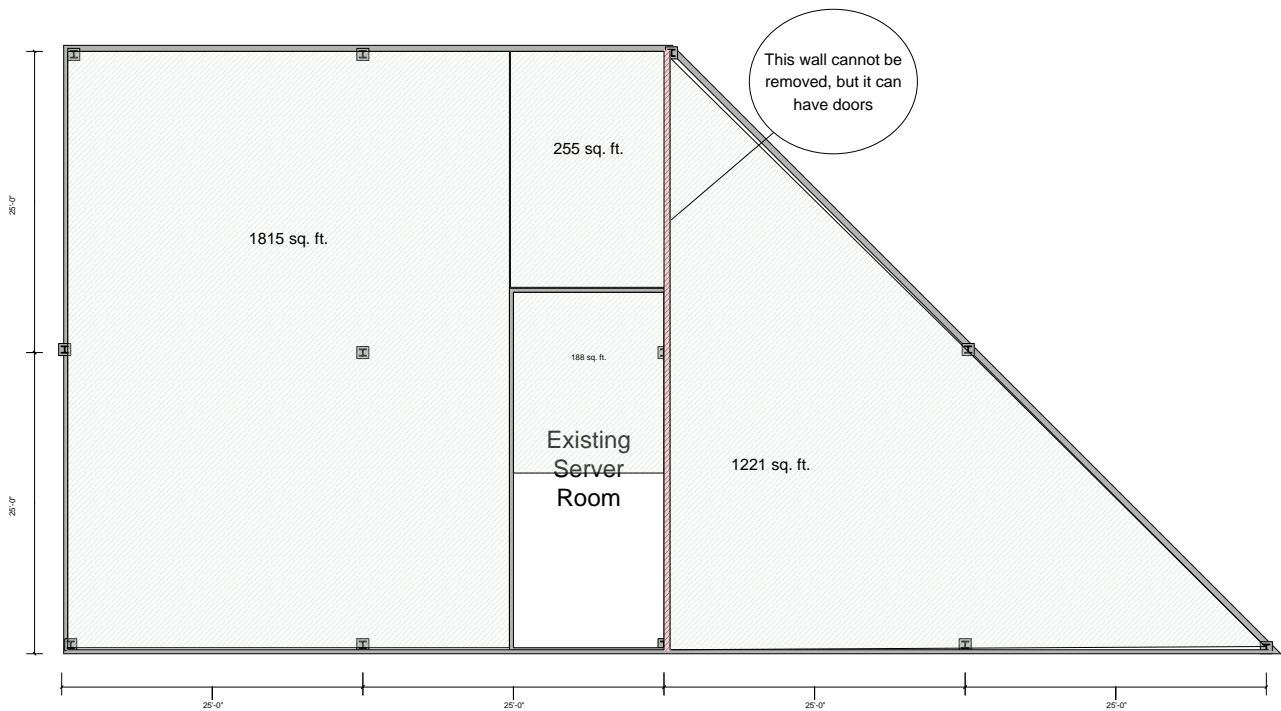


Figure 1 - General overview of the available space

The best industry guideline to use for evaluating a facility for an emergency communications center is the Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems published by the National Fire Protection Association (NFPA #1221). Chapter 4 of this standard provides specific standards and recommendations for Communications Centers.

In addition to providing best practice guidance on specific building systems and technical characteristics, the Standard also stresses the importance of having the communications center capable of sustaining operations within their own security boundaries. Therefore, features such as kitchen/break areas, restrooms, rest areas and locker space need to be incorporated within the security footprint of the center. In addition to these features, IXP also recommends that communications centers include sufficient storage space to allow storage of both emergency supplies, operational support materials, and files.

Finally, if possible, centers should include some form of meeting/training space to allow at least small meetings or training sessions to take place within the security perimeter of the center. Since South Burlington Police also occupies this building and has expressed that meeting and training space needs could be accommodated in spaces under their control, the need for meeting space in the communications center may be less important in this instance.

Coupling these considerations with the items CCPSA identified in the Statement of Work, IXP developed a variety of alternative floor plans that CCPSA could consider. Each layout alternative has a number of tradeoffs when compared to other alternatives, and these are outlined below for each viable layout we considered. Each possible layout is described in the pages that follow.

ALTERNATIVE 1A – Prior to learning that the wall along Line C of the building layout could not be removed, we had looked at a layout we called Alternative 1 that concentrated all of the operational spaces to the left of that wall and all of the administrative and support spaces to the triangular portion to the right of that wall. Upon learning that the wall could not be removed and that only framed openings of approximately 5’ could be considered, we modified this strategy into Alternative 1A, which is shown below in Figure 2.

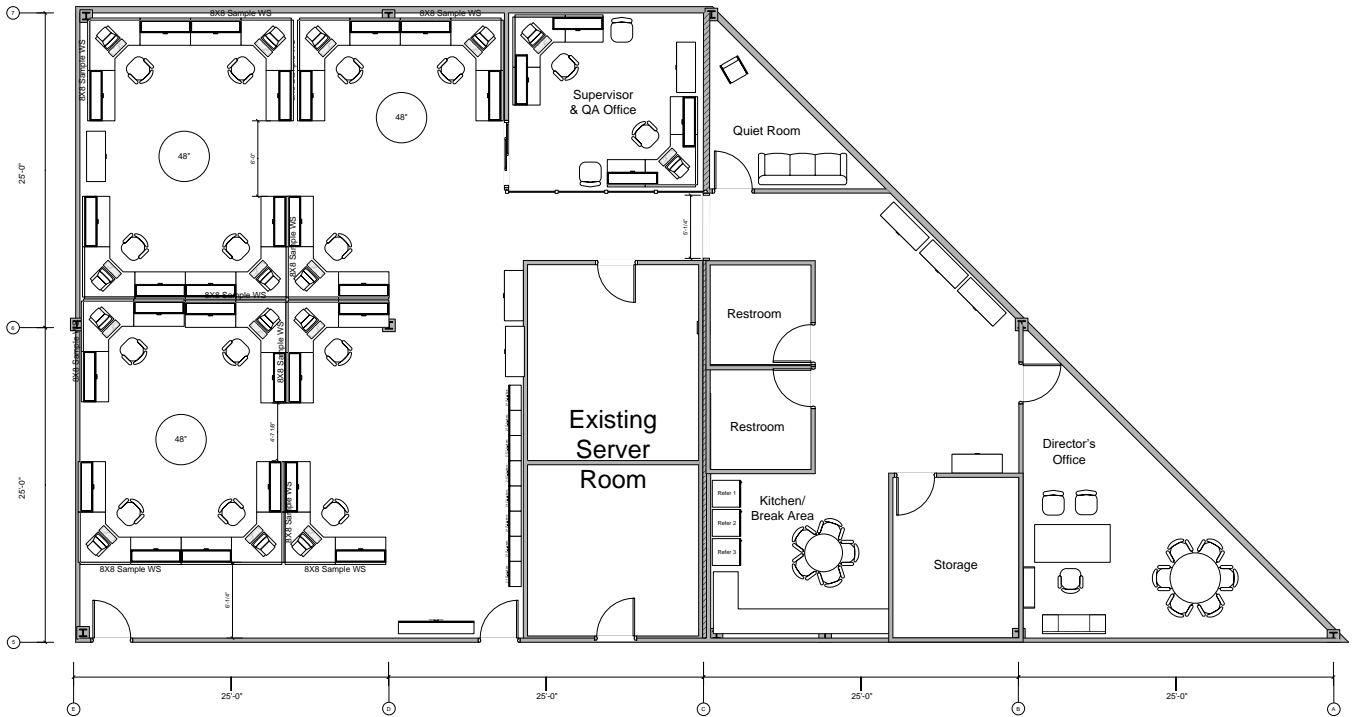


Figure 2 - Alternative 1A

In this configuration, the Center could fit 13 console furniture positions capable of being equipped for PSAP, dispatch or combined PSAP/Dispatch functionality. All critical personnel support functions also fit within the layout including restrooms, a quiet room, a kitchen/break area and a storage room.

ALTERNATIVE 1B – In this variation of Alternative 1, a small meeting/training space is introduced into the operational side of the layout. This takes the total console furniture count down to 10 positions. If this configuration were chosen for initial operations, the meeting/training space could be framed with demountable walls so that if further operational space expansion were needed in the future the room could be disassembled and the full configuration of Alternative 1A could be achieved. Alternative 1B is shown below in Figure 3.

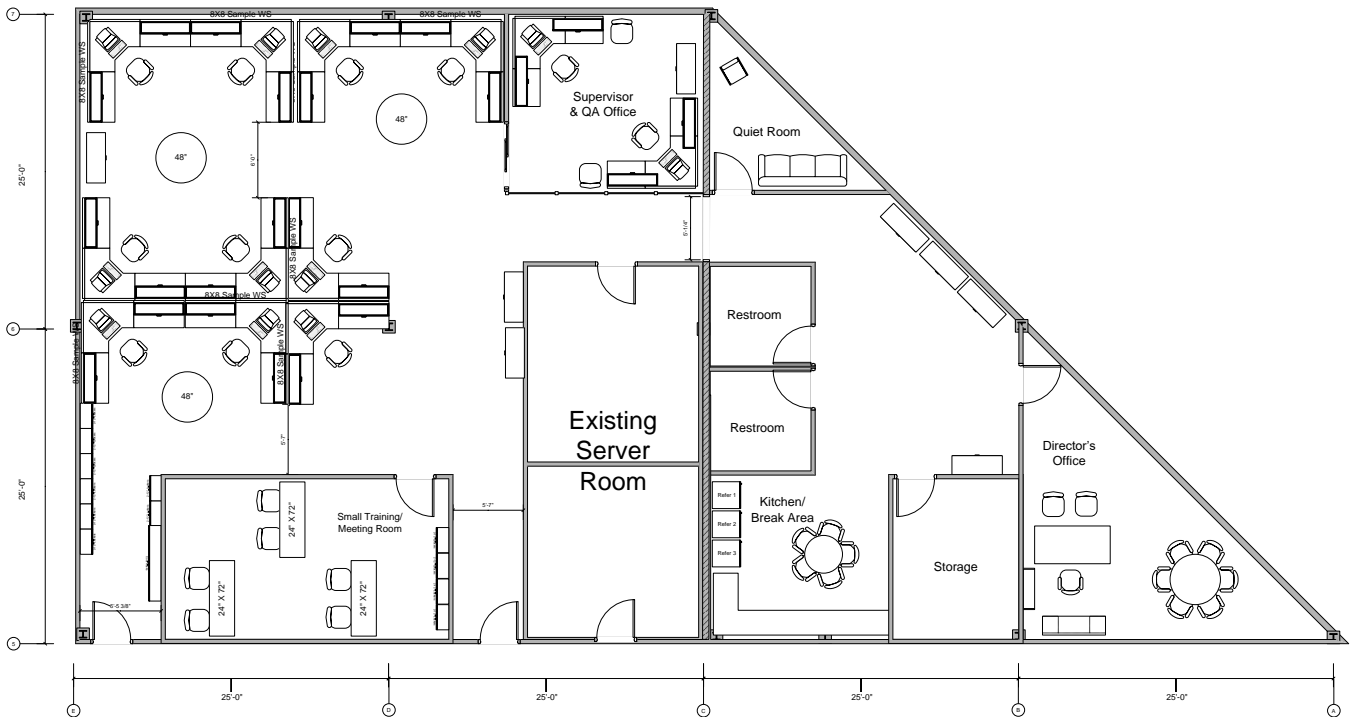


Figure 3 - Alternative 1B

ALTERNATIVE 2 – In this layout (Figure 4 below), consideration was given to possible layouts that moved the employee support areas (kitchen/break, restrooms, etc.) to the left side of the space so they are co-located with the operational area. This configuration takes the maximum position count down to 7 but accommodates a larger meeting/training space. This layout also keeps the kitchen/break area roughly the same size as in the Alternative 1 scenarios, which results in the lack of any designated storage space (so storage cabinets and/or shelving would have to be deployed on the ‘administrative’ side of the space).

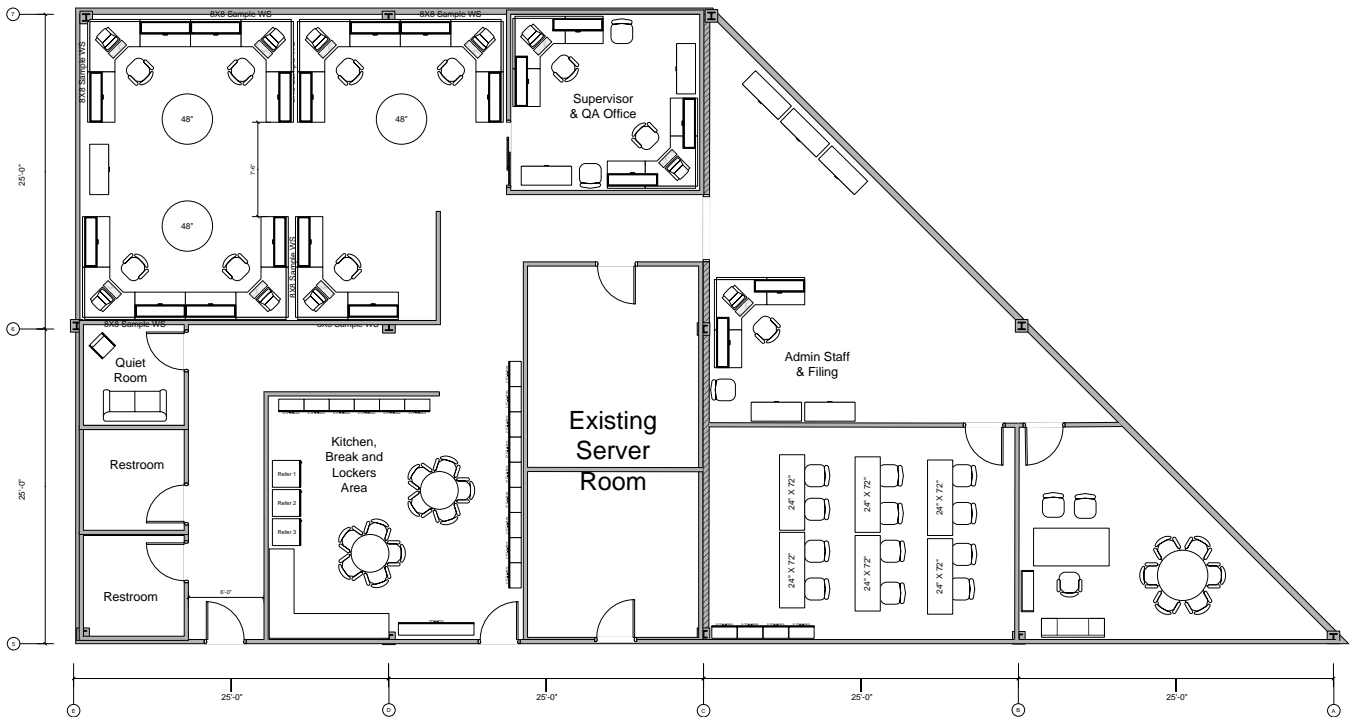


Figure 4 - Alternative 2

ALTERNATIVE 2A – In this layout (Figure 5 below), the size of the kitchen/break area is reduced to allow a ‘hall-closet’ type of configuration for some storage space.

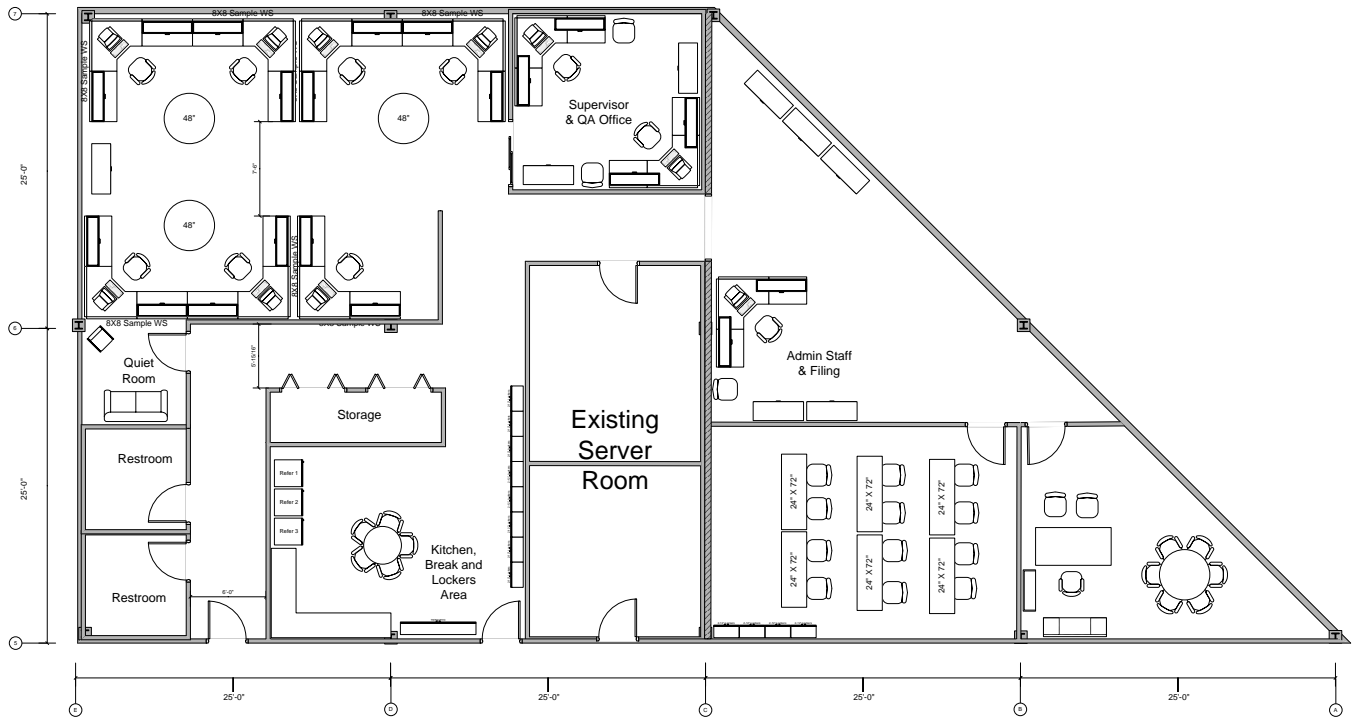


Figure 5 - Alternative 2A

ALTERNATIVE 3 – In this configuration (shown in Figure 6 below) the quiet room is moved to the other side of the dividing wall and this allows restroom sizes to be increased slightly.

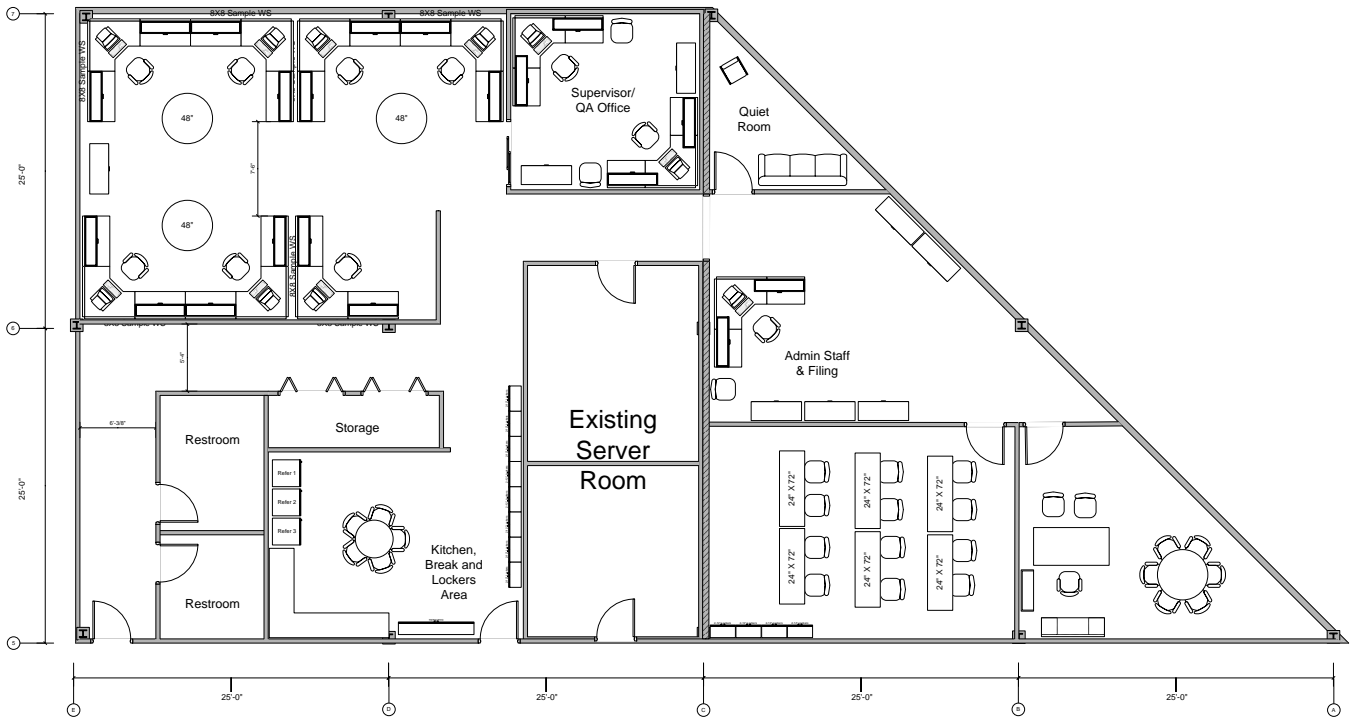


Figure 6 - Alternative 3

SUMMARY OF ALTERNATIVE LAYOUTS

Each of the layouts considered have advantages and disadvantages. Either flavor of Alternative 2 or Alternative 3 allow the center to more easily accommodate its meeting and training needs within its own footprint. But this comes at a cost of reducing the operational floor space so that configurations of greater than 7 furniture positions would be difficult to accommodate. It also limits the storage space available for the center.

Conversely, Alternative 1A maximizes the operational space with the potential for up to 13 positions if needed in the future. This configuration also allows for adequate storage space for the center’s emergency and operational supplies. Alternative 1B creates the same long-term expansion potential as 1A, but also creates a small meeting/training space to use until expansion beyond 10 positions is needed. It also retains the storage space.

Regardless of the configuration ultimately chosen, it seems clear to IXP that a space configuration can be found that would allow this facility to be utilized for CCPSA’s operation.

OTHER FACILITY CONSIDERATIONS

Backup Power – At the time the building was remodeled to accommodate the needs of the South Burlington Police Department, an emergency generator was added to support their backup power needs.

The capacity and current loads on this generator will need to be evaluated to determine if it can adequately provide backup power for the CCPSA regional dispatch center as well. If it is not capable of supporting the expected loads, consideration could be given to up-sizing the generator to meet the additional loads, or adding a separate generator to support CCPSA's needs.

Technology Equipment Room – The existing server room is currently occupied by another tenant in the building, but that tenant has expressed a willingness to reconfigure their equipment so that CCPSA could have use of approximately one half of the total space in the room. Since some of this existing equipment and electrical panels are wall-mounted, it will likely not be possible to find a configuration that would isolate the other tenant to just one half of the room, so a shared access and security agreement will need to be put in place. Combining such a process along with CCPSA systems being installed in locking equipment cabinets should provide sufficient security for CCPSA systems.

At the time the tenant improvement design and engineering work is done, the total power loads and heat loads for this room will need to be calculated to determine if additional electrical or HVAC capacity will need to be added. It is quite common to install small, stand-alone HVAC systems for rooms of this nature to augment the cooling capacity of the building's main system and to maintain desired operational temperatures in the technology equipment space.

It will also be advisable to explore the potential of installing a stand-alone FM-200 fire suppression system to protect this room. Given the room already exists and does not appear to have been designed with the tight seals required for an FM-200 system to be effective, it may end up being too expensive to retrofit the space to allow an FM-200 system to be utilized. If that turns out to be the case, a combination of smoke and heat detectors should be installed in the room and this system be monitored directly in the comm center. With 7X24 staff that can be properly trained in how to deal with over-temperature or smoke/fire conditions, the room would be adequately monitored and protected.

10. RECOMMENDATIONS ON RADIO SYSTEMS

Using information provided by a single representative of CCPSA, including a list of all member community public safety radio channels, their current use, frequency licenses, and approximate coverage per channel, provide recommendations on radio system(s), head end, microwave, back-haul, frequencies, licensing, the reuse or repurposing of existing (in place) equipment and frequencies, considering end of useful life of current equipment, replacement and upgrades. (This should not be an ultimate radio system for CCPSA but rather one that will be sufficiently robust, efficient, and effective until such time as CCPSA determines if it wishes to develop, or own, or operate a radio system covering all of its member communities. CCPSA does not plan on even such an endeavor until CCPSA has been operating with all its member communities.) Please note however, that CCPSA prefers copper back haul vs. internet back haul for resiliency purposes.

Regional dispatch consolidations are easiest to execute if the agencies being consolidated are already operating on a unifying radio system infrastructure. Unfortunately, very few dispatch consolidation initiatives have the opportunity to work with agencies operating on a shared radio infrastructure, so integrating existing systems into the new regional dispatch operation is a routine challenge in these types of initiatives.

As is often the case, the existing radio systems within the CCPSA member jurisdictions have evolved over a long period of time, with systems at various stages of technological advancement and equipment at varying places in their useful lifecycle. Some communities have been able to sustain investments in their systems and find them performing well for their needs, while others recognize that equipment repairs or replacements are an imminent need. Recognizing that CCPSA wishes to defer a decision on whether to develop and operate a regionalized radio infrastructure until after dispatch operations are fully operational, planning for the new center will need to anticipate integrating all of the existing systems into the operational concepts at the new regional center.

IXP does not recommend attempting an interim reconfiguration of existing systems to try and create an approximation of a regional system environment. Rather, we recommend integrating the systems into the regional center on an as-is basis, and keeping the responsibility for the performance and maintenance of each system with the jurisdictions that currently own/operate them. This will allow each community to make their own decisions on how to prioritize any investments in their current systems/equipment until a formal project is launched to plan and implement a regional radio infrastructure. This will also create an easily understood demarcation of responsibility between the regional dispatch operational responsibilities of CCPSA and the radio system infrastructure and equipment responsibilities of the individual communities.

Deferring a large-scale infrastructure reconfiguration, or a full regional design and implementation effort, also allows each community to transition to CCPSA regional dispatch services on timelines that work for them, without requiring them to also have to undergo radio system changes.

Current generation radio console systems are able to support a wide variety of interfaces to existing and future radio system infrastructures. The most common approach is to lease wireline circuits from local telecommunications providers to tie remote transmitters and/or receivers back to the radio console system. While wireline interfaces are often desired, they are becoming increasingly expensive to acquire and sustain since most telecommunications carriers are moving away from their legacy copper-line communications networks. Many of these carriers are systematically increasing their pricing for these circuits in hopes of pushing radio system interfaces to alternative links such as microwave or IP backhaul.

Wherever possible, wireline links should be established from the existing radio infrastructures to the new regional dispatch center. These would be implemented in tandem to the links already in place to the existing dispatch centers. After that jurisdiction cuts over to regional dispatch services, their existing lines could be removed as they decommission their center. This decommissioning would not be done at the center selected as the backup location. Rather, additional links would also be provisioned to this facility or control station radios added to reach these systems over the air rather than over a wireline link. Multi-channel control station radios will also need to be integrated into the radio console system at the regional dispatch center to provide a backup method of accessing systems if wireline lines go down.

11. RECOMMEND OPTIONS FOR BACKUP CENTER

Provide recommendations for an emergency backup dispatch center to ensure continuity of operations, based on an understanding of centers previously operated by CCPSA member communities, understanding that the PSAP function need not be backed up.

While a number of factors influence the selection of a backup location, the most important is having the backup location far enough removed from the main location so that it is unlikely to be affected by the same disabling situation. Therefore, the South Burlington dispatch center would not be a candidate since it is located in the same building under consideration for CCPSA's operation.

The next important consideration is that adequate space is available both for the operational positions needed and for the back-end servers and equipment to support those positions. The Williston and Winooski centers are both 2-position operations currently and would not be reasonable to expand. This leaves the Colchester and Burlington centers for consideration as potential backup locations. Colchester is currently configured with 3 positions and it would likely be possible to fit in a 4th position. Burlington is currently configured with 4 positions and it would likely be possible to fit in a 5th or even 6th position if needed. This makes it much more likely to meet the backup needs for CCPSA as the agency continues to grow over time.

The Burlington location also brings several other advantages if it is selected. As the center that already houses the Tyler/New World CAD system, coordinating the migration of this system to CCPSA operations while concurrently serving Burlington's needs until cutover would be much easier to coordinate. Further, the fire alarm monitoring system needed to support Burlington's alarm monitoring service is already in

place, making it immediately ready to serve as a CCPSA backup. And, as discussed in Item #1 above, if the transition sequence has Burlington joining the CCPSA operation last, the Burlington center will be in live operation all the way through the start-up of CCPSA's center, allowing it to be configured and ready to serve as the backup concurrent with the start-up of CCPSA's center.

As noted in the discussion on radio systems, regardless of which location is selected it will be necessary to set up the backup center with additional wireline interfaces and control station radios so that the backup center can access the most important radio channels for the agencies being served.

12. REVIEW ALARM ORDINANCES

Review alarm ordinances in the six-member communities, to be provided as a single package to selected contractor by CCPSA, and provide recommendations including:

- a. Any proposed changes to individual municipal alarm ordinances, and
- b. Whether to repeal individual municipal alarm ordinance and replacement with a common regional alarm ordinance (a power which CCPSA has).

[THIS SECTION WILL BE ADDED FOR BRIEFING #3]

SECTION 3 – COST ESTIMATES PHASE ELEMENTS

1. OPERATIONAL COST ESTIMATES

[THIS SECTION WILL BE ADDED WHEN THE FINAL REPORT IS ASSEMBLED]

2. CAPITAL COST ESTIMATES

[THIS SECTION WILL BE ADDED WHEN THE FINAL REPORT IS ASSEMBLED]

SECTION 4 – SUMMARY AND CLOSING

[THIS SECTION WILL BE ADDED WHEN THE FINAL REPORT IS ASSEMBLED]