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TO: City Council

FROM: Francis X. Dougherty

SUBJECT: 911 Study

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The purpose of this memorandum is to provide City Council with the 911 study as well as a brief summary in preparation for the 911 consultants' presentation to City Council on March 16, 2016.

Background

As you recall, state legislation governing 911 has changed. Among those changes are mandatory consolidations of the Allentown and Bethlehem 911 centers into their respective counties' operations. The objective of this is to save money for the 911 funds as well as lead to further consolidation among regions in the future.

The report, which is attached, exceeds 400 pages in length. What follows is an executive summary of that report.

- The report recommends that the two cities (Allentown and Bethlehem) merge into their respective counties within two years, as a Phase I approach, to meet the state's funding deadline. The Allentown consolidation would take place at the Lehigh County 9-1-1 Center.
- The report is also recommending a Phase II, which would take place beyond year four but before the end of year seven, a merger of the two county 911 centers into a single facility (*at the Northampton 911 Center*).
 - It is unlikely that the cities would be involved in the Phase II process if/when it occurs.
- The report also calls for an oversight board, comprised of representatives from Allentown and Lehigh County) to be developed to provide guidance, clarification and recommendations during the consolidation process.
 - Operational, technical and staffing decisions are to be left to the oversight board to review and discuss.



- The suggested funding source for the consolidation was identified to come from Act 12 “Interconnectivity” funds (911) which are to be distributed by PEMA with input from the state’s 9-1-1 Advisory Board.
- The report details the potential cost savings from the consolidation / regionalization effort for both personnel and equipment.
 - It should be noted, that these projected savings are to the (state) 9-1-1 Fund, not directly to the city’s General Fund which covers the difference between the actual operational costs vs 911 funded.
- Although the General Fund cost to the city for 2016 is relatively low due to the change in legislation and the ability to use wireless funding for the total (*unrestricted*) 911 expenses, the General Fund contributions to the city’s 911 fund over the past several years, (*and what will be required until the consolidation takes place*) has been +/- \$1 million per year.
- The report indicates that each municipality will need to maintain their respective radio systems for the foreseeable future. This is due to the (*unfunded*) cost, coordination and FCC regulations required for a regional radio system.
 - This recommendation impacts the city as our radio system is currently 15 years old and at end of life.
 - This issue should be a key discussion point with Lehigh as there will be new, significant yearly maintenance costs associated with any new radio system installed in the city.
- The report was very complementary on the police camera operations provided by the cities of Allentown and Bethlehem. They indicated that this type of operation is indicative of the services that can be provided under Next Generation 9-1-1. In addition, the report indicated that these services SHOULD be maintained at the county level after the consolidation has taken place.

Report Recommendations

The most important section of the 400+ page report concerns the recommendations found on pages 46-51. They are as follows:

After reviewing and analyzing all of the information provided, the responses to the multiple interviews, considering costs savings, conferring with architects on space requirements, and based on the information contained in this report, MCM provides the following recommendations for the future of 9-1-1 systems and services in the Lehigh Valley:

1. The long-term goal for the cities of Allentown and Bethlehem and the counties of Lehigh and Northampton should be to consolidate into one regional Lehigh Valley Public Safety Answering Point (PSAP) region. Maximum cost savings in terms of capital outlay, maintenance and personnel costs can be realized through all four PSAP joining together into one. This consolidation into one regional PSAP would make the Lehigh Valley the fourth largest PSAP, in terms of population served, in Pennsylvania (behind Philadelphia, Allegheny and Montgomery Counties). The review of the current PSAPs finds that Northampton County’s current PSAP is the best option in terms of location, available space and cost of needed expansion/renovations. It is not expected that this will happen within a four-year time frame, but it should be a goal to accomplish the regionalization within five to seven years.



2. An oversight board should be established with representatives from all four PSAPs and municipalities. The board would be responsible for developing the operational and logistical plans for the consolidation of the city and county PSAPs, eventual regionalization of the all of the PSAPs, and development of an authority for governance of a regional PSAP by the four municipal governments. The board would also be responsible for developing intermunicipal agreements for cost sharing of resources that are turned over to the consolidated authority. The board would need to work together to address issues such as: how staffing will be integrated, including union membership issues; the integration of current protocols for operational areas that meet the needs of the counties and the cities; recommendations and oversight of needed infrastructure work, including, but not limited to fiber/microwave connectivity, trunk routing, console upgrades, and planning for any needed renovations/construction for consolidations and eventual regionalization.

3. Since it is not expected that a regional facility would be ready for operation by June 30, 2019 (when funding for Allentown's and Bethlehem's PSAP is expected to stop), consolidation of Allentown and Lehigh County's PSAPs at the current Lehigh County PSAP, and consolidation of Bethlehem and Northampton County's PSAPs at the current Northampton County PSAP are recommended as intermediary measures. Although it is technically possible for a regional PSAP to be constructed and the necessary infrastructure to be put in place within three years, it is doubtful that the integration of protocols, systems and needed training would be able to be done in that time frame. With a large undertaking such as a regional PSAP in the Lehigh Valley, with public safety as the main priority, it is recommended that the planning for it is done methodically and not rushed. For consolidation of the centers it is expected that current radio systems would continue to be used, as planning for, designing and engineering new radio systems is a lengthy and tremendously expensive undertaking. Use of the systems would probably need to be continued for some time even under a regional PSAP.

For the consolidation of Allentown's PSAP with Lehigh County at the current Lehigh County PSAP, it is recommended that Allentown's newer CPE switch that is currently shared with Northampton County be utilized. Although Lehigh's PSAP currently has enough console positions to allow for the extra staff needed, the CPE and consoles at Lehigh are due for replacement and should be upgraded to work with Allentown's Airbus DS Vesta 4.3.1.521 geo-diverse CPE. This upgrade should be paid for out of PEMA's interoperability money. Lehigh's telephony trunks would need to be rerouted through to run through Allentown's switch to the PSAP. Half of Northampton's trunks are running through this switch and moving it to Lehigh's facility does not make financial sense, since it is recommended that the end result is a regional facility not using Lehigh's current center. Keeping the switch at Allentown's facility will maintain geo-diversity and redundancy. Connection back to Allentown's facility would made be for their radio system and the CPE switch. It is noted that this will come as a cost to the City of Allentown in the form of needed cooling, backup power, UPS and the restricted use of the facility for other purposes.

Lehigh County has an extensive redundant loop microwave network between the center and their remote sites. Allentown has a T1 lines between its PSAP and the PP&L building which houses its only site. A fiber or copper T1 connection to the Lehigh County PSAP would allow for Lehigh to connect into the Allentown GE EDACS system. However, there may need to be some kind of CSSI to enable direct connectivity between Lehigh's ACOM and the GE/Harris console that Allentown is using to avoid using a control station interface.



Current ancillary services that are provided by both PSAPs should continue to be maintained. The Allentown PSAP provides valuable services to the other city departments and agencies, and if those services are not maintained, the city would need to establish a new communications/dispatch center to take over those services, which would limit the amount of cost savings that would be realized with a consolidation. MCM believes that it is imperative that the monitoring of the city's camera system remains at the PSAP after a consolidation and then regionalization takes place. The system is a valuable public safety tool, a step in the Next Generation 9-1-1 process and belongs as a tool available to law enforcement dispatchers. Fiber connectivity is recommended for transmission of the video feeds to Lehigh County's PSAP for the consolidation scenario and then to Northampton County for the eventual regional scenario. It is recommended that the City of Allentown's radio maintenance facility remain as a city operation.

For the consolidation of Bethlehem's PSAP with Northampton County at the current Northampton County PSAP, it is recommended that the CPE switch that is currently in use at Northampton County (and shared with the city of Allentown) be utilized. The CPE and consoles will not need to be upgraded. The PSAP currently has sufficient console positions to allow for the extra staff needed (based on minimum staffing numbers), but three to four new consoles should be added to accommodate normal staffing levels and overflow during emergency situations. The PSAP has more than sufficient space to allow for additional consoles with some rearranging of the current layout. Northampton County utilizes a redundant fiber ring (supplied by Service Electric) between all of their radio sites (except one spread spectrum link to one site). Bethlehem utilizes a fiber ring to connect to their remote sites, with an 80GHz microwave link to the radio maintenance facility (one of their three sites) and an 11GHz link to South Mtn. as a redundancy to the fiber. Since fiber is prevalent and readily available in this area, MCM recommends a fiber connection between the two centers. Although the Northampton County's PSAP radio console has been kept up-to-date and the position PCs upgraded in 2015, it is an older Moducom, while Bethlehem's console is a newer Motorola MCC7500. Upgrading and expanding the MCC7500 to encompass Northampton's dispatch positions and channels should be explored.

Current ancillary services that are provided by both PSAPs should continue to be maintained. Similar to the Allentown PSAP, Bethlehem's PSAP provides valuable services to the other city departments and agencies, and if those services are not maintained, the city would need to establish a new communications/dispatch center to take over those services, which would limit the amount of cost savings that would be realized with a consolidation. Again, as with Allentown, MCM believes that it is imperative that the monitoring of Bethlehem's camera system remains at the PSAP after a consolidation and then regionalization takes place. The system is a valuable public safety tool, a step in the Next Generation 9-1-1 process and belongs as a tool available to law enforcement dispatchers.

4. Time Frame Recommendations:

a. Short Term - 0 months to 6 months

- i. Establishment of the Oversight Board.*
- ii. Begin planning of integration of the city PSAPs into the county PSAPs for the consolidation phase*

b. Medium Term - 6 months through year 2

- i. Required infrastructure work for consolidation completed.*
- ii. Call-taking and dispatch consoles rearranged and purchased as necessary; radio*



systems connected.

- iii. *Training of staff on the revised protocols and standard operating procedures that have been developed by the oversight board.*
- iv. *Staffing and union negotiations finalized.*
- v. *Integration of the city PSAPs into the county PSAPs starting by the end of the 2nd year.*
- vi. *Continuation of planning for eventual regionalization of all of the PSAPs into one facility.*

c. Long Term - Years 3 to 4

- i. *Physical integration of the city PSAPs into the county PSAPs completed by year three.*
- ii. *Development of an Authority for governance of a regional PSAP by the four municipal governments finalized by Oversight Board including Intergovernmental Agreements for cost sharing of resources that are turned over to the regional Authority.*
- iii. *Definitive plans for the construction/renovation of a Lehigh Valley Regional PSAP at the Northampton County PSAP developed and finalized.*

In regards to a regional PSAP, concerns were raised during the interview portion of this study about dispatching for such a large geographic area and population. However, as noted above, three other PSAPs in Pennsylvania currently serve populations that are larger than what a regional Lehigh Valley PSAP would serve. In addition, Allegheny County has a land mass of 730.08 square miles, which is larger than the combined mass of Lehigh and Northampton Counties, with a population that is almost double that of the Lehigh Valley. Allegheny County answers roughly one million 9-1-1 calls per year, about triple the combined 9-1-1 calls received in 2015 by the four PSAPs in this study. Allegheny County utilizes dedicated call-takers, and operates their PSAP in three zones for dispatching purposes: North County, South County, and the City of Pittsburgh. The county staffs their PSAP with a minimum of 55 telecommunicators on duty per shift, with a maximum of 63 per shift. They have a total staff of 262 employees. Allegheny County's operation leaves no doubt that one PSAP can successfully handle an area the size and population of the Lehigh Valley, both technically and operationally.

We look forward to the presentation on March 16. Please let me know if you need any additional information prior to that meeting.

Attachment

