

**Regional Emergency Communications Center
Feasibility Study
Towns of Grafton, Hopkinton, Southborough, and Westborough
9-22-2022
Addendum**

I. Overview

On August 17th at 1.00PM all of the seven communities' representatives involved in this study met at the Southborough Public Safety Facility to review and discuss each community's position on the two recommendations presented in the study:

1. Regionalize Into State 911 Department Wireless / RECC located within region. 24-30 months.
2. Regionalize into a site within region.

Present were representatives from Grafton, Hopkinton, Hudson, Marlborough, Northborough, Southborough, and Westborough. Also in attendance were Tom Kennedy and Steve Foley from the Collins Center and a representative from State 911 Special Projects.

Joseph Crean, State 911 Director of Special Projects presented an overview of the 911 Wireless / RECC that is proposed for the region. It will be in Milford and up and running in 2024. Towns will be eligible to be added on a "one or two at a time" phased process starting in 2025 or 2026. Therefore, it would be 2029 or 30 before all towns would be in that center.

Later, he did confirm there is available funding from State for new RECC's. Next round opens in January 2023, closes in March 2023, with approval / award after June. If awarded RECC's are grant funded for 3-4 years and after are assessed and pay according to how the RECC funding is established.

Each community was asked their current position and if they are prepared to move forward with one of the recommendations. After discussion it appears that Southborough, Hopkinton, Westborough, and Grafton are interested in moving forward with a RECC within either Westborough or Hopkinton. The remaining three communities could not formally commit or are hesitant.

It was determined that based on today's meeting the following would occur:

1. All communities would state and share their official position and level of commitment to the Collins Center and the rest of the group by October 1.
2. The Collins Center would add an addendum to the final study to include what a four community RECC would require for staffing, equipment, site, and cost.
3. The four communities should investigate, determine options, and share those with each other on how to address "Stations Going Dark." This could also be shared with entire group.

The Metrics of the Four Community Configuration

	Population	911 Calls	Total CFS
Grafton	19,664	3,836	18,170
Hopkinton	18,758	2,960	14,215
Southborough	10,450	1,996	5,286
Westborough	21,567	8,699	32,092
Total	70,439	17,491	69,763

II. Cost Benefit Analysis

Staffing Analysis and Recommendations

The Project RETAINS Research Report provided common practices across the country that is useful to consider for the staffing levels for the Towns of Grafton, Hopkinton, Southborough, and Westborough Regional Emergency Communications Center (RECC). Below are data from one hundred fifty-three (153) 911 PSAP centers relative to staffing and call volume. This data is then compared to what is proposed in the proposed RECC.

Center Category	Average	Median	Proposed Total Service Area
# of Personnel	18	12	18
# of Agencies	12	6	8
Population (2020)	79,000	35,000	70,439
Call Volume (2021)	238,000	82,000	69,763

The RETAINS Report also provides that seventy-five percent (75%) of the centers surveyed handled fewer than 10,000 call per employee, with an average of 6,500 calls per employee. The Report also provided that as call volume per employee increased so did employee turnover. They further looked at the relationship between annual call volume per employee and the staffing situation reported by manager. On average, employees handled just over 5,200 calls per year in centers where managers indicated their center was fully staffed at this time (all authorized positions were filled). Employees in centers that were described by managers as chronically understaffed handled about twice as many calls at 11,200 per year. The average for this RECC would be based upon 2021 call volume and a full-time staff of fifteen (15) dispatchers and three (3) working supervisors would be 3,875 calls per employee. The project team does not recommend changing this ratio, in this decision time for the RECC and the transition, the team recommends the shift staffing of five (5) dispatchers for the day shift, six (6) for the evening shift and four (4) dispatchers for the midnight shift to keep a strong level of service to their citizens that all of the communities have expected of these services. The project team also recommends that one working

supervisor be assigned to each shift to provide oversight, guidance, and support for those times and at time of when a surge of calls impacts the center requiring the supervisor to providing dispatching services. Each supervisor would also be designated to oversee the Quality Assurance Program, coordinate training and to assist the Director with oversight of the RECC technology programs. To support the staffing requirement, it is recommended that an operational policy be developed for a contingency plan for staffing during a major event. The project team recommends a position of Director for the functions of providing organizational leadership, continuation of the development of the RECC and for outreach to the communities and the public safety agencies and a part-time Administrative Assistant. The project team's recommendations consider the historical commitment for dispatch and other ancillary services in each public safety answering point (PSAP) while at the same time recognize the economy of scale that the RECC would provide for the future.

Proposed Work Schedule								
	# of Dispatchers	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Per line							
Day	2	DO	DO	X	X	X	X	DO
Minimum 2*	2	X	X	DO	DO	X	X	X
5 dispatchers	1	X	X	X	X	DO	DO	X
	On duty	4	4	4	4	4	4	4
EVE	2	DO	DO	X	X	X	X	DO
Minimum 3*	2	X	X	DO	DO	X	X	X
6 dispatchers	2	X	X	X	X	DO	DO	X
	On duty	4	4	4	4	4	4	4
Mid	2	DO	DO	X	X	X	X	DO
Minimum 2*	1	X	X	DO	DO	X	X	X
4 dispatchers	1	X	X	X	X	DO	DO	X
	On duty	2	2	3	3	3	3	2
Total dispatchers	15							
Day Supervisor	1	X	X	X	X	DO	DO	X
Eve Supervisor	1	DO	DO	X	X	X	X	DO
Mid Supervisor	1	X	X	DO	DO	X	X	X
Director	1	X	X	X	X	X	DO	DO
Total Personnel	19							

*Minimum counts working supervisor also.

Current FY2022 Budget

The participating communities were asked to provide their current budget information. This will be used for comparison with any new projections related to RECC operations.

The Table below displays the current budgets for each of the communities emergency dispatch services with a breakout of personnel expenses and support (administrative and maintenance) expenses:

Municipality	Personnel Expenses*	Support Expenses	Budget Total
Grafton	\$ 290,400.00		\$ 290,400.00
Hopkinton	\$ 689,008.00	\$ 25,000.00	\$ 714,008.00
Southborough	\$ 446,645.38		\$ 446,645.38
Westborough	\$ 769,043.60		\$ 769,043.60
Totals	\$ 2,195,096.98	\$ 25,000.00	\$ 2,220,096.98

*Includes salary, overtime, OPEB and other government costs

Capital Expenditures

Grafton, Hopkinton, Hudson, Marlborough, Northborough, Southborough, and Westborough are currently responsible for financing, planning, and meeting a replacement schedule for their equipment, which can come at a substantial capital cost. Operating on a 24/7 schedule places significant demands on emergency communications center equipment. The estimated life cycle of dispatch equipment is as follows:

Equipment	Life Cycle
PCs & Laptops	3 years
Servers & Routers	5 years
Software Upgrades	7 years
Radio Console	7 years
Dispatch Furniture	10 years

The Grafton Police and Fire Departments provided following technology assessment:

- Police Department Radio system is in good condition
 - Consoles updated in 2016
 - Mobile radios 1-5 years old
 - Portable radios 5 years old
 - Outdated CAD/RMS - IMC
- Fire Department Radio system needs replacement due to age of systems
- The Radio system does have gaps in coverage in South Grafton and North Grafton near the Westborough town line which would require engineering and equipment to remedy the problem,
- Outdated CAD/RMS – IMC system is an older software

Hopkinton Public Safety Communication provided the following technology assessment:

- Radio system was identified as being approximately 30 years old and nearing the end of

- life for the system
 - Forty-nine (49) Mobile radios of various ages
 - Ninety-six (96) Portable radios of various ages
- Radio system does have dead spots on the southeast side of town. Some points north side of town due to failing receiver sites
- CAD/RMS - ProPhoenix

The Southborough Police and Fire Departments provided the following technology assessment:

- Radio system was installed in 2019 in good condition
 - No mobile radios were nearing end of life
 - Portable radios were nearing end of life and will soon need replacement.
- Radio coverage gaps were identified in the far NE and SE sections of the community. Mobile coverage was identified as 95% and portable radios at 90% coverage
- Outdated CAD/RMS – IMC for dispatch and PD RMS. ESO provides RMS for FD

The Westborough Police and Fire Departments provided the following technology assessment:

- The radio system is eighteen (18) years old in fair condition
 - A portion of the mobile radios are nearing the end of life with replacement in the near future
 - A portion of the portable radios are nearing the end of life with replacement in the near future
- Little if any gaps in coverage at the street level
- Outdated CAD/RMS - IMC

Municipality	Type of Equipment	Replacement (3-Year Total Cost)	Annual Replacement Cost
Grafton	Engineering, coverage analysis and equipment, FD Mobile and Portable Radios Outdated CAD/RMS	\$1,950,00.00	\$650,000.00
Hopkinton	Radio System Replacement	\$1,250,000.00	\$416,666.67
	Portable Radios (75) outdated Outdated CAD/RMS	\$646,199.25	\$215,399.73
Southborough	Radio coverage gaps – engineering and equipment Outdated CAD/RMS	\$950,000.00	\$316,667.00
Westborough	Outdated CAD/RMS	\$300,000.00	\$100,000.00

Cost Sharing

The recommended cost-sharing ratio for this center would be based on the population and 911 call volume of the communities as shown below. This method is utilized by the State 911 Department in the distribution of their support and incentive grant program and is seen as a fair and equitable method to share the costs for the Regional Emergency Communications Center (RECC). The State 911 Department uses these two categories to distribute their Incentive and Operations Grant funding. This method calls for an equal ratio of 911 call volume (50%) and population (50%). The information for the criteria is developed using independent sources, i.e., the State 911 Department and the federal census data. The

data and the ratio are listed below.

Community	911 Calls		Population		911 Calls/Population
	2021	%	2020	%	Ratio 50%/50%
Grafton	3,836	21.93%	19,664	27.92%	24.92%
Hopkinton	2,960	16.92%	18,758	26.63%	21.78%
Southborough	1,996	11.41%	10,450	14.84%	13.12%
Westborough	<u>8,699</u>	<u>49.73%</u>	<u>21,567</u>	<u>30.62%</u>	<u>40.18%</u>
Totals	17,491	100.00%	70,439	100.00%	100.00%

Projected State 911 Support for RECC for Grafton, Hopkinton, Hudson, Marlborough, Northborough, Southborough, and Westborough

The State 911 Department provided its estimate for Support and Incentive Grant funds on a recurring basis for a RECC for the seven municipalities in this RECC Study. This estimate was received for this study and is as follows:

FY 2023- New RECC - September 21, 2022

Entity	Support	RECC	Total Grant Funding
GHSW RECC (Grafton, Hopkinton, Southborough, Westborough)	\$ 366,186	\$ 837,233	\$ 1,203,419

Calculations assume configurations are as noted. Changes to the communities included/excluded will impact funding levels. All estimates are subject to funding availability.

Above RECC projections are calculated based upon anticipated regional PSAP and RECC configurations for FY 2023. Timelines impacting current project(s) may impact these projections. Allocation amounts are further subject to change in compliance with the following excerpt from the S&I grant guidelines "The percentages in clauses i to iv, inclusive, and the percentages of the total amounts allocated to each grantee eligible within such clauses i through iv may be adjusted by the State 911 Commission to ensure a proper allocation of incentive funds as more regional PSAPs and regional emergency communication centers are added. The amount allocated to a grantee may be adjusted or capped."

Please note funding levels represent a surcharge of \$1.50; Allocations are subject to change at such time as the surcharge is reduced to \$1 on January 1, 2024.

Projected FY23 RECC Budget

	YEAR	
	1	
Regional Emergency Communications Center (RECC) Budget	FY 2023 Draft Budget	% of Budget
Personnel		
Director Salary	\$110,000.00	
Supervisors Salary (3)	\$258,000.00	
Dispatcher Salaries (15)	\$1,087,500.00	
Overtime Allowance	\$110,000.00	
Admin. Assistant/PT	\$28,000.00	
Other Personnel Employee Benefits (OPEB) - 32%	\$465,760.00	
Total for Personnel	\$2,059,260.00	90.59%
Other Non-personnel expenses		
Technology/IT and Radios	\$54,000.00	
Maintenance Costs	\$45,000.00	
CAD/RMS License Fees	\$75,000.00	
Admin. Costs (legal-HR-Ins)	\$40,000.00	
Total for Maintenance/Admin.	\$214,000.00	9.41%
Total for Dispatch Services	\$2,273,260.00	100.00%
State 911 - S&I Grant	\$1,203,419.00	52.94%
RECC minus State 911 Funds	\$1,069,841.00	47.06%
Cost per Community as RECC		
Grafton	\$266,604.38	
Hopkinton	\$233,011.37	
Southborough	\$140,363.14	
Westborough	\$429,862.11	
Total	\$1,069,841.00	
Current Costs FY22 Budgets		
Grafton	290,400.00	
Hopkinton	714,008.00	
Southborough	446,645.38	
Westborough	769,043.60	

Current Total Cost	2,220,096.98	
Cost Savings per community		
Grafton	\$ 23,795.62	
Hopkinton	\$ 480,996.63	
Southborough	\$ 306,282.24	
Westborough	\$ 339,181.49	
Total Savings	\$ 1,150,255.98	

Cost Savings Summary

Community	Recurring Cost Savings	Non-Recurring Savings	Total Savings
Grafton	\$23,795.62	\$650,000.00	\$673,795.62
Hopkinton	\$480,996.63	\$416,666.67	\$897,663.30
Southborough	\$306,282.24	\$316,666.67	\$622,948.91
Westborough	\$339,181.49	\$100,000.00	\$439,181.49
Total Savings	\$1,150,255.98	\$1,483,333.34	\$2,633,589.32

III. Site Analysis

Potential RECC Site Locations

Below are two sites that will be further analyzed according to the matrix on the last page of the Addendum.

Facility Analysis: Harvey Building, former school, 20 Philips Street, Westborough, MA 01581

The Harvey Building, currently used by the Town Arts Council, was built in 1883 on 0.6 acres, and has a total of 5,112 square feet on two floors.

Currently has no fire suppression system and was not inspected in the past year.

Key issues:

- Limited parking
- No heating or air conditioning
- Not ADA compliant
- Fire alarm system outdated
- Structurally the building will need a great deal of work
- For a RECC with all seven communities it would be too small
- Town recently informed they have been awarded a grant to bring the building to ADA compliance

Facility Analysis: Hopkinton Center School, 11 Ash Street, Hopkinton, MA

Built in 1928 - Front Building, 1950 - Center Section, 1986 - Addition of Rear Classrooms (6) and Gym
Front Building

Front Building: Two (2) Floors of usable area (5036 each floor) - plus basement

Center Section: Two (2) Floors of usable area (approximately 10,292 each floor)

Rear Section: Two (2) floors & Gym - 6386 gym, (approximately 2840 each floor)

- Owned by Town of Hopkinton
- Sprinkler and AFA systems installed
- ADA compliant

Facility Analysis

1. Facility Requirements:

The proposed facility would need to include the following design characteristics:

- Number of employees - 20
- Functional:
 - Dispatch area for six (6) workstations/ positions
 - DCAMM /workstation space allocation 40/60sq. ft.
 - Utility/phone systems
 - IT/Radio Room
 - Office Space
 - Employee area/Breakroom
 - Conference/meeting space
 - Storage Room
 - Generator

2. Basic Building Components:

The architectural design must accommodate the following spaces and equipment:

- Regional Emergency Communication Center - Dispatch Room
 - Workstations for six (6) dispatch positions that include five dispatcher radio/911 positions, and one supervisor
 - ADA compliance to facility/RECC
 - 1998 OSH and ADA console design
 - 1990 ADA ACT
 - Governs access
 - Reach Distances
 - Reach Angles
 - 1998 OSHA
 - Minimize workplace injuries
 - Both regulations have resulted in boomerang shaped consoles
- System Equipment Room
 - Power, fiber, 911 lines and system, administrative phones system, security, IT servers and radio systems
- Employee Area
 - Kitchen/Breakroom
 - Locker Rooms (M&F)

- Bathroom (M&F)
- Office Space – three (3) rooms for the Administrator, Administrative Assistant, and Supervisors
- Training/Conference room
- Storage Room

3. Building Layout Recommendations:

The design should consider the following functional recommendations:

- Administrative offices two (2), male and female locker rooms, bathrooms and shower areas, kitchen and break room, conference/meeting room, dispatch area, storage room, Utility/phone room IT/Radio Room.
- Dispatching area, supervisors' office should be arranged so they are as close as possible to the computer room, so that cabling runs are minimized.
- The bathrooms, break and other areas that have plumbing should be arranged so there is no possibility that spills, leaks or other water problems could flood or damage the dispatching area or computer room, including floor drains, scuppers, or other features.
- Consideration should be given to the placement of the dispatch area, computer room and electrical service to minimize the routing of cables and power lines.
- Consideration should also be given to how cables and wires should be routed into the dispatch area: via a raised floor, raceways or overhead.

4. Characteristics of New 911 Centers

New 911 centers are becoming information centers of the future, and the following trends should be factored into the design:

- The need for additional computers
- The need for additional large wall monitors
- The desire to create a comfortable and pleasant environment
- Technology-driven infrastructure needs
- Self-contained HVAC systems
- Grounding and lighting systems crafted to the latest industry standards – not just to code
- Stress reduction design elements
 - Bright accent colors, prints, windows, and lighting control options

5. Consoles and Chairs Ergonomics

The consoles, chairs and other furniture shall be ergonomically designed, to lessen the chance of repetitive stress injuries. This should include chairs that are fully adjustable for height, back angle and height, and armrest height; consoles adjustable for height (from sitting down to standing up); keyboard rests adjustable for height, angle, and distance from the console.

The consoles should be designed to allow easy access to all controls without reaching beyond an average arm's length. Terminals and other video displays should be placed an equal distance from the focal point of the console, and that distance should be according to any national standards or available studies. The video terminals should be arranged to allow their horizontal adjustment closer and further away from the dispatcher.

6. Lighting

Center lighting circuitry should be arranged to prevent a lighting failure to any large area of the building. Lighting in all areas of the building shall conform to any national standard levels for office areas.

There should be overall and individual console lighting in the dispatching area. The **console lighting should individually be controllable at each console. Consideration should be given to incandescent lighting for the console areas.** Overall lighting should be arranged to minimize glare on video display terminals.

Consideration should be given to the placement of terminals and windows to reduce the amount of glare on the video terminals, or bright window light directly behind the video terminals.

7. Air Conditioning

The building air conditioning system should be arranged to provide a sufficient flow of fresh--not recirculated--air to the dispatch area, to filter the air to remove possible contaminants including pollen, mold, dust, and mildew, and to reduce drafts on employees. Temperature control should be available to authorized personnel, but the range should be limited so it always provides sufficient cooling for electronic equipment in the building.

Consideration should be given to installing an electronic filtering system for that portion of the air conditioning system that serves the dispatch area, to further filter contaminants from the air. Consideration should be given to a positive pressure air system that keeps outside contaminants out.

8. Sound Control

The dispatch area should have some method of sound control for reducing the volume of noise, echoes, and other unwanted artifacts. Methods include acoustic tiles, carpets, wall curtains or other coverings.

9. Emergency/Secondary Power

The dispatch center will require an emergency power source during times of power shortages. An adequate generator will be required to immediately power the systems in place at the Regional Emergency Communication Center to ensure that all calls are being received and appropriate resources dispatched to the incident. The Secondary Power Source shall:

- Consist of one or more standby engine-driven generators installed in accordance with NFPA 70, National Electrical Code, Article 701.
- Be utilized upon failure of the primary power and the transfer to the standby source shall be automatic.

RECC Site Assessment Matrix

Potential Site	Site 1	RATING (1-5)	Site 2	Rating (1-5)
Location Name Street Address Town	20 Philips Street Westborough		111 Ash Street Hopkinton	
Flood Zone				
HZMAT Risk				
Generator				
Fiber Optic Connection (Carrier)				
Handicap accessible				
Radio Tower Site Potential				
Dispatch Area				
Building Condition				
Expansion Capability				
Municipal Owned				
Ability to provide large dispatch area, two or three offices, a meeting/training room, kitchen, locker room, M/W bathrooms, and technology backroom				
Ability for long term lease/ownership				
Total Capability Rating				