Regional Emergency Communications Center Study

Consolidation Feasibility Analysis and Assessment

AECOM

Executive Presentation

June 29, 2010

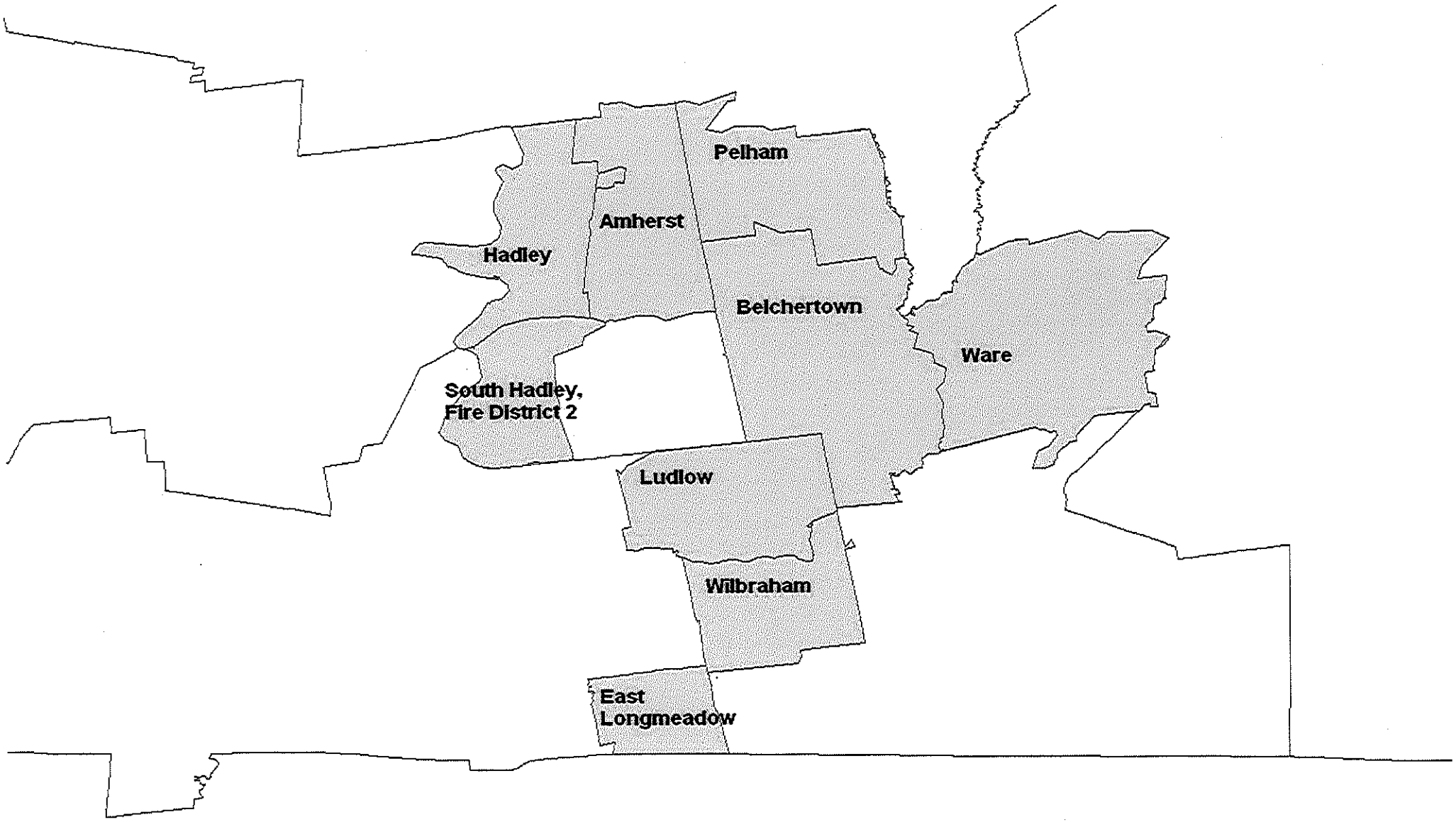
Town of Amherst, Massachusetts

Region

Region is comprised of diverse and complex communities

- Town of Amherst
- Town of Belchertown
- Town of East Longmeadow
- Town of Hadley
- Town of Ludlow
- Town of Pelham
- Town of South Hadley
- Town of Ware
- Town of Wilbraham
- University of Massachusetts
- South Hadley Fire District #2

Region


Pelham
Amherst
Hadley
Belchertown
Ware
South Hadley,
Fire District 2
Ludlow
Wilbraham
East
Longmeadow

Study Goals

AECOM was to study 22 tasks, and these generally are:

- Analyze public safety operations, preparedness and response, and benefits or disadvantages.
- Analyze how an RECC would affect the array of services provided to dispatch entities and their ability to respond to 9-1-1 calls.
- Analyze how an RECC would affect interoperability of communications systems on local, regional and statewide basis.
- Analyze the capacity for coordination of local and regional police, fire, and EMS resources including response to routine events and major disasters.

Study Goals – (Continued)

- Demonstration that initial costs are justified based on proposed work and expected benefits, including the potential for ongoing operating or capital cost savings.
- Provide an opinion of the one-time and recurring costs.
- Identify financial resources available to provide ongoing support for the project so that it may be sustainable into future years.
- Provide an examination of potential legal and organizational structures for the RECC. This RECC will be unique in that it will incorporate several towns and a state institution. The report should recommend a structure that will be allowable by law and suitable in practice for all participating agencies.
- Review the advantages and disadvantages of partial or full consolidation, and submit a written recommendation to the Town of Amherst.

General Findings

AECOM interviewed personnel and surveyed the 9 centers and compared against 23 known dispatch facility characteristics on a Four Level Scoring Scale

General Findings

- Dispatch Center Size
- Dispatch Center Condition
- Equipment Area Size
- Equipment Area Condition
- Expansion Capability
- Radio Console System
- CAD System
- CPE System
- PBX System
- Dispatch Furniture
- Fire Protection
- Lighting
- HVAC
- Reliability
- Generator
- UPS
- Back – Up Provisions
- Maintainability
- Parking
- Internal Facilities
- Security
- Grounding
- Mapping

General Findings

Regional Centers were Graded:

- Characteristic Not Present – 2%
- Characteristic Poor – 47%
- Characteristic Fair – 35%
- Characteristic Good – 16%

General Findings

Strong Areas

- CPE Systems
- CAD Systems
- Generator
- UPS
- Internal Facilities
- Security
- Fire Protection

Weak Areas

- Center Size
- Expansion Ability
- Equipment Room Size
- Equipment Condition
- HVAC
- Maintainability
- Grounding
- Back-Up Provisions

General Findings

Collateral Duties

- Admin Telephones
- Records Management
- Point of Contact

Personnel Issues

- Small Staffs
- Limited Advancement Opportunities
- Supervision thru Sworn personnel
- Limited Training Opportunities

General Findings

Staffing

- 12 to 14 dispatchers on duty typically in the 9 centers
- One on duty for 6
- 3 have 2 on duty
- 52 total personnel
- Police Officers used as Dispatchers & for relief

EMD

- Cannot perform with one dispatcher on duty
- Only 1 Center is performing now
- Soon to be required by Commonwealth

General Findings

Most Salient Findings

- Limited Staffing on duty with 1 as the typical staff
- Operate on separate channels and have limited inter-community awareness
- Operate on 3 different radio bands
- Limited EMD
- Size reduces efficiency
- Limited Back-up

Two Way Radio

- Poor coverage
- Aged Equipment
- Narrow Banding required

Alternatives

In each Consolidation option presented, the new center would have the following:

- New Facility
- Single CAD and RMS
- Single CPE
- Single DVL
- Single Mapping System
- Perform EMD
- Complete Staff with Management and Supervision

Alternatives - New Facility Characteristics

Facility Requirements:

- As distant as feasible from known hazards
- lowest floor above 100 year flood elevation
- major transportation routes
- airport runways and approaches

Reliability and redundancy:

- Independent HVAC unit for dispatch area
- Back-up HVAC
- Emergency generator with 24 HR fuel supply
- UPS and battery systems
- Two separate power substations
- Two separate telephone CO's

Alternatives

In each Consolidation option presented, there will be differing Back-Up Provisions. This is largely dependent on:

- Which Agencies are Participating
- What equipment is freed for use
- What Spaces are freed for use
- Location of the Primary PSAP
- Choices may be:
- Self Back-up
- Nearby Centers
- State Police
- Springfield

Alternatives

- Option 1: No consolidation
- Option 2: Form Regional Center with 4 Towns and the University
- Option 3: Form Regional Center with 6 Towns, the Fire District, and the University
- Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

Option 1: No consolidation

- Operations Remains as is currently
- Staffing remains at level of 52 total and generally 1 on duty per Center
- Budgets remain at:
  - Personnel Services $3,123,576
  - Operating Expenses $ 475,552
  - Capital Outlay $ 617,174
  - Total $4,216,302
- Operate in Existing Spaces

Option 1: No consolidation

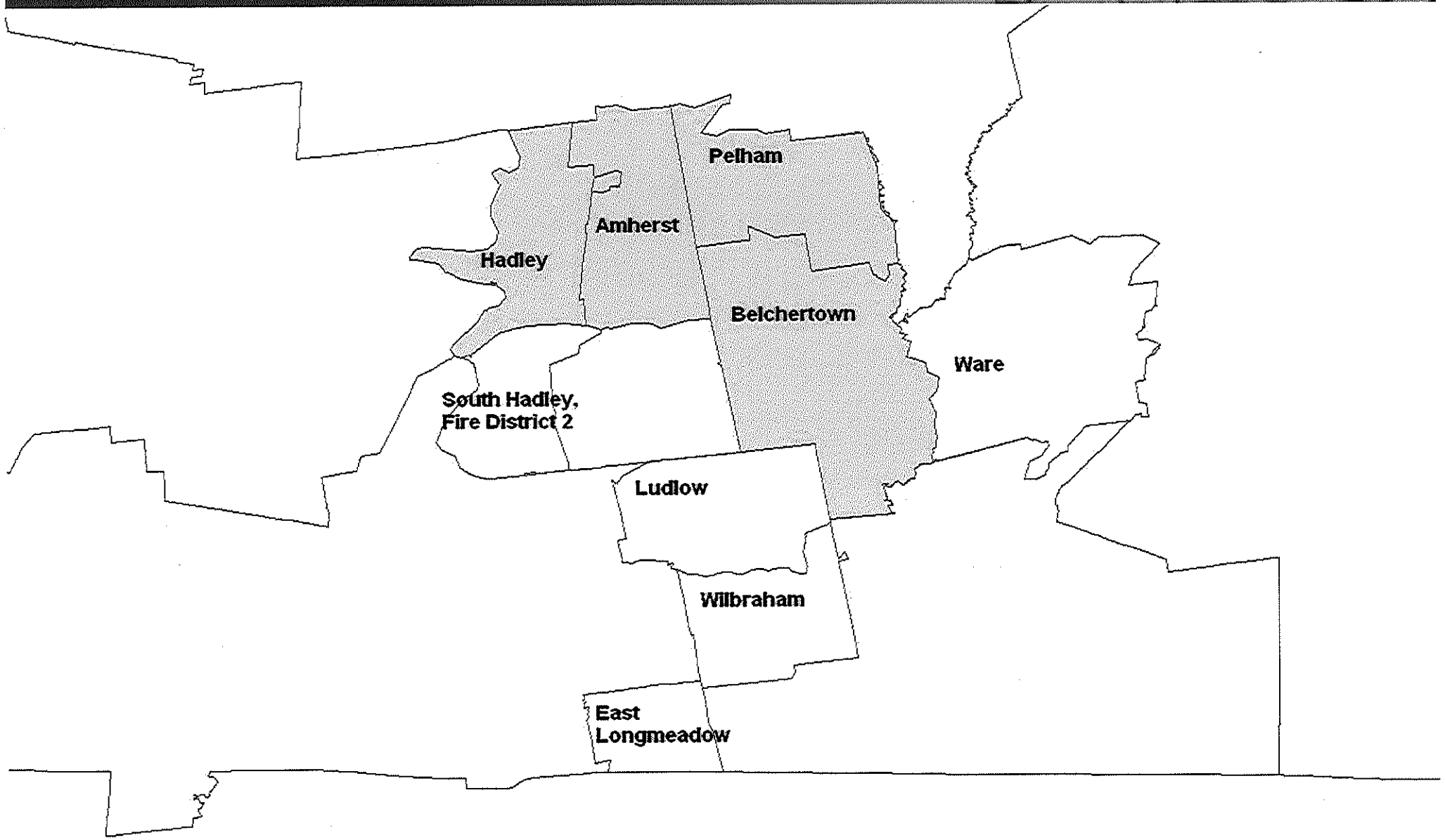
Strengths: Retain maximum agency control since each agency is in charge of its own dispatch. Least disruption to current operations and allows most focus on individual communities.

Weaknesses: The alternative provides no improvement to the most serious problems with the current situation. Significant duplication of equipment exists, since each agency must purchase and maintain its own systems and equipment. No improvement of interagency situational awareness. No improvement in interagency communications (interoperability).

Option 2: Form Regional Center with 4 Towns and the University:

- Consolidate
  - Amherst
  - Belchertown
  - Hadley
  - Pelham
  - University of Massachusetts
- Other Towns & Fire District Remain as Same

Option 2: Form Regional Center with 4 Towns and the University:



Option 2: Form Regional Center with 4 Towns and the University:

- Staffing – 29
  - Manager
  - Training Coordinator
  - Technical Coordinator
  - Admin Assistant
  - Supervisors – 5
  - Dispatchers – 20
- Compared to – 29 dispatchers
- Space Required will be approximately 7,200 Sqft

Option 2: Form Regional Center with 4 Towns and the University:

- Services To Be Performed
  - Primary Public Safety Answering Point (PSAP)
  - Answer 911 and Administrative lines
  - Dispatch & coordinate resources
  - Perform CJIS/NCIC functions
  - EMD

Option 2: Form Regional Center with 4 Towns and the University:

Amherst Regional Emergency Communication Center

Participation Ratio

Option 2

USER AGENCY	ANNUAL CALL VOLUME	POPULATION	PARTICIPATION RATIO
Amherst	6,301	24,565	40%
UMASS	5,731	11,000	26%
Belchertown	2,706	14,233	20%
Pelham	500	1,386	3%
Hadley	2,379	4,732	11%
TOTAL	**17,617**	**55,916**	**100%**

Option 2: Form Regional Center with 4 Towns and the University:

- Expected Costs
  - Capital Replacement - $336,957
  - Operations & Maintenance – $56,100
  - Salaries - $1,611,209

Option 2: Form Regional Center with 4 Towns and the University:

Amherst Regional Emergency Communication Center

Annual Expenses Participation

Option 2

USER AGENCY	PARTICIPATION RATIO	ANNUAL ASSESSMENT	AFTER GRANT
Amherst	40%	$ 818,145.65	$ 554,447.23
UMASS	26%	$ 523,809.80	$ 354,979.46
Belchertown	20%	$ 387,123.38	$ 262,348.76
Pelham	3%	$ 53,671.35	$ 36,372.42
Hadley	11%	$ 221,517.14	$ 150,119.45
TOTAL	**100%**	**$ 2,004,267.32**	**$ 1,358,267.32**

Option 2: Form Regional Center with 4 Towns and the University:

Amherst Regional Emergency Communication Center

Annual Savings

Option 2

USER AGENCY	CURRENT EXPENSES	ANNUAL ASSESSMENT	ANNUAL SAVINGS
Amherst	$ 770,048.00	$ 554,447.23	$ 215,600.77
UMASS	$ 448,782.00	$ 354,979.46	$ 93,802.54
Belchertown	$ 564,616.19	$ 262,348.76	$ 302,267.43
Pelham		$ 36,372.42	
Hadley	$ 210,454.00	$ 150,119.45	$ 60,334.55
TOTAL	**$ 1,993,900.19**	**$ 1,358,267.32**	**$ 672,005.29**

Option 2: Form Regional Center with 4 Towns and the University:

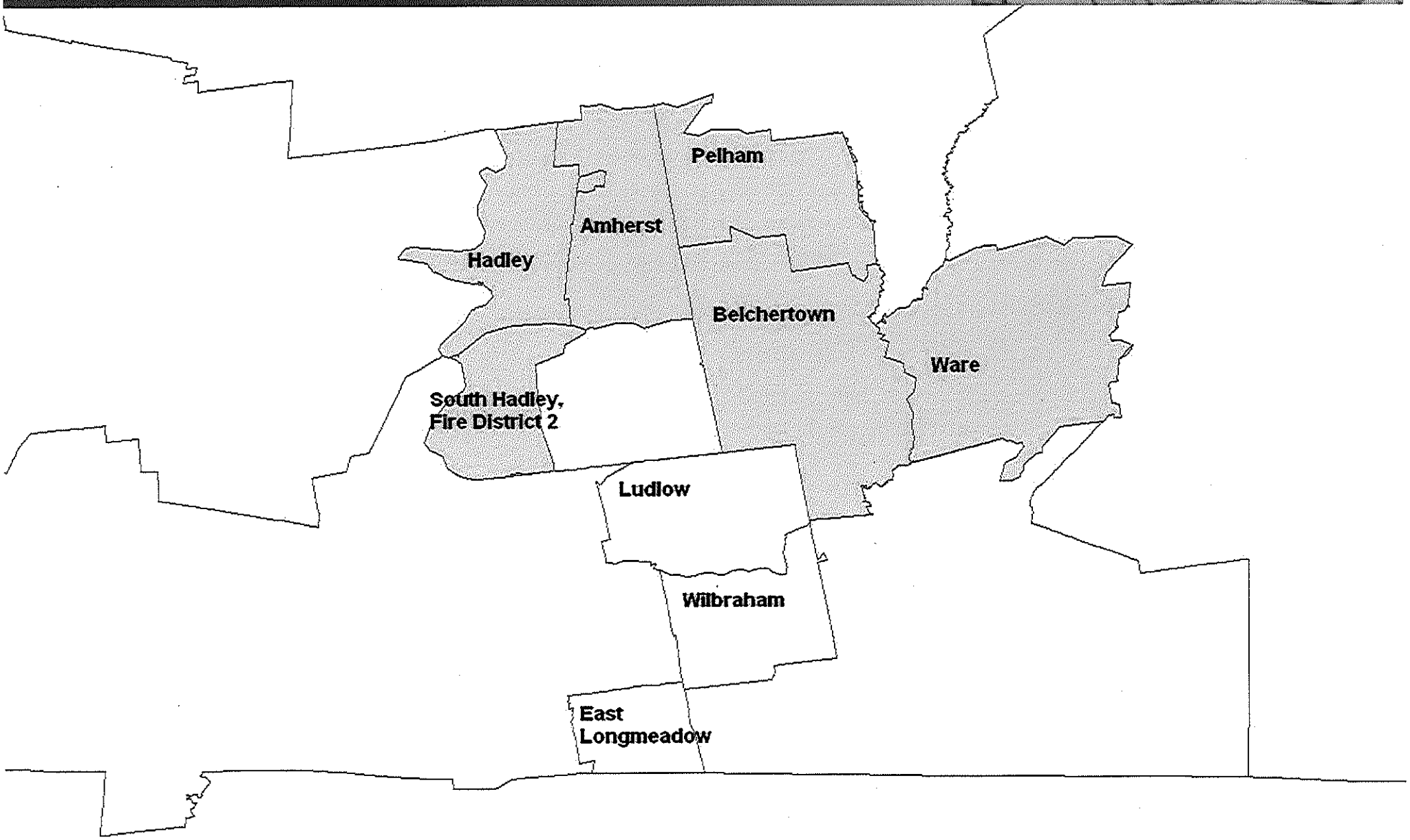
- Strengths: The public safety agencies of four towns and the University work closely together on an on-going basis. Signed mutual aid agreements already exist between the police departments. Improvement of the call handling procedures for the Amherst Fire Department in providing emergency medical transport for Hadley, Pelham and the University, and dispatches the Belchertown Fire Department.

- Weaknesses: The interagency situational awareness and interoperability would not include neighboring towns that frequently interact with the participating towns.

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

- Consolidate
  - Amherst
  - Belchertown
  - Hadley
  - Pelham
  - University of Massachusetts
  - South Hadley
  - Ware
  - Fire District #2
- Other Towns Remain as Same

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University



Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

- Staffing – 34
  - Manager
  - Training Coordinator
  - Technical Coordinator
  - Admin Assistant
  - Supervisors – 5
  - Dispatchers – 25
- Compared to – 37 dispatchers
- Space Required will be approximately 8,750 Sqft

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

- Services To Be Performed
  - Primary Public Safety Answering Point (PSAP)
  - Answer 911 and Administrative lines
  - Dispatch & coordinate resources
  - Perform CJIS/NCIC functions
  - EMD

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

Amherst Regional Emergency Communication Center

Participation Ratio

Option 3

USER AGENCY	CALL VOLUME	POPULATION	PARTICIPATION RATIO
Amherst	6,301	24,565	28%
UMASS	5,731	11,000	18%
Belchertown	2,706	14,233	14%
Pelham	500	1,386	2%
Hadley	2,379	4,732	8%
South Hadley	3,538	14,892	16%
Fire District #2	474	2,304	2%
Ware	2,666	9,824	11%
TOTAL	**24,295**	**82,936**	**100%**

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

- Expected Costs
  - Capital Replacement - $226,102
  - Operations & Maintenance – $65,900
  - Salaries - $1,880,642

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

Amherst Regional Emergency Communication Center

Annual Expenses Participation

Option 3

USER AGENCY	PARTICIPATION RATIO	ANNUAL ASSESSMENT	AFTER GRANT
Amherst	28%	$ 617,832.28	$ 434,130.05
UMASS	18%	$ 400,866.51	$ 281,675.47
Belchertown	14%	$ 291,479.52	$ 204,812.90
Pelham	2%	$ 40,801.46	$ 28,669.82
Hadley	8%	$ 169,385.40	$ 119,021.45
South Hadley	16%	$ 353,975.31	$ 248,726.59
Fire District #2	2%	$ 51,483.91	$ 36,176.02
Ware	11%	$ 246,820.21	$ 173,432.29
TOTAL	**100%**	**$ 2,172,644.60**	**$ 1,526,644.59**

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

Amherst Regional Emergency Communication Center

Annual Savings

Option 3

USER AGENCY	CURRENT EXPENSES	ANNUAL ASSESSMENT	ANNUAL SAVINGS
Amherst	$ 770,048.00	$ 434,130.05	$ 335,917.95
UMASS	$ 448,782.00	$ 281,675.47	$ 167,106.53
Belchertown	$ 564,616.19	$ 204,812.90	$ 359,803.29
Pelham	$ -	$ 28,669.82	$ -
Hadley	$ 210,454.00	$ 119,021.45	$ 91,432.55
South Hadley	$ 320,713.96	$ 248,726.59	$ 71,987.37
Fire District #2	$ -	$ 36,176.02	$ -
Ware	$ 386,904.00	$ 173,432.29	$ 213,471.71
TOTAL	**$ 2,701,518.15**	**$ 1,526,644.59**	**$ 1,239,719.40**

Option 3: Form Regional Center with 6 Towns, the Fire District, and the University

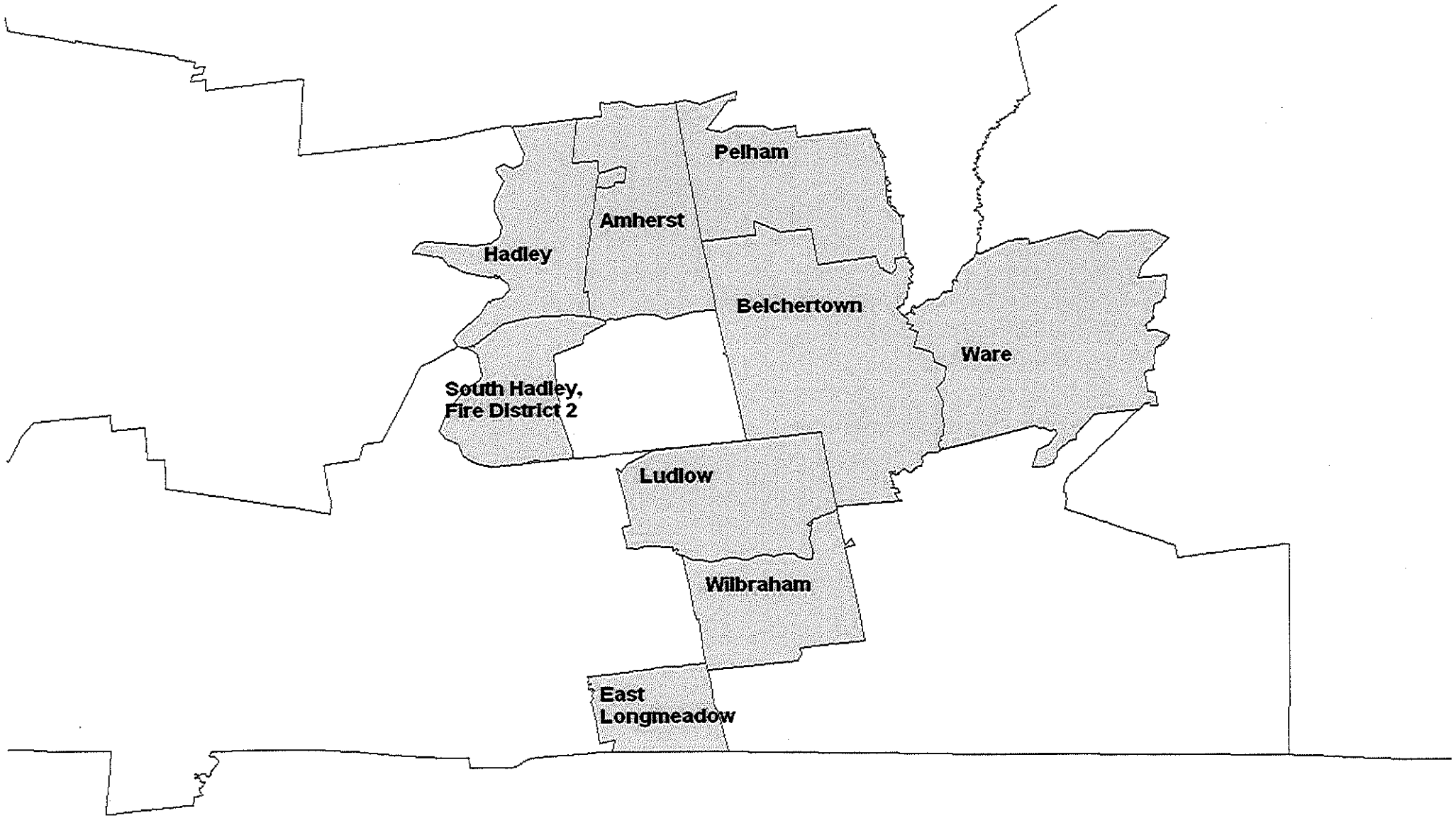
- Strengths: All six towns, the University, and the fire district are located in Hampshire County east of the Connecticut River. Each of the towns borders on another town participating in the RECC. All six towns are served by the same court system so the legal procedures are the same.

- Weaknesses: The interaction between the Towns of South Hadley and Ware are not as universal as the interaction between the other towns.

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

- Consolidate
  - Amherst
  - Belchertown
  - Hadley
  - Pelham
  - University of Massachusetts
  - South Hadley
  - Ware
  - Fire District #2
  - Wilbraham
  - Ludlow
  - East Longmeadow

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University



Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

- Staffing – 39
  - Manager
  - Training Coordinator
  - Technical Coordinator
  - Admin Assistant
  - Supervisors – 5
  - Dispatchers – 30
- Compared to – 52 dispatchers
- Space Required will be approximately 9,600 Sqft

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

- Services To Be Performed
  - Primary Public Safety Answering Point (PSAP)
  - Answer 911 and Administrative lines
  - Dispatch & coordinate resources
  - Perform CJIS/NCIC functions
  - EMD

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

Amherst Regional Emergency Communication Center

Participation Ratio

Option 4

USER AGENCY	CALL VOLUME	POPULATION	PARTICIPATION RATIO
Amherst	6,301	24,565	18%
UMASS	5,731	11,000	12%
Belchertown	2,706	14,233	9%
Pelham	500	1,386	1%
Hadley	2,379	4,732	5%
South Hadley	3,538	14,892	11%
Fire District #2	474	2,304	2%
Ware	2,666	9,824	7%
East Long Meadow	3,617	15,332	11%
Ludlow	4,184	22,410	14%
Wilbraham	3,180	13,970	10%
TOTAL	**35,276**	**134,648**	**100%**

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

- Expected Costs
  - Capital Replacement - $369,401
  - Operations & Maintenance – $72,400
  - Salaries - $2,150,075

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

Amherst Regional Emergency Communication Center

Annual Expenses Participation

Option 4

USER AGENCY	PARTICIPATION RATIO	ANNUAL ASSESSMENT	AFTER GRANT
Amherst	18%	$ 491,180.09	$ 370,650.09
UMASS	12%	$ 324,024.13	$ 244,512.30
Belchertown	9%	$ 230,862.11	$ 174,211.17
Pelham	1%	$ 32,709.71	$ 24,683.12
Hadley	5%	$ 136,777.42	$ 103,213.80
South Hadley	11%	$ 281,178.46	$ 212,180.47
Fire District #2	2%	$ 40,764.22	$ 30,761.15
Ware	7%	$ 196,706.47	$ 148,436.94
East Long Meadow	11%	$ 276,193.35	$ 208,418.65
Ludlow	14%	$ 368,555.98	$ 278,116.54
Wilbraham	10%	$ 253,607.04	$ 191,374.76
TOTAL	**100%**	**$ 2,632,558.98**	**$ 1,986,558.99**

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

Amherst Regional Emergency Communication Center

Annual Savings

Option 4

USER AGENCY	2009 BUDGET	ANNUAL ASSESSMENT	ANNUAL SAVINGS
Amherst	$ 770,048.00	$ 370,650.09	$ 399,397.91
UMASS	$ 448,782.00	$ 244,512.30	$ 204,269.70
Belchertown	$ 564,616.19	$ 174,211.17	$ 390,405.02
Pelham	$ -	$ 24,683.12	
Hadley	$ 210,454.00	$ 103,213.80	$ 107,240.20
South Hadley	$ 320,713.96	$ 212,180.47	$ 108,533.49
Fire District #2	$ -	$ 30,761.15	$ -
Ware	$ 386,904.00	$ 148,436.94	$ 238,467.06
East Long Meadow	$ 241,535.00	$ 208,418.65	$ 33,116.35
Ludlow	$ 428,623.31	$ 278,116.54	$ 150,506.77
Wilbraham	$ 341,626.00	$ 191,374.76	$ 150,251.24
TOTAL	**$ 3,713,302.46**	**$ 1,986,558.99**	**$ 1,782,187.74**

Option 4: Form Regional Center with 9 Towns, the Fire District, and the University

- Strengths: This alternative provides the greatest improvement in situational awareness and interagency communications and coordination. Since the systems would be shared, significant improvements could be realized in the exchange of information between agencies. This alternative provides for the elimination of duplication of personnel, equipment and systems.

- Weaknesses: There could be the perception of the loss of agency control in that general policies and procedures would be developed to meet the needs of all agencies rather than a single agency as now exists. A new facility and new systems and equipment would be required. The location could be inconvenient for some agencies.

Review of Options – Option 2

Name	Call Volume 2009	Population 2009 (1)	Present Budget 2010	Proposed Annual Assesment (4)	State 911 Grant $646,000 (5)	Annual Net to Participant (6)	Net Savings from 2010 (7)
Amherst	6,301	25,565	$ 770,048.00	$ 818,145.64	$ 263,698.40	$ 554,447.24	$ 215,600.76
UMass	5,731	11,000	$ 448,782.00	$ 523,809.80	$ 168,830.34	$ 354,979.46	$ 93,802.54
Belchertown	2,706	12,968	$ 564,616.19	$ 387,123.38	$ 124,774.63	$ 262,348.76	$ 302,267.43
Pelham	500	1,403		$ 53,671.35	$ 17,298.94	$ 36,372.42	$ (36,372.42)
Hadley	2,379	4,793	$ 210,454.00	$ 221,517.14	$ 71,397.70	$ 150,119.45	$ 60,334.55
						0	$ -
Total	**17,617**	**55,729**	**$ 1,993,900.19**	**$ 2,004,267.32**	**$ 646,000.00**	**$ 1,358,267.32**	**$ 635,632.87**

Review of Options – Option 3

Name	Call Volume 2009	Population 2008 (1)	Present Budget 2010	Annual Assessment (4)	Grant $646,000 (5)	Annual Net to Participant (6)	Net Savings from 2010 (7)
Amherst	6,301	25,565 (2)	$ 770,048.00	$ 617,832.28	$ 183,702.23	$ 434,130.05	$ 335,917.95
UMass	5,731	11,000 (3)	$ 448,782.00	$ 400,866.51	$ 119,191.04	$ 281,675.47	$ 167,106.53
Belchertown	2,706	12,968	$ 564,616.19	$ 291,479.52	$ 86,666.62	$ 204,812.90	$ 359,803.29
Pelham	500	1,403		$ 40,801.46	$ 12,131.64	$ 28,669.82	$ (28,669.82)
Hadley	2,379	4,793	$ 210,454.00	$ 169,385.40	$ 50,363.95	$ 119,021.45	$ 91,432.55
South Hadley	3,538	14,892	$ 320,713.96	$ 353,975.31	$ 105,248.71	$ 248,726.59	$ 71,987.37
Fire District 2	474	2,304		$ 51,483.91	$ 15,307.89	$ 36,176.02	$ (36,176.02)
Ware	2,666	9,707	$ 386,904.00	$ 246,820.21	$ 73,387.91	$ 173,432.29	$ 213,471.71
Total	**24,295**	**82,632**	**$ 2,701,518.15**	**$ 2,172,644.59**	**$ 646,000.00**	**$1,526,644.59**	**$ 1,174,873.56**

Review of Options – Option 4

Name	Call Volume 2009	Population 2008 (1)	Present Budget 2010	Proposed Annual Assessment (4)	State 911 Grant $646,000 (5)	Annual Net to Participant (6)	Net Savings from 2010 (7)
Amherst	6,301	25,565	$ 770,048.00	$ 491,180.09	$ 120,530.00	$ 370,650.09	$ 399,397.91
UMass	5,731	11,000	$ 448,782.00	$ 324,024.13	$ 79,511.83	$ 244,512.30	$ 204,269.70
Belchertown	2,706	12,968	$ 564,616.19	$ 230,862.11	$ 56,650.93	$ 174,211.17	$ 390,405.02
Pelham	500	1,403		$ 32,709.71	$ 8,026.59	$ 24,683.12	$ (24,683.12)
Hadley	2,379	4,793	$ 210,454.00	$ 136,777.42	$ 33,563.62	$ 103,213.80	$ 107,240.20
South Hadley	3,538	14,892	$ 320,713.96	$ 281,178.46	$ 68,997.99	$ 212,180.47	$ 108,533.49
Fire District 2	474	2,304		$ 40,764.22	$ 10,003.08	$ 30,761.15	$ (30,761.15)
Ware	2,666	9,707	$ 386,904.00	$ 196,706.47	$ 48,269.53	$ 148,436.94	$ 238,467.06
East Longmeadow	3,617	14,100	$ 241,535.00	$ 276,193.35	$ 67,774.70	$ 208,418.65	$ 33,116.35
Ludlow	4,184	21,209	$ 428,623.31	$ 368,555.98	$ 90,439.44	$ 278,116.54	$ 150,506.77
Wilbraham	3,180	13,473	$ 341,626.00	$ 253,607.04	$ 62,232.28	$ 191,374.76	$ 150,251.24
Total	**35,276**	**131,414**	**$ 3,713,302.46**	**$ 2,632,558.99**	**$ 646,000.00**	**$1,986,558.99**	**$ 1,726,743.47**

Suggested Timetable

- A shared Communications Center should be created between the 6 Towns, the Fire District, and the University of Massachusetts
- Develop new Facility
- Create Board to govern
- Technical platforms
  - Continue to use Plant/CML
  - Continue to use IMC with upgrades
  - Radio Console system be adapted to existing & new system
  - New DVL
  - New Dispatch Furniture

Suggested Timetable

- Commitment to Participate – September 2010
- Draft Intergovernmental Agreement – December 2010
- Facility Development – March 2011
- Complete Center Renovation – June 2012
- Cutover – August 2012

Conclusion

Questions & Answers

Thank You

James.Dye@aecom.com