

**Exploration of Fire Service Regionalization: Berea, Brook Park, Middleburg Heights, Parma, and Parma Heights**

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## **Preface**

This report includes an analysis of fire safety service delivery and possible future options for the municipalities of Berea, Brook Park, Middleburg Heights, Parma, and Parma Heights. The conclusions and future options presented in this report were reviewed by an Advisory Committee comprised of fire chiefs, fire fighters, union representatives, municipal representatives, and health care providers. The Advisory Committee suggested many changes to the draft materials they reviewed. The changes suggested by the Advisory Committee were incorporated into this report.

## **Guide to the Document**

- The Executive Summary provides an overview of the report, including the factors affecting the safety services rendered and the conclusions drawn by the Advisory Committee.
- Section 1 provides an introduction to the project.
- Section 2 provides an overview of the five municipalities.
- Section 3 reviews fire and pre-hospital emergency services (EMS) provided by the cities.
- Section 4 provides supporting case data.
- Section 5 outlines possible future courses of action.
- Data sources, documents, and interviews are chronicled in the reference section at the end of this report.

## **Credits**

Professors Mary Pisnar and Pierre David are the primary authors of this report. Thomas Kovacevich and Timothy Fijalkovich collected and analyzed all incident data as they were submitted to the State of Ohio Fire Marshall's Office and completed an incidents' geographic profiling. Jamie Smallwood prepared the data on the collective bargaining agreements. Jacquelyn Justice prepared comparative demographic and operational data. Senator Eric Fingerhut and Mary Griglak coordinated the Advisory Team and provided valuable input at all phases of the project.

Guidance for the project was provided by the Advisory Team consisting of:

- David Akers, President, Regional Purchasing Limited
- Jim Asterino, President, Northern Ohio Firefighters
- Bernard Benedict, Chief, Middleburg Heights Fire Department
- Pam Falasco, Vice President Surgical, Emergency and Rehabilitative Services, Parma Community General Hospital
- Jack Kafer, Executive Director, Building Owners and Managers Association of Berea
- Cyril Kleem, Executive Director, Berea Community Development Director
- Patricia A. Pell, Executive Officer, Parma Chamber of Commerce

- Mark Ramach, Lieutenant, Brook Park Fire Department
- Dennis Ryan, Assistant Fire Chief, Parma
- Dr. James Rybak, Director of Emergency Medical Services, Southwest General Hospital
- Dan Sondles, Chief Legislative Officer, Westfield Group
- Ken Taylor, President and CEO, Southwest General Hospital
- James Walters, Firefighter, Brook Park Fire Department
- Marty Zanotti, Mayor, Parma Heights

Financial support from Forest City Enterprises, Parma Community General Hospital, Westfield Insurance, Southwest General Health Center, and the Gund Foundation made this work possible, and is greatly appreciated. The financial support paid the cost of student and faculty stipends and the administrative costs of the project.

## **Executive Summary**

This exploratory study examines the possibilities presented by fire safety service collaboration among five Cuyahoga County communities. The municipalities of Berea, Brook Park, Middleburg Heights, Parma, and Parma Heights voluntarily agreed to participate in the process of uncovering ways to optimize the utilization of fire resources. The study was initiated as a collaborative effort between Baldwin-Wallace College and the municipalities. The study took place over a four month period, beginning in June of 2005. The study was clearly exploratory in nature and not prescriptive in outcome. Bringing all parties and issues to the discussion was an operational guideline.

The concept of regionalization of fire safety services is not new. Since the 1930s, the fragmentation of municipal areas has been hailed as citizens' free choice and decried as redundant bureaucracies (Lyons & Scheb II; 1998). A confluence of demographic, occupational, and operational factors has provided substantial evidence for re-examining regionalization. The cities of Berea, Brook Park, Middleburg Heights, Parma, and Parma Heights are experiencing out-migration of population, a trend which leaves the cities in a financial bind. In addition, the business makeup for these cities is typically moving from a manufacturing base to a service base, again shifting the revenue stream for the cities, although the specifics are different for each of the five municipalities.

The occupational definition of fire safety services has changed dramatically over the past twenty years. Since the early 1980s, when their traditional "fire service" responsibilities were first expanded to include Emergency Medical Services, the services rendered in these five municipalities have evolved to now become dominated by EMS (Manning, 2003). EMS requires additional training and a somewhat different skill set than what was needed under the traditional fire department operation, and involves additional input from other community institutions. Parma Community General Hospital and Southwest General Health Center have become critical links in delivering basic and advanced life support services under the leadership of their EMS Medical Directors.

Operational factors include the ability of each city to deliver a quality service as indicated by the Insurance Standards Organization (ISO), which ranks municipalities from 1 to 10, with 1 being excellent service, and 10 being poor service. Currently, Brook Park and Parma are rated 4 on the ISO scale, while Berea, Middleburg Heights, and Parma Heights are rated 5; the differences between these two grades are minimal. While different factors affect the individual cities' rating, two areas of possible improvement stand out: staffing and dispatch. Improvements in these two operational dimensions could significantly improve the cities' rating, thus lowering insurance costs for business operating in those cities. Such an improvement may provide an additional incentive for businesses to locate within these cities.

The following factors related to safety service delivery will be explored in this study:

- Population and growth projections for the five municipalities: short term projections were used to evaluate the safety services most affected by the changing demographics.
- Current operations: major equipment utilization, run data and staffing models were used to evaluate efficiencies.
- Service improvement opportunities: fire service effectiveness is closely related to the ability to provide extensive manpower at the site of a conflagration.
- Cost containment strategies: service duplication and inefficiencies related to overlapping service boundaries are examined under this category. Cost reduction opportunities may be related to economies of scale, shared facilities, infrastructure upgrades and other practices are identified.
- Opportunities for shared resources: operational capacity, staffing, and equipment may be shared to reduce costs.
- Evaluation of management efficiencies: the delivery of high quality safety service at the lowest necessary expenditure is management efficiency. Consideration of training, advanced planning, implementation of effective strategies for budgeting, managing costs, utilizing personnel, customer service and involvement, resource management, and compliance with acceptable standards is contained under management efficiencies.

#### Growth and Population Projections

- The overall population of all five cities is projected to decline based on the current trend.
- The number of citizens over the age of 60 will increase by 9% between 2005 and 2015, with the largest increase in those between the ages of 70-79 (U.S. Census, 2005).
- The number of EMS calls in the five municipalities is officially projected to increase by at least 9% between 2005 and 2015, though the actual increase may be much higher due to improvements in emergency medical technology and increased life expectancy.

#### Operational issues: current status and future recommendations

- The number of first response units provides good service in the five communities involved in this study. It should remain unchanged in order to adequately serve all residents.
- The number of ladder units may be reduced. This would still provide back-up response time of less than 10 minutes to most areas.
- A lack of standardization in operating procedures should be remedied to improve incident management effectiveness.
- Mutual aid agreements are adequate in providing additional assistance in the case of large incidents, but automatic aid agreements would provide an immediate increase in manpower at the critical stages of an incident.

- Demand management and revenue enhancement opportunities should be explored, such as enhanced fire prevention education, public outreach to avoid unnecessary calls, imposition of or increase in fees to cover the cost of providing service including false alarm fees, development plan review fees, development impact fees, land dedications for fire station sites and fire infrastructure construction, 911 fees, EMS subscription fees, accident cleanup cost recovery fees, arson cost recovery fees, fire inspection fees, weed abatement fees, and other fees to cover the actual cost of the service provided.
- Additional demand management strategies for EMS calls include increased insurance co-payment, patient education, and the availability of alternative non-emergency transportation.
- Combined fire/EMS dispatch would provide higher level of service and better utilization of personnel.
- Combined training would provide higher level of training and better utilization of personnel.
- Combined facility maintenance would provide better service at lower cost.
- Streamline the collective bargaining process, saving the cost of legal fees on four contracts along with annual contract maintenance costs. Shared radio services provide better communications at critical times.
- Benchmarks of service quality should be expanded beyond response time. Indicators such as cost per unit of service, training practices, budgeting practices, and community satisfaction should be assessed.

## Section 1: Introduction

This exploratory study is meant to assist the municipalities in determining future direction and possible options for consideration with regard to fire safety service cooperation and consolidation. The goal of the study is broad in scope, aiming to initiate further tactical approaches. Assumptions supporting the study include the following:

- Fire safety service quality to the community is to be improved or held constant. The types of fire safety services include fire and life safety, basic life support, advanced life support, hazardous materials team response, confined space rescue, trench rescue, high angle team response, water rescue response, fire prevention, arson investigation, and public education.
- Resource availability will be fluid throughout the five municipalities.
- National Fire Protection Agency standards should be considered as the operational ideals.

This study combines qualitative and quantitative analysis in order to better understand the complex issues of fire safety service delivery. Decision making, planning, and operations are affected by multiple stakeholders: political entities, community residents, business owners and employees, health care providers, and fire safety forces have critical stakes in municipal fire protection. These multiple stakeholders' viewpoints are represented in the study through the comments made by the Advisory Team. Members of the Advisory Team are found on p. 4-5 and in Appendix A. Case analysis, scenario development, and modeling will be used to examine the current issues. Historical patterns will be considered in the context of impact on future direction.

Qualitative data was collected through an initial Advisory Team meeting and municipal focus group interviews conducted during the first two weeks of June 2005. The initial Advisory Team meeting provided a broad overview of the entire study and introduced some of the barriers to the process and to regionalization that were perceived by the Team. Table 1 provides a summary of the perceived regionalization barriers.

**Table 1 Barriers to Regionalization**

<b>Regionalization Barriers</b>
Location of stations
Duplication of administration
Collective bargaining agreements
Municipal building codes
Radio compatibility
Standard operating procedures
Community 'ownership' perceptions

Despite these expressed barriers, the benefits of regionalization were identified by the Advisory Team. These benefits include:

- Improvement of Insurance Services Office (ISO) rating through better utilization of resources
- Delivery of quality community service
- Increase in firefighter training
- Long-term equipment investment planning
- Improved fire safety service dispatch
- Operational and investment savings.

Municipal focus group interviews were conducted at each of the sites with the respective fire chief and typically one or more additional firefighters. In addition to focus groups, each municipality provided operational data for comparison. Municipal characteristics, operational budgets, equipment valuation, annual reports, collective bargaining agreements, and ISO ratings were compared. Quantitative data was collected from the State of Ohio Fire Marshall's Office. With the help of Brook Park Assistant Chief Craig Bittner, data fields used in reporting all fire and emergency medical service runs were identified. Data field were then requested from the State Fire Marshall's office.

## Section 2 Overview of the five municipalities

The concept of regionalization first emerged during the 1930s as municipalities grew, was re-examined in the 1960s, and again in the 1990s as cities matured in terms of economic growth and as population stabilized (Lyons & Scheb, 2003). The municipalities of Berea, Brook Park, Middleburg Heights, Parma, and Parma Heights have experienced relatively similar development patterns beginning with initial settlement in the early 1800s, followed by incorporation in the first two decades of 1900. Table 2 shows the settlement and incorporation years for the five municipalities. Industrialization created strong job markets and thus fueled population growth in all five municipalities. Peak population occurred in the 1960s. According to the United States Census Bureau, population for all five municipalities has declined from 2000 to 2004, except for Middleburg Heights which has remained stable (U.S. Census, 2005). Table 3 shows the population percent change from 1990 to 2000 as compared to 2000-2004. Based on this decline, revenue trends for all municipalities have been commensurate. The ability of municipalities to maintain quality fire protection service has been challenged.

**Table 2: Municipal Settlement and Incorporation Years**

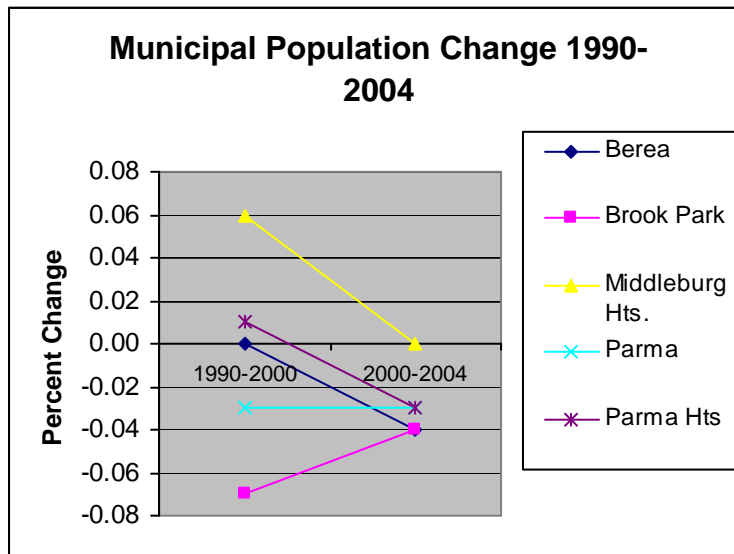
City	Year Settled	Year Incorporated
<b>Berea</b>	1809	1930
<b>Brook Park</b>	1914	1914
<b>Middleburg Heights</b>	1809	1920* village; 1961** city
<b>Parma</b>	1816	1924
<b>Parma Heights</b>	1818	1912

(U.S. Census, 2005)

### Growth and Population Projection

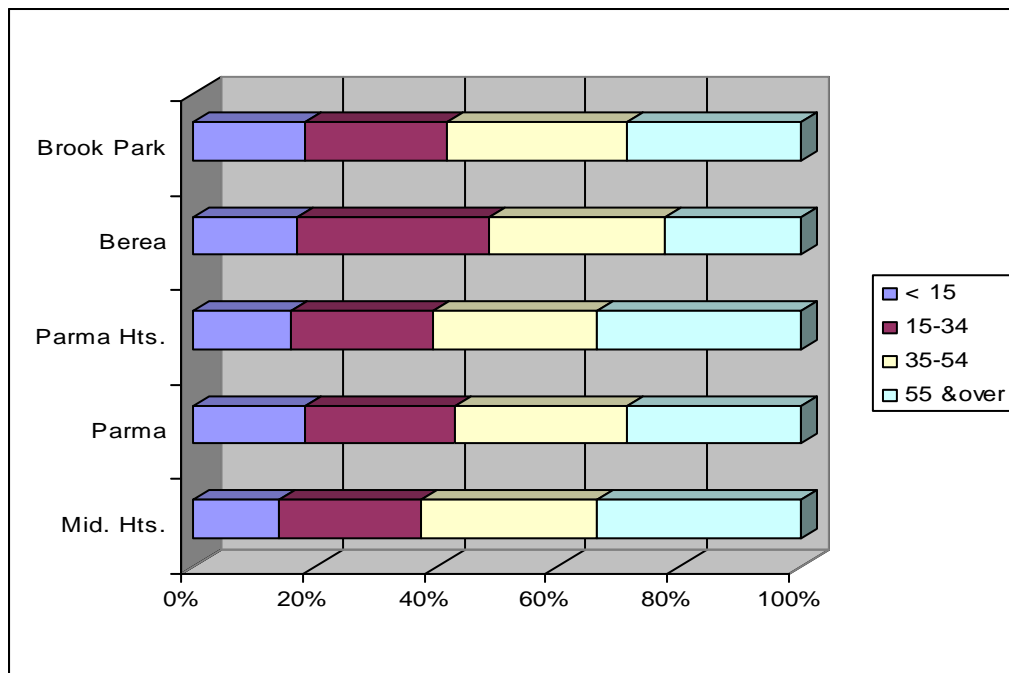
According to the U.S. Census, the State of Ohio's population will stabilize over the coming twenty years. The state population is projected to grow 1.4% by 2015 and will grow by another 1.3% by 2025 (U.S. Census, 2005); however, the five cities have experienced a decline in population. This trend is expected to continue based on the age distribution of the municipalities. Middleburg Heights and Parma Heights have the largest concentration of population that will be over the age of 55 with approximately 34% of both cities' populations in this age group. Berea has a younger population with 32% of its population between 15 and 34 years of age and 23% over the age of 55 years of age. Berea's population is affected by the existence of Baldwin-Wallace College that attracts younger degree-seeking persons. Brook Park and Parma both have elderly populations over the age of 55 years of age that represent approximately 28% of population. Thus, the combination of overall population decline and shifting weight of older residents will create an increased need for emergency services.

**Table 3: Municipal Population Change 1990-2004**



(U.S. Census, 2005)

**Table 4: Population Age Distribution By City**



(U.S. Census, 2005)

The five communities, while being geographically contiguous, are different in terms of age of rental structure and population density. All five municipalities report a median owner-occupied structure's construction date between 1956 and 1968.

Middleburg Heights has seen its population stabilize over the past four years; this is reflected in the slightly newer owner-occupied structure's construction date of 1968. Berea and Parma Heights report a median of 1956. This reflects the post WWII suburban building boom, but also takes into account some of the older, historic structures built in the early decades of the 20<sup>th</sup> century. Businesses located within each municipality are also listed in Table 5. The heavy distribution of retail and service units should be noted.

**Table 5: Municipal Characteristics**

	<b>Berea</b>	<b>Brook Park</b>	<b>Middleburg Hts</b>	<b>Parma</b>	<b>Parma Hts</b>	<b>Total</b>
<b>Pop*</b>	18276	20296	15527	82672	20954	157725
<b>% Total Population</b>	11.59%	12.87%	9.84%	52.42%	13.29%	100%
<b>Density**</b>	3476/sq.mi.	2815/sq.mi.	1925/sq.mi.	4291/sq.mi.	5159/sq.mi.	
<b>Occupied housing units</b>	7173	8193	6705	35126	9823	67020
<b>% Total</b>	10.70%	12.22%	10.00%	52.41%	14.65%	
<b>Median age of owner structures</b>	1956	1962	1968	1965	1956	
<b>Median age of rental structures</b>	1964	1966	1969	1983	1970	
<b>Retail units</b>	56	50	103	342	69	620
<b>Services units</b>	124	101	199	358	117	899
<b>Admin/Ed units</b>	25	25	50	113	18	231
<b>Hospitality units</b>	41	55	77	175	41	389
<b>Employees</b>	2398	4459	8192	10814	2398	28261

\* (2005, U.S. Census Bureau)

\*\* (2005, Wikipedia.org)

### Section 3

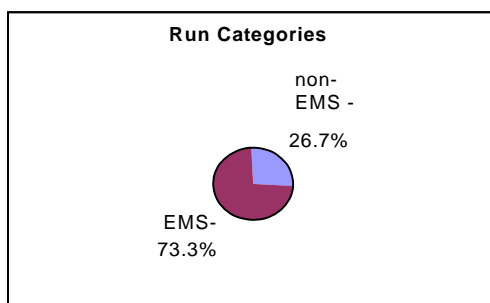
#### Fire and pre-hospital emergency services (EMS) provided by the cities.

The five municipalities cover approximately 24 square miles with Parma being the largest, covering approximately 12 square miles. The area is served by eleven fire stations operated by five independent fire departments. Berea, Middleburg Heights and Parma Heights operate one fire station each. Brook Park operates three stations, although only one station is fully manned, with the other two stations being manned with first response teams. Parma operates five fire stations.

There appears to be good cooperation among cities that have contiguous boundaries on a mutual aid basis. Where there are substantial physical structures or geography that require automatic aid agreements, they are in place. Middleburg Heights and Brook Park share automatic aid responsibility for Interstate 71. Parma operates relatively more independently with little mutual aid required.

In 2004, the fire departments received a combined 20,666 emergency calls, with EMS calls making up 73% of all calls. Table 6 shows the percentage of EMS and non-EMS runs for all five cities. Non-EMS runs include fires, car extrications, rescues, chemical spills, other specialized calls and false alarms. The number and complexity of EMS calls is increasing. Based on population projections, the number of runs will increase by at least 9% in the next ten years and another 8% between 2020 and 2025. Improvements in emergency medical technology and increased lifespans due to general health improvements may expand this number further. The aging population will continue to stretch the capacity of the five fire departments. Increasingly, the departments are being requested to accommodate special patients. One example is bariatric patients who need both additional manpower and specialized transport equipment to be moved to a medical facility.

**Table 6 EMS and non-EMS Runs**



#### Service Delivery

The responsiveness of service delivery can be measured using run time. In 2004, for all five municipalities, 74% of all runs were completed in five minutes or less; 84.8% of runs were completed in six minutes or less. The response times are calculated in slightly different ways from from city to city, but are essentially

calculated between the time a call is received at the dispatch center, and the time at which first responders arrive at the scene. Guidelines established by the National Fire Protection Association (NFPA) recommend fire response times in six minutes at least 90 percent of the time, with response time measured from the 911 call time to the arrival time of the first-responder at the scene. For medical response times, NFPA recommends a six-minute response time for basic life-support and 10 minutes for advanced life support. The combined performance of the cities is close to NFPA guidelines, but slightly short of the recommended six-minute guideline for 90% of all runs. Table 7 shows the distribution of run times for the five cities combined.

**Table 7 Response Time Distribution for all Municipalities**



Staffing is a critical issue for all fire departments. NFPA guidelines promote staffing levels to meet response time guidelines, taking into account the hazard to human life, firefighter safety, potential property loss, and the most effective firefighting approaches. It is recommended that each engine, ladder, or truck be staffed by four on-duty firefighters, and that at least four firefighters (two in, two out), each with protective gear, be on the scene to begin fire containment inside a structure. For structure fires, the NFPA recommends that the response team include 14 personnel with a commander, water supply line operators, a two-person search and rescue team, a two person ventilation team, a two-person initial rapid intervention crew, and two support individuals (Burr Consulting, 2004).

These guidelines are routinely not met in the five cities. Typical firefighter crew size is five for Berea, Brook Park, and Parma [for each firehouse]. Middleburg Heights and Parma Heights typically staff each station with six firefighters. The latter two departments operate only one firehouse. This staffing level provides an adequate first-responder unit with mutual aid being used to provide back-up during large incidents.

Another independent body that provides measurement of fire safety service is the Insurance Standards Organization (ISO). Brook Park and Parma are rated 4, the other cities are rated 5. This rating is highly dependent upon staffing and equipment utilization. Ratings based on personnel and training are significantly affected by low staffing levels. The smaller municipalities, Middleburg Heights and Parma Heights, were rated lower based on ladder and engine company staffing abilities.

Dispatch is another area of concern highlighted by the ISO comparison and supported by data collected in the focus group interviews. Dispatch for all five cities is currently being ensured through a joint police and fire dispatch system with the police unit providing all personnel and funding. Combined police-and-fire dispatch does not provide the specialized training nor does it adequately support fire service personnel in the case of a major conflagration. In addition, EMS calls are increasingly complex: having a trained emergency medical dispatch would provide over-the-phone instructions to the EMS team in route to the medical facility and to the person who made the emergency call.

**Table 8 ISO Ratings**

ISO	Berea	Brook Park	Middleburg Hts	Parma	Parma Hts	Total
<b>Date</b>	<b>2004</b>	<b>1999</b>	<b>2004</b>	<b>2004</b>	<b>2004</b>	<b>Target Score</b>
<b>Alarms</b>	7.09	9.9	7.92	5.7	5.51	10
<b>Telephone Operators</b>	1.88	1.9	1.88	2	1.88	2
<b>Dispatch</b>	2.01	3	2.94	1.95	0.93	3
<b>Protection Class</b>	3.2	5	3.1	1.75	2.7	5
<b>Class</b>	5	4	5	4	5	
<b>Fire Dept</b>	23.75	29.18	20.79	30.82	22.56	50+
<b>Engine Co</b>	9.32	8.95	1.67	9.06	4.71	10
<b>Reserve P</b>	0.61	0.67	0.33	0.89	0.48	1
<b>Pump Cap</b>	5	5		5	5	5
<b>Ladder</b>	1.8	2.95	1.48	2.57	1.7	5
<b>Res Lad</b>	0.12	0.12	0.69	0.35	0.12	1
<b>Distribut</b>	2.79	2.87	2.07	1.83	1.61	4
<b>Personnel</b>	2.76	5.2	5.41	8.33	5.43	15+
<b>Train</b>	1.35	3.42	4.14	2.79	3.51	9
<b>Water</b>	28.48	32.22	33.57	32.83	39	40
<b>Wsystem</b>	24.52	28.46	38.12	28.58	34.9	35
<b>Hydrants</b>	1.88	1.96	2.55	1.88	2	2
<b>Inspect</b>	2.08	1.8	2.55	2.37	2.1	3
<b>Divergence</b>	-4.74	-4.44	-10.74	-4.09	-10.48	
<b>Total</b>	54.58	66.86	56.09	65.29	56.59	

At a minimum, some short-term actions could have a significant effect on each municipality's ISO rating, bringing all down to the rating of three, with the possibility of lowering Parma's rating to two. Table 9 shows how an improved dispatch system and shared resources are likely to contribute to improvements in ISO rating. These calculations assume that the divergence rating would not change. This estimate may be somewhat conservative, in which case ISO ratings would be further improved.

**Table 9 Change in ISO Rating**

	Berea	Brook Park	Middle-burg Hts	Parma	Parma Hts	Target Score	Points Possible
<b>ISO</b>							
<b>Alarms</b>	2.91	0	2.08	4.3	4.49	10	10
<b>Telephone Operators</b>						NC	2
<b>Dispatch</b>	1.8	0	1.9	3.25	2.3	5	5
<b>Fire Dept</b>							
<b>Engine Co</b>	0	0	7.33	0	5.29	9	10
<b>Reserve P</b>	0	0	.3	0	0	1	1
<b>Pump Cap</b>						NC	5
<b>Ladder</b>	3.2	2.05	3.52	2.43	3.3	5	5
<b>Res Lad</b>	.8	.8	.3	.6	.8	1	1
<b>Distribut</b>	1.21	1.13	1.93	2.17	2.39	4	4
<b>Personnel</b>	5.57	3.13	2.92		2.9	8.33	15+
<b>Train</b>	3.65	1.58	.86	2.21	1.49	5	9
<b>Water Wsystem</b>						NC	40
<b>Hydrants</b>						NC	35
<b>Inspect</b>						NC	2
							3
<b>Divergence</b>						NC	
<b>Current Total</b>	54.58	66.86	56.09	65.29	56.59		
<b>Projected Change</b>	19.14	8.69	21.14	14.96	22.96		
<b>Projected Total</b>	73.72	75.55	77.23	80.25	79.55		
<b>Protection Class</b>	3	3	3	2	3		

Examination of the departments' operating budgets for purposes of comparison proved to be difficult in that accounting classification differences makes direct comparison of expenses difficult at best. For purposes of comparison, only direct labor costs were compared. Direct labor costs are defined as salaries and overtime pay. Direct

labor costs account for 88.3% of the combined \$20.7 million dollar expenses reported. Overtime costs are 9.8% of salaries. This number is understated, as Brook Park reported all labor costs together. Table 10 shows the direct labor costs for each municipality.

**Table 10 Direct Labor Costs**

	<b>Berea</b>	<b>Brook Park</b>	<b>Middleburg Heights</b>	<b>Parma</b>	<b>Parma Heights</b>	<b>Total</b>
<b>Salary* w/benefits</b>	\$1,397,027	\$3,290,176	\$2,209,530	\$7,296,773	\$2,434,730	\$16,628,236
<b>OT</b>	\$140,508		\$158,785	\$1,154,097	\$180,000	\$1,633,390
<b>Train</b>	\$41,000		\$10,557	\$267,500	\$7,500	\$326,557
<b>Total</b>	\$1,578,535	\$3,290,176	\$2,378,872	\$8,718,370	\$2,622,230	\$18,588,183
	8.49%	17.70%	12.80%	46.90%	14.11%	

Direct labor costs were also measured on a per-run basis. Table 11 shows this data. Parma reports the lowest per run cost with \$838.94. Brook Park is maintaining three fire stations [because of its unusual city boundaries] and this fact alone would explain the high per-run cost in that municipality.

**Table 11 Per Run Cost**

	<b>Berea</b>	<b>Brook Park</b>	<b>Middleburg Heights</b>	<b>Parma</b>	<b>Parma Heights</b>	<b>Total</b>
<b>Runs</b>						
<b>Fire</b>	209	487	617	3772	439	5524
<b>EMS</b>	1412	2080	1738	7650	2262	15142
<b>Total</b>	1621	2567	2355	11422	2701	20666
<b>Cost</b>						
<b>PR</b>	\$1,014.80	\$1,415.77	\$1,212.75	\$838.94	\$1,100.76	\$1,001.20

**Collective Bargaining Agreement Comparison**

The collective bargaining agreements (CBAs) of the five municipalities were compared. The following is a description of the differences within selected content areas between the CBAs of the five cities.

**Expiration dates**

The expiration dates of the collective bargaining agreements of the five cities in discussion have a variance of at least two years. Brook Park and Parma are currently in negotiations for new contracts, and are operating under expired contracts. Brook Park expects to have a new contract signed by the end of this year, December 31, 2005; it will be a two year contract, ending December 31, 2007. Parma is also in negotiations - once the agreement is signed it should be a three year deal; extending to 2008. Berea and

Middleburg Heights are both currently working under a contract that expires December 31, 2006. Parma Heights is operating under a CBA that expires December 31, 2005.

#### Hours of work

Berea is the only city with a different number of hours worked per week. Its CBA states a 51.7 hour work week whereas all the remaining four cities have a 48 hour work week.

#### Overtime

All five cities declare that the rate at which a firefighter will be compensated for overtime is 1.5 times their normal hourly rate. Berea and Middleburg Heights firefighters receive a minimum of three hours overtime pay; Brook Park and Parma Heights give their firefighters a minimum of two hours of overtime pay; Parma states that the firefighters get to choose whether they want their extra time worked to be compensated as overtime or as compensatory time.

#### Salaries

We compared the salaries of the five cities at the point of hiring, after two years of employment and after three years of employment. All salaries compared are based on firefighters with paramedic certification. As far as starting salaries are concerned, Berea pays \$45,407.08 per year; Brook Park pays \$48,239.62 per year; Middleburg Heights pays \$43,638.40 per year; Parma pays \$40,687.39 per year; and Parma Heights pays \$43,287.17 per year. This is a range of \$7552.23.

The salaries of paramedic certified firefighters in their second year of employment are compared next: Brook Park pays \$53,690.83 per year; Middleburg Heights pays \$48,609.60 per year; Parma pays \$43,410.37 per year and Parma Heights pays \$47,194.52 per year (Berea's two-year salary was not available). The range in these salaries is \$10,280.46.

The last comparable data to be examined were the salaries of firefighters during their third year of employment: Berea pays \$51,133.37 per year; Brook Park pays \$57,574.17 per year; Middleburg Heights pays \$53,560.00 per year; Parma pays \$47,789.47 per year and Parma Heights pays 54,099.67 per year. The range in the third year salaries is \$9784.70.

#### Professional wage supplement

Middleburg Heights is the only city that did not include a professional wage supplement in its CBA. Berea pays a professional wage supplement of five percent (5%) and Brook Park pays four percent (4%). Parma pays an additional \$100 to \$500 per year depending on the years of service of the firefighter; Parma Heights pays each firefighter a flat \$200 per year as a professional wage supplement.

#### Sick leave

Parma and Parma Heights grant each firefighter 4.6 hours of sick leave for every eighty (80) hours worked. The other four cities carry out sick leave distribution in different ways. In Berea, firefighters earn one twenty-four hour shift each month of

employment; Brook Park firefighters earn thirteen hours of sick leave each month; and Middleburg Heights firefighters earn 1.25 days per month.

#### Vacation leave

Each of the cities determines vacation leave based upon years of service. The following will describe the minimum and maximum number of weeks or shifts that the firefighters can possibly earn. Berea has a minimum of two weeks of vacation and a maximum of six weeks; Brook Park is between two and five weeks; Middleburg Heights has a minimum of four shifts of vacation and a maximum of thirteen shifts; Parma starts firefighters out with five shifts of vacation and they can earn up to fifteen (15) shifts; and Parma Heights' CBA calls for a minimum of five shifts and a maximum of fourteen shifts.

#### Premium pay

Only three cities include premium pay in their CBAs. Parma and Parma Heights have not included premium pay; therefore they will not be included in the comparisons of premium pay. Berea's policy for premium pay is that the firefighters will receive twenty-four (24) hours of pay plus an additional \$200. Brook Park treats premium pay the same way it does overtime pay (1.5 times regular pay for a minimum of two hours). Middleburg Heights calculates premium pay over a three year period with firefighters receiving \$350.00, \$600.00 and \$850.00 a year for three consecutive years.

#### Uniform allowance

All cities have a set amount per year for uniform allowances.

#### Paramedic training

All cities, except for Brook Park, declare that a firefighter must maintain at least a paramedic level of certification to be employed.

While differences in CBAs exist, the substantive issues of salary, overtime and working conditions have been somewhat normed to reflect the regional labor market condition and prevailing economy. A full comparison of all CBAs is found in Appendix B.

## Summary of Service Delivery

Improvement of service delivery effectiveness and efficiency can be sought through several means: restructuring the current pattern of operations, instituting cost avoidance strategies, pursuing shared resources, and developing appropriate process and management evaluation tools.

### Restructuring the current pattern of operations

Having examined staffing, run data, and equipment, the following observations were made:

- The number of first response units should remain unchanged in order to adequately serve all residents.
- The allocation of pumper and ladder units could be re-examined with the idea that ladders could provide back-up response time of less than 10 minutes to most areas.
- The creation of a "shared" group of firefighters, who would not be assigned to a particular firehouse would also add flexibility and help better serve the community, should be considered.

Service delivery can be envisioned to be multi-tiered. The first level of service would be first-response. A first response team would consist of a minimum of five firefighters located to respond within the 6 minute NFPA guideline. Based on the current response times, current stations are located appropriately within the five-city region; however, staffing is inadequate and cannot staff the available equipment. Combining operations will enable full staffing of first response team units at all local stations. The second tier of service would be back-up or ladder brigade teams. Ladder brigades could be consolidated into four or five locations. The locations would provide access to reach structural fires within the NFPA guidelines of ten minutes for advanced life support. This would enable the region to reduce overall equipment needed and, at the same time, provide better service to the community and safer working conditions for the firefighters. Currently, there are 18 engines in operation in the area. It is highly likely that with this consolidation, the total equipment count could be reduced by 4 or 5 pieces of equipment. This would also allow the more modern units to remain in operation.

Flexible staffing would provide opportunities to conduct training and other fire safety related activities within regular salary budgets. Theoretically, the region could actually hire more full time firefighters to further enhance staffing flexibility.

### Cost avoidance opportunities

In light of the current demographics of an aging population and increasing demand on EMS the following strategies may be considered:

- Demand management strategies would include patient education and the creation of alternative transportation strategies for non-emergency use of the EMS services.

- Revenue enhancement opportunities include imposition of or increase in fees to cover the cost of providing service including false alarm fees, EMS subscription fees, insurance co-payment recoveries, accident cleanup cost recovery fees, arson cost recovery fees, fire inspection fees, weed abatement fees, and other fees to cover the actual cost of the service provided.
- Demand management strategies such as false alarm fees, 911 call response fees, enhanced fire prevention education, and public outreach can be used to control unnecessary service calls, encourage citizens' compliance and discourage abuse.
- Streamline the collective bargaining process, saving the cost of legal fees on four contracts along with annual contract maintenance costs.

EMS calls are expected to increase by 9% between 2005 and 2015. This represents a significant additional pressure on services. Based on the demographics of the population, the region should consider strategies to manage EMS demand. These may include fee imposition and the establishment of an alternative non-emergency transportation system for the older population of the region. Significant public education would be required in order to shift the reliance of some citizens on the EMS “you call-we haul” model of operations (Korte, 2004). Involvement of other non-profit agencies may be effective in planning this shift.

Unions in four of the five municipalities Brook Park, Middleburg Heights, Parma, and Parma Heights combine collective bargaining activities. While each contract is negotiated independently, the resources of the Northeast Ohio Firefighter Association are used to normalize the process. Negotiation and administration of each of these CBAs is costly. Consolidating the process of negotiation and administration would provide the union with a more substantial membership block and would provide administration with economies of scale.

#### Opportunities for shared resources

Combining the resources would enable the region to provide a devoted fire dispatch center and additional support functions that are now difficult to finance individually. These ideas include:

- A combined fire dispatch center that would provide higher level of patient care and devoted fire/EMS dispatch.
- A combined training delivery and facility.
- A combined maintenance facility.
- Shared radio system.

Combining the five dispatch functions would provide sufficient demand to justify a devoted fire/EMS facility. Space within an existing facility appears to be available. Specifically, once service is tiered into first responder and advance life support teams, the possibility for housing the dispatch operations becomes even more feasible. One very plausible option for staffing the dispatch center would be to staff the center with a rotated crew of fire fighters. Fire fighters can be trained as Emergency Medical Dispatchers (EMDs) in order to increase the expertise in pre-hospital treatment. Those firefighters on

light duty, those with other administrative roles, or those that have specialized skills in dispatch would provide the skilled labor needed.

A centralized dispatch center would entail a Global Positioning Satellite equipment monitoring system and common radio communications. Automatic aid would cover all municipalities which would decrease response time further.

The flexibility of staffing a total of 213 firefighters instead of the limited independent crews that currently exist also provides an opportunity for increased specialization in training and duties. Combined training would not only be cost effective but would increase the information flow and communications channels among all departments. Firefighters would move through simulations together, being better prepared to provide integrated, well coordinated responses during an emergency.

This combined staffing model would also capitalize on available in-house talent. Firefighters with specialized skills in maintenance, radio expertise, HAZMAT, high angle rescue, and other skills would be centralized for all departments to utilize. Centralized maintenance would allow economies of scale in purchasing parts, equipment, and supplies.

#### Evaluation of management efficiencies

It is very difficult to assess managerial efficiencies when data is diverse in nature. Common definitions of costs, expenses, budgets would be a first step in rationalizing decision-making among the five municipalities. Measurement of both inputs to service delivery and the service output is critical. Benchmarks of service quality should be expanded beyond response time. Indicators such as cost per unit of service, training practices, budgeting practices, and community satisfaction should be assessed.

## Section 4 Supporting Case Data

This research sought to provide additional models for fire safety service delivery. In comparing other communities with the collection of these five municipalities it was determined that the cities of Dayton, Ohio and Syracuse, New York would be similar in population level and characteristics. All three areas have populations between 150,000 and 160,000 with housing structures numbering around 70,000. The research cities and Syracuse have very similar call volume levels at 20,000 annual fire and EMS calls reported.

However, this is where the similarities cease. The research cities' group has a lower number of firefighters (significantly lower than Syracuse) and a higher equipment count. This supports the contention that equipment in the research area is not being utilized well. Also supported is the finding that staffing levels are low. Table 12 shows this comparison.

**Table 12 Comparison of Research Cities, Dayton, and Syracuse**

Comparison	Research Cities	Dayton	Syracuse
Population	163,044	166,179	147,306
Housing	67,043	77,321	68,192
Number of Incidents	20666	30,000*	20000**
Full-Time FF	216	223*	390**
Number of engines	18	13	10**
Number of ladders	5	6	6**
Number of Stations	11	14	11**

\*estimate from [www.cityofdayton.org](http://www.cityofdayton.org)      \*\*[www.syracuse.ny.us/deptFire.asp](http://www.syracuse.ny.us/deptFire.asp)

Similar experiences within the state of Ohio can be found in Stark County. Stark County recently structured a joint fire dispatch center that fields 10,000 calls annually. The center is reporting a decrease in response time and annual savings. One of the departments cited savings of \$80,000 – \$100,000 per year. This center operates with eight full-time dispatchers and 7 part-time dispatchers (Davis, 2005). Butler Township near Dayton reported savings of \$90,000 annually, also from a joint dispatch operation (Mizell, 1992).

In 1983, Dayton and Montgomery Counties merged county jail systems. While not an example of fire service regionalization, the process and outcome of this governmental merger can provide insights. The merger took over nine years of planning. The integration of resources and operations was complex and required the development of informed consensual decision making. The merged facility resulted in physical plant improvements that would have been impossible for the individual counties to fund. Operationally, the combined facility is saving \$300,000 per year. What is not easy to

measure is the increased coordination and communication between the two county police departments. Physical proximity allows for the open exchange of information, practices, and talent. Current administration of the facility feels that the quality of service provided to the communities has been significantly improved by the merger.

Cuyahoga County is possibly one of the most fragmented counties in the nation. The Cleveland Plain Dealer reported that county spends \$ 200 million for 51 municipal fire departments to protect 1.4 million residents. This was found to exceed the national median by 47 fire stations, 42 ladder trucks, and 67 pumpers when compared to similar cities (Stolz, 2004). According to the Plain Dealer article, a ladder truck can adequately serve a ten square mile area. This would support the contention that ladder brigades offer a feasible service delivery option.

## **Section 5**

### **Recommended Future Course of Action**

Moving toward regionalization can be viewed in three phases over a three-year time frame.

- Phase I would be the decision to support a regional fire district.
- Phase II would be the establishment of a Joint Strategic Planning Council, Joint Operational Review Councils, and a Joint Data Management Center.
- Phase III would be an operational roll out of a centralized dispatch, the battalion structure, joint training and maintenance.

#### **Phase I – Decision to Support a Regional Fire District**

Time frame – 6 months

Accomplished by April of 2006

In this phase the municipalities would agree to the premise of regionalization, in the form of a formal vote by City Councils to allow the mayors of the cities to enter into negotiations leading to a Joint Fire District. Additional municipalities may join the process, current cities may opt out. The decision is fairly simple – the cities would agree that regionalization would be productive and positive for service delivery and would agree to move forward in the decision-making process.

#### **Phase II – Establishment of Joint Councils and a Joint Data Management Center.**

Time frame – 1.5 years

Accomplished by January 2008

Joint Councils would need to be structured so that data and planning could be shared across municipalities. Since it is difficult to make decisions on effectiveness of decisions without having a baseline of data to compare result against – to benchmark against best practices, one of the most critical aspects of Joint Council operations will be the establishment of a Data Management Center. Information on operations, staffing, equipment, and supplies would be provided in a standardized format in order to make rational comparisons.

A Joint Council on Strategic Planning would provide oversight for long-term goals of the fire region and operational approaches to achieve those goals. Several Joint Operational Review Councils would be established to review individual municipal decisions on purchases, hiring, training, and equipment standardization, to ensure that the overall strategic direction is being met.

Another Joint Council would focus, with outside legal help, on the creation of a Joint Fire District. This structure could be similar to the Joint Power Agreements found in Broward County, Florida, a structure which established a completely separate organization to provide fire safety service on behalf of the participating jurisdictions (King, 1998). This would eliminate the five fragmented fire departments, formalize intergovernmental relations and accountability, and establish procedures for all activities.

Phase III – Operational roll out

Time frame - January 2008 - ongoing

The structure created in Phase II would be formally approved by a vote of the City Councils of the municipalities involved in January 2008.

The integration of resources, staffing, equipment, and standard operating procedures would be accomplished during this phase. The creation of a centralized dispatch would take place. A battalion structure would be implemented: while it can be envisioned that the number of fire chief positions would be reduced, the battalion structure allow a more optimum utilization of the talents currently present in the five municipal fire departments.

Centralized purchasing, training and maintenance would occur, leading to expected savings and a better utilization of resources. It is expected that these measures would increase "up-time" of equipment and encourage better coordination of human resources.

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## Appendix A

Guidance for the project was provided by the Advisory Council which consisted of:

- David Akers, President, Regional Purchasing Limited
- Jim Asterino, President, Northern Ohio Firefighters
- Bernard Benedict, Chief, Middleburg Heights Fire Department
- Pam Falasco, Vice President Surgical, Emergency and Rehabilitative Services, Parma Community General Hospital
- Jack Kafer, Executive Director, Building Owners and Managers Association of Berea
- Cyril Kleem, Executive Director, Berea Community Development Director
- Patricia A. Pell, Executive Officer, Parma Chamber of Commerce
- Mark Ramach, Lieutenant, Brook Park Fire Department
- Dennis Ryan, Assistant Fire Chief, Parma
- Dr. James Rybak, Director of Emergency Medical Services, Southwest General Health Center
- Dan Sondles, Chief Legislative Officer, Westfield Group
- Ken Taylor, President, CEO, Southwest General Health Center
- James Walters, Firefighter, Brook Park Fire Department
- Marty Zanotti, Mayor, Parma Heights

## Appendix B

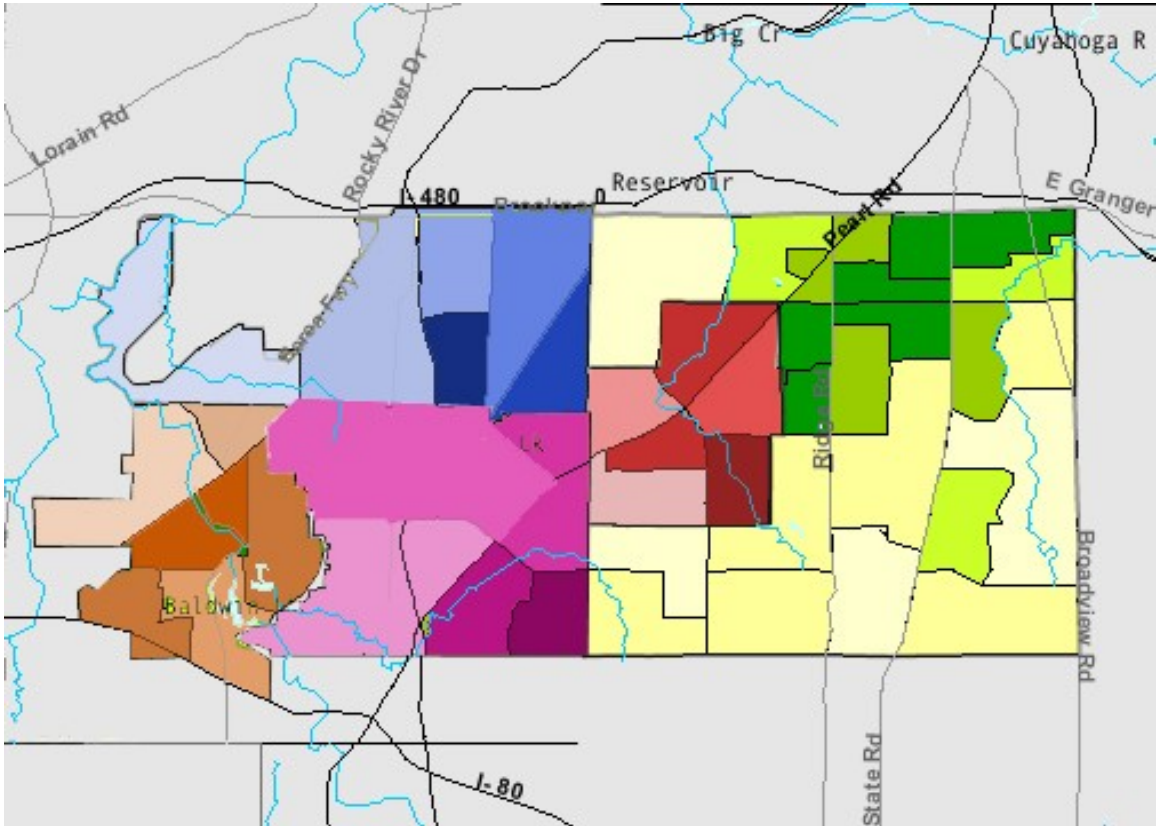
### Comparison of the Collective Bargaining Agreements of Berea, Brook Park, Middleburg Heights, Parma Heights, and Dayton, Ohio

	<b>Berea</b>	<b>Brook Park</b>	<b>Middleburg Heights</b>
Expiration Dates	December 31, 2006	December 31, 2004	December 31, 2006
Paramedic Training	certified at time of hire	n/a	must maintain paramedic certification
Hours of Work	51.7 hrs/week (3 shifts)	48 hrs/week	48 hrs/week
Overtime	1.5 times - min 3 hours	1.5 times - min 2 hours	1.5 times - min 3 hours
Salary: Starting year	\$45,407.08/yr	\$48,239.62/yr	\$43,638.40/yr
Salary: Second year	n/a	\$53,690.83/yr	\$48,609.60/yr
Salary: Third year	\$51,133.37/yr	\$57,574.17/yr	\$53,560.00/yr
Professional Wage Supplement	5%	4%	n/a
Sick Leave	earn 1 - 24 hr shift/month 2-6 weeks depending on yrs of service	earn 13 hrs/month 2-5 weeks depending on yrs of service	earn 1.25 days/month 4-13 shifts depending on yrs of service
Vacation Leave			\$350, \$600, \$850 each yr for 3 yrs
Premium Pay	24 hrs of pay plus \$200 \$800/year after initial uniform	same as overtime	
Uniform Allowance	\$100 after 5 yrs, each add'l yr = # yrs of service - 3(85)	\$750/year	\$850/year
Longevity Compensation		n/a	\$375 after 5 yrs, add \$75 each add'l yr
Insurance	life-time max = \$1,000,000	life insurance \$25,000	life insurance \$30,000
	<b>Parma</b>	<b>Parma Heights</b>	<b>Dayton</b>
Expiration Dates	March 31, 2005 must maintain paramedic/EMT-B level of certification	December 31, 2005	October 31, 2007
Paramedic Training		must maintain paramedic certification	n/a
Hours of Work	48 hrs/week 1.5 times (get to choose btw. overtime and compensatory time)	48 hrs/week	48 hrs/week
Overtime		1.5 times- min 2 hours	1.5 times
Salary: Starting year	\$40,687.39/yr	\$43,287.17/yr	n/a
Salary: Second year	\$43,410.37/yr	\$47,194.52/yr	n/a
Salary: Third year	\$47,789.47/yr	\$54,099.67/yr	n/a
Professional Wage Supplement	extra \$100-\$500/ yr earn 4.6 hrs for every 80 hrs worked	extra \$200/year earn 4.6 hrs for every 80 hrs worked	n/a
Sick Leave	5-15 shifts depending on yrs of service	5-14 shifts depending on yrs of service	earn 1.25 credits/month 2-5 weeks depending on yrs of service
Vacation Leave			
Premium Pay	n/a \$850/yr after 2 yrs employment	n/a	n/a
Uniform Allowance		\$625/year \$20.83-\$125/month depending on yrs of service	\$820/year
Longevity Compensation	\$300-\$1,800 depending on yrs of service	medical up to \$2,500,000 (life = \$10,000)	.5% - 2% depending on yrs of service
Insurance	life insurance \$25,000		life insurance up to \$40,000

\*all data was obtained from the collective bargaining agreements of the six cities in discussion

## Appendix C

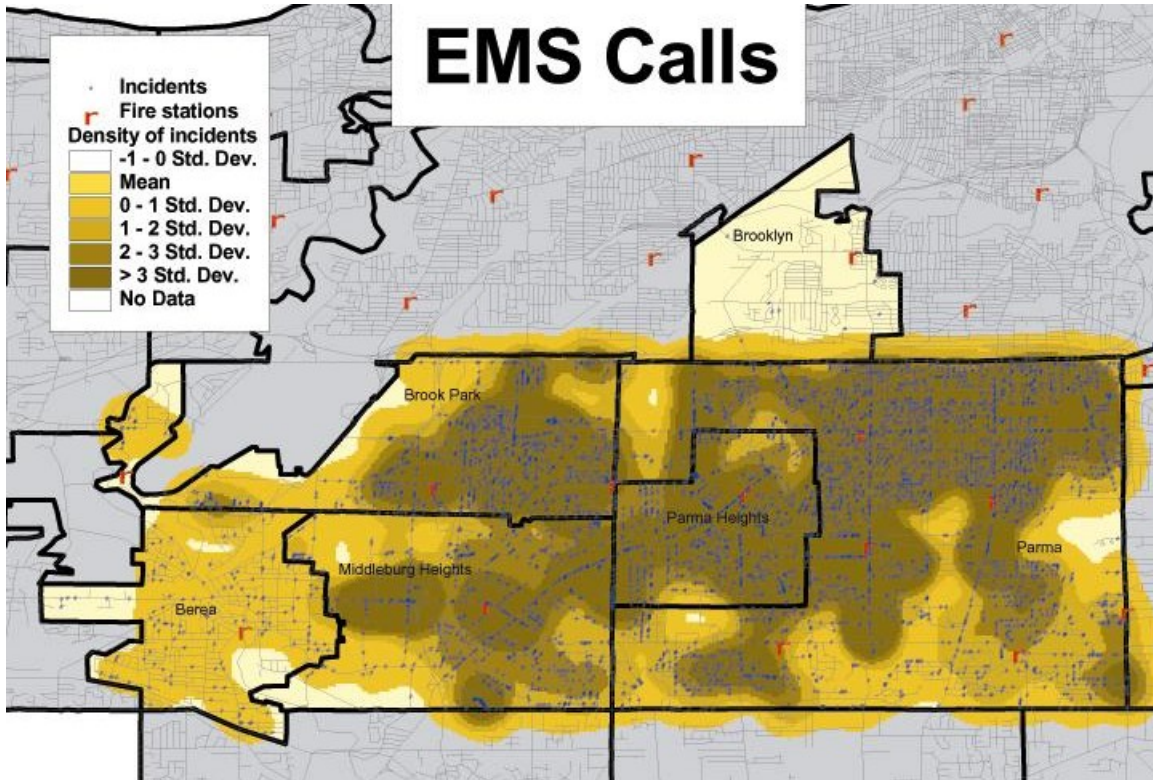
### Population Density Map of the Five Municipalities



(U.S. Census, 2005)

## Appendix D

### Density map of EMS and fire calls



(State of Ohio Fire Marshall Office, 2005;  
Center for Community Solutions, 2005)

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