Ohio Local Government Innovation Fund

Collaborative Measures → Success Measures → Significance Measures → Financial Measures

Round 5: Application Form

Step One: Fill out this Application Form in its entirety.

Step Two: Fill out the online submission form and submit your application materials. All supplemental application materials should be combined into one file for submission.

LGIF: Applicant Profile

Lead Agency	Westshore Council of Governments
Project Name	Westshore Regional Fire District Phase Two Feasibility Study
Type of Request	Grant
Request Amount	$100,000.00
JobsOhio Region	Northeast
Number of Collaborative Partners (including lead agency)	4
Project Approach	Merger
Project Type	Public Safety

Ohio Development Services Agency

Website: http://development.ohio.gov/cs/cs_localgovfund.htm

E-mail: LGIF@development.ohio.gov

Phone: 614 | 995 2292

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Pha	Type of Request	Grant

Instructions
• Make sure to answer each question appropriately in the space provided, not exceeding the space allowed by the answer box.
• Examples of completed applications are available on the LGIF website, found here: http://development.ohio.gov/cs/cs_localgovfund.htm

Section 1

Contacts

Lead Agency		
Mailing Address:	Name: Westshore Council of Governments	
	Street Address: 350 Dover Center Road	
	City: Bay Village	
	Zip: 44140	
In what county is the lead agency located? Cuyahoga		
Ohio House District: 16	Ohio Senate District: 24	

Project Contact		
Please provide information about the individual who should be contacted regarding this application.		
Mailing Address:	Name: Deborah Sutherland	Title: Mayor of Bay Village
	Street Address: 350 Dover Center Road	
	City: Bay Village	
	Zip: 44140	
Email Address: dsutherland@cityofbayvillage.com		Phone Number: (440) 899-3415

Fiscal Agency:		
Please provide information for the entity and individual serving as the fiscal agent for the project.		
Mailing Address:	Fiscal Agency: Westshore Council of Governments	
	Fiscal Officer: Steven Presley	Title: Fiscal Officer
	Street Address: 350 Dover Center Road	
	City: Bay Village	
	Zip: 44140	

Population		
Does the applicant (or collaborative partner) represent a city, township, or village with a population of less than 20,000 residents?	☑ Yes	☐ No
	List Entity	
Does the applicant (or collaborative partner) represent a county with a population of less than 235,000 residents?	☐ Yes	☑ No
	List Entity	

Single Applicant		
Is your organization applying as a single entity?	☐ Yes	☑ No

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Pha	Type of Request	Grant

Collaborative Partners		
Does the proposal include collaborative partners?	✔ Yes	☐ No

Applicants applying with collaborative partners are required to show proof of the partnership with a signed partnership agreement and a resolution of support from each of the partner's governing entities. If the collaborative partner does not have a governing entity, a letter of support from the partnering organization is sufficient. These documents must be received by the end of the cure period in order for each entity to count as a collaborative partner for the purposes of this application.

Nature of the Partnership

As agreed upon in the signed partnership agreement, please identify the nature of the partnership with an explanation of how the lead agency and collaborative partners will work toegether on the proposed project.

As the 1971 Agreement states, the municipal corporations of Bay Village, Rocky River, Westlake, Fairview Park, North Olmsted, and Lakewood agreed to establish a regional council of governments pursuant to Chapter 167 of the ORC. The purpose of the Westshore Council of Governments is "to foster cooperation between municipalities in all areas of municipal service. This shall include but shall not be limited to the effective exchange of information, pooling of manpower and resources for the efficient solutions of specific problems dealing with reciprocal services, mutual aid, and parallel action, and the exchange of ideas relating to area wide interest."

The participating cities have been working on the Westshore Fire District Feasibility Project for 2 years and have an effective governance structure in place to move into the next phase of the project. The governance structure consists of the 4 Mayors, 4 Fire Chiefs, firefighters from each community, city council representatives, and various law director and finance directors as needed. Currently, the Mayor of Westlake is the chair of the effort. Meetings are generally scheduled on a monthly basis to discuss issues, concerns, opportunities, and next steps. Decisions are made based on the consensus of the group. Tasks are assigned with monthly progress reports. The governance structure and process for working together are modeled after the successful Westshore Dispatch Center process as well as the general Westshore Council of Governments' operational model. Moreover, the close, long-term working relationships that have been forged between the participating cities over the years ensure a smooth process.

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Pha	Type of Request	Grant

List of Partners
Please use the following space to list each collaborative partner who is participating in the project and is providing BOTH a resolution of support for the Local Government Innovation Fund application and has signed the partnership agreement.

Collaborative Partner # 1	
Mailing Address:	Name: City of Bay Village
	Street Address: 350 Dover Center Road
	City: Bay Village
	Zip: OH

Collaborative Partner # 2	
Mailing Address:	Name: City of Fairview Park
	Street Address: 20777 Lorain Road
	City: Fairview Park
	Zip: 44126

Collaborative Partner # 3	
Mailing Address:	Name: City of Rocky River
	Street Address: 21012 Hilliard Blvd
	City: Rocky River
	Zip: 44116

Collaborative Partner # 4	
Mailing Address:	Name: City of Westlake
	Street Address: 27700 Hilliard Blvd
	City: Westlake
	Zip: 44145

Collaborative Partner # 5	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Collaborative Partner # 6	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Pha	Type of Request	Grant

Collaborative Partner # 7	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Collaborative Partner # 8	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Collaborative Partner # 9	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Collaborative Partner # 10	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Collaborative Partner # 11	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Collaborative Partner # 12	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Collaborative Partner # 13	
Mailing Address:	Name:
	Street Address:
	City:
	Zip:

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Ph	Type of Request	Grant

Project Information

Provide a general description of the project, including a description of the final work product derived from the grant study or loan implementation project. This information may be used for council briefings, program and marketing materials.

The ultimate mission of the four fire departments proposing to merge into the Westshore Fire District is to provide the most effective, most efficient, most professional possible response in serving the needs of our region, state, and nation. It is this mission, in fact, that has motivated fire department and municipal leaders within our region to examine the potential benefits of a greater level of cooperation among our agencies. Some of the principal objectives of this project include:
1) Focus on the citizens. The people whose Fire & EMS needs we serve are our reason for existence. Every effort we make toward a more efficient, comprehensive, responsive fire service begins and ends with the needs of our citizens;
2) Foster and formalize additional collaboration among the Westshore fire departments that currently provide the same services at nearly identical levels, and that also have common interests relative to growth, finance, and capital expansion;
3) The creation of a Fire District that will provide for increased efficiency, improved effectiveness, enhanced services, coordination of regional planning, standardization of programs and methodologies, and an improved ISO rating for the entire District through the consolidation of several Fire and EMS functions. Those functions include standardized training plans and protocols, development of standard operating procedures and deployment standards, joint staffing and apparatus guidelines, development of standard fire inspection, safety, and education standards, establishment of joint/shared specialty response teams, and the determination of the supervisory hierarchy that will best accomplish our goals. Additionally, the development of cross-jurisdictional agreements, standardized funding mechanisms, uniform fees for service, a model labor agreement for the consolidated district will provide the foundation for expansion of the number of participating communities and enhance ease of replication for other jurisdictions across the state.
4) Provide better service at the same cost or the same service at less cost to our residents.

To accomplish these goals, we have determined the need to contract with an experienced Project Manager who, with his knowledge of Fire and EMS operations, can further evaluate the 76 recommendations from ESCI, including full merger, and develop a detailed implementation plan.

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Pha	Type of Request	Grant

Project Information		
Has this project been submitted for consideration in previous LGIF Rounds?	✔ Yes	No
If yes, in which Round(s)? Round 3		
What was the project name? Westshore Regional Fire District Phase Two Feasibility Study		
What entity was the lead applicant? Westshore Council of Governments		

Past Success

Provide a summary of past efforts to implement a project to improve efficiency, implement shared services, coproduction, or a merger (5 points).

The Westshore Council of Governments has a long history of collaborating to increase efficiency by successfully implementing numerous projects and programs. Westshore Central Dispatch opened in 2006 providing more efficient and effective response by merging Fire and EMS dispatch for 5 communities including Bay Village, Westlake, Fairview Park, Rocky River, and crossing county lines to include Lorain County's North Ridgeville. Since the 1971 establishment of the Westshore COG, the communities have consistently built on past successes by jointly sharing regional Special Response Teams --Hazmat, Swat, Bomb Squad, Technical Rescue Teams, and the Westshore Enforcement Bureau (WEB),a regional vice and narcotics division. The Cities of Rocky River, Bay Village, Westlake, and Fairview Park also co-own and operate the Rocky Rocky Waste Water Treatment Facility. Bay and Westlake also co-operate a compost facility.

Applicant demonstrates Past Success ✔ Yes ☐ No

Scalable

Provide a summary of how the applicant's proposal can be scaled for the inclusion of other entities (5 points).

With the Westshore Central Dispatch project as a model, the Westshore Fire District Project is both replicable and scalable. Initially, WestCom involved the four cities of Westlake, Bay, River, and Fairview Park. We worked out a one-time entry fee and re-allocated our cost formula to include a fifth city. We would handle any additions to the Fire District the same way as we did for WestCom building in future capacity.

Applicant demonstrates a Scalable project ✔ Yes ☐ No

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Pha	Type of Request	Grant

Replicable

Provide a summary of how the applicant's proposal can be replicated by other entities. A replicable project should include a component that another entity could use as a tool to implement a similar project (5 points).

As with the WestCom project, we were happy to share information, expertise, and data with other communities exploring the centralization of of dispatch services. One of our unofficial objectives is to provide the model and guidance for other communities to follow our lead. Currently, at least 2 other groups of Northeast Ohio communities are using our Dispatch as their model as they move forward with their own consolidations.

Applicant demonstrates a Replicable project ☑ Yes ☐ No

Probability of Success

Provide a summary of the likelihood of the grant study recommendations being implemented. Applicants requesting an implementation loan should provide a summary of the probability of savings from the loan request (5 points).

Based on the history of collaborations, merged, shared services, and the intergovernmental structure among the Westshore COG cities, the probability is extremely high for the successful implementation of the planning study recommendations. The political will exists to make this project a reality and our communities have been recognized and rewarded as a result of our collaborative leadership. Based on the ESCI study, the communities would save approximately $600,000 annually in operational costs. Additional capital expenditures can also be curtailed. For example, the 4 communities own 7 ladder trucks that cost approximately 1.1 million to replace. According to the study, we only need 4 pieces of apparatus if deployed properly saving $3.3 million in future replacement costs. (ESCI Study, pp 326 -328)

Applicant demonstrates Probability of Success ☑ Yes ☐ No

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Ph	Type of Request	Grant

Performance Audit/Cost Benchmarking

If the project is the result of recommendations from a prior performance audit provided by the Auditor of State under Chapter 117 of the Ohio Revised Code, or is informed by a previous cost benchmarking study, please attach a copy with the supporting documents. In the section below, provide a summary of the performance audit findings or cost bench marking study results (5 points).

In 2008, the six Westshore Communities and North Ridgeville hired consultant Emergency Services Consultants International (ESCI) to study the costs, operations, and performance of the Westshore Fire Departments and provide us with a recommendation on the feasibility of merging into a regional fire entity. ESCI concluded that a merger was feasible, could improve operations, and save the participating communities approximately $600,000 annually based on 2009 data using the 7 original cities.(ESCI, p. 331)

Figure 172: Baseline Cost of Consolidated Operations

Personnel Services	Baseline	Modeled	Difference
Administration	1,995,330	1,678,565	-316,765
Operations	17,420,123	17,408,606	-11,517
Overtime	937,998	909,858	-28,140
Benefits	11,400,934	11,201,285	-199,649
TOTAL	31,754,385	31,198,314	-556,071
Materials & Services	5,480,178	5,440,738	-39,440
Capital Outlay	186,680	186,680	0
TOTAL	$37,421,243	$ 36,825,732	-595,511

Since the study is voluminous, please click on the following link:
http://www.mediafire.com/?qoly15vl2byrn2l

Prior Performance Audit or Cost Benchmarking ☑ Yes ☐ No

Economic Impact

Provide a summary of how the proposal will promote a business environment through a private sector parter (5 points) and/or provide for community attraction (3 points).

One of the major reasons, residents are attracted to the Westshore communities is our reputation for great services and safe communities. Being able to deliver those services in a more strategic, coordinated way with faster response times, better manpower deployment, and cost-contained capital investments through a consolidated fire district would be a powerful driver of community desirability. Additionally, once implemented, those same factors would contribute to better ISO ratings thereby lowering insurance costs to residents and businesses alike. A thorough discussion of ISO ratings is included in the report. (ESCI, pp. 140 - 150) Moreover, a more effective and efficient consolidated Fire Authority enhances business protection and diminishes the need to increase taxes.

Applicant demonstrates Economic Impact ☑ Yes ☐ No

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Ph	Type of Request	Grant

Response to Economic Demand
Provide a summary of how the project responds to substantial changes in economic demand for local or regional government services. The narrative should include a description of the current and future expected servce level needs (5 points).
The consolidation of fire departments is in direct response to the current economic environment. The 4 cities have lost income tax revenues, property tax revenues, State funding in the form of Local Government Fund reductions, the loss of a major employer, (NASA), and, on December 31, 2012, estate tax will be eliminated. Collectively, the 4 cities have lost approximately 9 - 11% of operating revenues while struggling to maintaining current services. Another 3% reduction is anticipated through the elimination of the estate tax. Therefore, the current Fire/EMS model is no longer sustainable with each separate jurisdiction operating Fire Prevention, inspection, training, purchasing, manpower deployment, and capital purchases on its own.
Applicant demonstrates Response to Economic Demand ☑ Yes ☐ No

Section 3 Project Information

Budget Information

General Instructions

• Both the Project Budget and Program Budgets are required to be filled out in this form.

•Consolidate budget information to fit in the form. Additional budget detail may be provided in the budget narrative or in an attachment

Project Budget:

- The Project Budget should detail expenses related to the grant or loan project.
- The Project Budget justification must be explained in the Project Budget Narrative section of the application. This section is also used to explain the reasoning behind any items on the budget that are not self explanatory, and provide additonal detail about project expenses.
- The Project Budget should be for the period that covers the entire project. The look-back period for in-kind contributions is two years. These contributions are considered a part of the total project costs.
- For the Project Budget, indicate which entity and revenue source will be used to fund each expense. This information will be used to help determine eligible project expenses.
- Total Sources must equal Total Uses. Include staff time and other in-kind matches in the Total Uses section of the budget.

Program Budget

- Use the Program Budget to outline the costs associated with the implementation of the program in your community.
- Six (6) years of Program Budgets should be provided. The standard submission should include three years previous budgets (actual), and three years of projections including implementation of the proposed project. A second set of three years of projections (one set including implementation of this program, and one set where no shared services occurred) may be provided in lieu of three years previous if this does not apply to the proposed project.
- Please use the Program Budget Narrative section to explain changes in expenses and revenues, and to defend the budget projections. If the budget requires the combining of costs on the budget template, please explain this in the narrative.

Return on Investment:

- A Return on Investment calculation is required, and should reference cost savings, cost avoidance and/or increased revenues indicated in Program Budget sections of the application. Use the space designated for narrative to justify this calculation, using references when appropriate.

For Loan Applications only:

- Using the space provided, outline a loan repayment structure.
- Attach three years prior financial documents related to the financial health of the lead applicant (balance sheet, income statement and a statement of cash flows).

Lead Applicant	Westshore Council of Gover	Round 5	
Project Name	Westshore Regional Fire Dis	Type of Request	Grant

Project Budget

Use this space to outline all sources of funds and the uses of those funds. Both sections should include all funds related to the project, including in-kind match contributions. Use the project budget narrative on the next page to justify the project budget, and indicate the line items for which the grant will be used.

Sources of Funds

LGIF Request:		$100,000
Cash Match (List Sources Below):		
Source:	Westshore COG reserves	$40,000
Source:		
Source:		
Source:		
In-Kind Match (List Sources Below):		
Source:	Westshore COG	$30,000
Source:		
Source:		
Total Match:		$70,000
Total Sources:		$170,000

Uses of Funds

	Amount	Revenue Source
Consultant Fees:	$140,000	WCOG reserves, LGIF grant
Legal Fees:	$5,000	WCOG In kind
Other: Phone	$1,200	WCOG in kind
Other: Office space	$3,500	WCOG in kind
Other: Office Equipment	$800	WCOG In kind
Other: Vehicle	$7,000	WCOG In kind
Other: Technology	$2,500	WCOG in kind
Other: P/T clerical	$10,000	WCOG in kind
Other:		
Other:		
Total Uses:	$170,000	
Local Match Percentage:	41%	

* Please note that this match percentage will be included in your grant/loan agreement and cannot be changed after awards are made.

Local Match Percentage = (Match Amount/Project Cost) * 100 (10% match required)

☐ 10-39.99% (1 point) ☑ 40-69.99% (3 points) ☐ 70% or greater (5 points)

Section 4

Financial Information

Lead Applicant	Westshore Council of Gover	Round 5	
Project Name	Westshore Regional Fire Dis	Type of Request	Grant

Project Budget Narrative: Use this space to justify any expenses that are not self-explanatory.

The amount of $140,000 for consultant fees will fund the development of specific action steps in order to fully consolidate the 4 Fire/EMS Departments of Bay Village, Rocky River, Fairview Park, and Westlake. The Consultant will work with all 4 cities as the liaison to fully identify existing resources, whether capital or human, departmental functions and provide specific strategies for merger. Those functions include standardized training plans and protocols, development of standard operating procedures and deployment standards, joint staffing and apparatus guidelines, development of standard fire inspection, safety, and education standards, establishment of joint/shared specialty response teams, and the determination of the supervisory hierarchy that will best accomplish our goals. Additionally, $30,000 in equipment expense, is anticipated and will include office space, phone, computer, and a vehicle purchase or lease for the consultant. Additional technology and clerical assistance is also included.

Lead Applicant	Westshore Council of Governmen	Round 5	
Project Name	Westshore Regional Fire District I	Type of Request	Grant

Program Budget

Actual ✔ Projected ___	FY 2010	FY 2011	FY 2012
Expenses	**Total Program Expenses**	**Total Program Expenses**	**Total Program Expenses**
Salary and Benefits	$14,756,736	$14,370,831	$14,817,078
Contract Services			
Occupancy (rent, utilities, maintenance)			
Training & Professional Development			
Insurance			
Travel			
Capital & Equipment Expenses			
Supplies, Printing, Copying & Postage	$314,283	$277,241	$340,387
Evaluation			
Marketing			
Conferences, meetings, etc.			
Administration			
*Other - Repair/Maintenance	$497,816	$426,649	$594,984
*Other -			
*Other -			
TOTAL EXPENSES	$15,568,835	$15,074,721	$15,752,449
	Revenues	**Revenues**	**Revenues**
Contributions, Gifts, Grants, & Earned Revenue			
Local Government: Property Taxes	$9,748,908	$9,610,182	$10,252,233
Local Government: Muni Income Taxes	$3,592,970	$3,521,019	$3,410,215
Local Government:			
State Government	$53,710	$17,926	$30,000
Federal Government			
**Other -*			
**Other -* Interfund Transfers	$500,000	$650,000	$700,000
**Other -*			
Membership Income			
Program Service Fees	$1,673,247	$1,275,594	$1,360,000
Investment Income			
TOTAL REVENUES	$15,568,835	$15,074,721	$15,752,448

Lead Applicant	Westshore Council of Governmen	Round 5	
Project Name	Westshore Regional Fire District I	Type of Request	Grant

Program Budget			
Actual ☐ Projected ✔	FY 1013	FY 2014	FY 2015
Expenses	Total Program Expenses	Total Program Expenses	Total Program Expenses
Salary and Benefits	$14,557,780	$14,776,145	$14,997,785
Contract Services			
Occupancy (rent, utilities, maintenance)			
Training & Professional Development			
Insurance			
Travel			
Capital & Equipment Expenses			
Supplies, Printing, Copying & Postage	$333,580	$336,080	$339,500
Evaluation			
Marketing			
Conferences, meetings, etc.			
Administration			
*Other - Repair/Maintenance	$584,570	$590,000	$590,000
*Other -			
*Other -			
TOTAL EXPENSES			
	Revenues	Revenues	Revenues
Contributions, Gifts, Grants, & Earned Revenue			
Local Government: Property Taxes	$10,047,354	$10,225,180	$10,401,978
Local Government: Muni Income Taxes	$3,374,976	$3,434,710	$3,494,097
Local Government:			
State Government	$30,000	$30,000	$30,000
Federal Government			
**Other -*			
**Other -* Interfund Transfers	$650,000	$625,000	$600,000
**Other -*			
Membership Income			
Program Service Fees	$1,373,600	$1,387,335	$1,401,210
Investment Income			
TOTAL REVENUES	$15,475,930	$15,702,225	$15,927,285

Lead Applicant	Westshore Council of Governmen	Round 5	
Project Name	Westshore Regional Fire District F	Type of Request	Grant

Program Budget

Use this space to justify your program budget and/or explain any assumptions used for the budget projections. These projections should be based on research, case studies, or industry standards and include a thoughtful justification.

The Program Budget narrative would not load properly and is, therefore, included as an attachment.

Section 4: Financial Information Scoring

- [x] (5 points) Applicant provided complete and accurate budget information and narrative justification for a total of six fiscal years.
- [ ] (3 points) Applicant provided complete and accurate budget information and for at least three fiscal years.
- [ ] (1 point) Applicant provided complete and accurate budget information for less than three fiscal years.

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Phase Two	Type of Request	Grant

Return On Investment

Return on Investment is a performance measure used to evaluate the efficiency of an investment. To derive the expected return on investment, divide the net gains of the project by the net costs. For these calculations, please use the implementation gains and costs, NOT the project costs (the cost of the feasibility, planning, or management study)--unless the results of this study will lead to direct savings without additional implementation costs. The gains from this project should be derived from the prior and future program budgets provided, and should be justified in the return on investment narrative.

Return on Investment Formulas:

Consider the following questions when determining the appropriate ROI formula for your project. Check the box of the formula that you are using to determine your ROI. These numbers should refer to savings/revenues illustrated in projected budgets.

Do you expect cost savings from efficiency from your project?

○ Use this formula: $\frac{\text{Total \$ Saved}}{\text{Total Program Costs}}$ * 100 = ROI

Do you expect cost avoidance from the implementation of your project/program?

● Use this formula: $\frac{\text{Total Cost Avoided}}{\text{Total Program Costs}}$ * 100 = ROI

Do you expect increased revenues as a result of your project/program?

○ Use this formula: $\frac{\text{Total New Revenue}}{\text{Total Program Costs}}$ * 100 = ROI

Do you expect some combination of savings, cost avoidance, or increased revenue as a result of your project/program? (Total Gains combines $ Saved, Costs Avoided, and New Revenue)

○ Use this formula: $\frac{\text{Total Gains}}{\text{Total Program Costs}}$ * 100 = ROI

Expected Return on Investment = $\frac{\$15,445,096}{\$46,396,005}$ * 100 = 33%

Expected Return on Investment is:

☐ Less than 25% (10 points) ☑ 25%-75% (20 points) ☐ Greater than 25% (30 points)

Questions about how to calculate ROI? Please contact the Office of Redevelopment at 614-995-2292 or lgif@development.ohio.gov

Section 4

Financial Information

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Phase Two	Type of Request	Grant

Return on Investment Justification Narrative: In the space below, describe the nature of the expected return on investment, providing justification for the numbers presented in the ROI calculation. This calculation should be based on the savings, cost avoidance, or increased revenues shown in the program budgets on the preceeding pages. Use references when appropriate to justify assumptions used for cost projections.

The ROI is based on 3 years of operational savings and cost avoidance derived from efficient manpower deployment and consolidated procedures and programming. In addition, by consolidating, the 4 Cities will not need to purchase aerial trucks saving the cities $3.3 million collectively. In order to meet in industry standards on response time the ESCI study recommends 3 new Fire Stations with another $1.7 million in station equipment costs (ESCI Study, p 7). Total program costs as outlined on page 14 are based on the past 3 years' actual total expense.

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Phase Tw	Type of Request	Grant

Loan Repayment Structure

Please outline your preferred loan repayment structure. At a minimum, please include the following: the entities responsible for repayment of the loan, all parties responsible for providing match amounts and an alternative funding source (in lieu of collateral). Applicants will have two years to complete their project upon execution of the loan agreement, and the repayment period will begin upon the final disbursement of the loan funds. A description of expected savings over the term of the loan may be used as a repayment source.

Applicant demonstrates a viable repayment source to support loan award. Secondary source can be in the form of a debt reserve, bank participation, a guarantee from a local entity, or other collateral (i.e. emergency, rainy day, or contingency fund, etc).

☐	Applicant clearly demonstrates a secondary repayment source (5 points)	☑	Applicant does not have a secondary repayment source (0 points)

Lead Applicant	Westshore Council of Governments	Round 5	
Project Name	Westshore Regional Fire District Phase Two Feasibility Study	Type of Request	Grant

Scoring Overview

Collaborative Measures	Description	Max Points		Applicant Self Score
Section 1: Collaborative Measures				
Population	Applicant's population (or the population of the area(s) served) falls within one of the listed categories as determined by the U.S. Census Bureau. Population scoring will be determined by the **smallest** population listed in the application. Applications from (or collaborating with) small communities are preferred.	5		5
Participating Entities	Applicant has executed partnership agreements outlining all collaborative partners and participation agreements and has resolutions of support. (Note: Sole applicants only need to provide a resolution of support from its governing entity.	5		5
Section 2: Success Measures				
Past Success	Applicant has successfully implemented, or is following project guidance from a shared services model, for an efficiency, shared service, coproduction or merger project in the past.	5		5
Scalable	Applicant's proposal can be scaled for the inclusion of other entities.	5		5
Replicable	Applicant's proposal can be replicated by other local governments.	5		5
Probability of Success	Applicant provides a documented need for the project and clearly outlines the likelihood of the need being met.	5		5
Section 3: Significance Measures				
Performance Audit Implementation/Cost Benchmarking	The project implements a single recommendation from a performance audit provided by the Auditor of State under Chapter 117 of the Ohio Revised Code or is informed by cost benchmarking.	5		5
Economic Impact	Applicant demonstrates the project will promote a business environment (i.e., demonstrates a business relationship resulting from the project) and will provide for community attraction (i.e., cost avoidance with respect to taxes).	5		5
Response to Economic Demand	The project responds to current substantial changes in economic demand for local or regional government services.	5		5
Section 4: Financial Measures				
Financial Information	Applicant includes financial information (i.e., service related operating budgets) for the most recent three years and the three year period following the project. The financial information must be directly related to the scope of the project and will be used as the cost basis for determining any savings resulting from the project.	5		5
Local Match	Percentage of local matching funds being contributed to the project. This may include in-kind contributions.	5		3
Expected Return	Applicant demonstrates as a percentage of savings (i.e., actual savings, increased revenue, or cost avoidance) an expected return. The return must be derived from the applicant's cost basis.	30		20
Repayment Structure (Loan Only)	Applicant demonstrates a viable repayment source to support loan award. Secondary source can be in the form of a debt reserve, bank participation, a guarantee from a local entity, or other collateral (i.e., emergency fund, rainy day fund, contingency fund, etc.).	5		0
			Total Points	83

AGREEMENT FOR ESTABLISHMENT

OF

WESTSHORE COUNCIL OF GOVERNMENTS

This agreement is made and entered into by and between certain municipal corporations in Cuyahoga County, Ohio and counties adjacent thereto. We have become parties to this agreement by causing this agreement or an identical copy of it to be signed by an officer duly authorized be the legislative authority of such municipal corporation.

WITNESSETH

The parties to this agreement wishing to establish a regional council of governments pursuant to Chapter 167 of the Ohio Revised Code, consisting of the municipal corporations of Bay Village, Fairview Park, Lakewood, North Olmsted, Rocky River, and Westlake agree as follows:

I. NAME. There is hereby established a regional council of governments which shall be known as the Westshore Council of Governments.

II. PURPOSE. The purpose of the Council shall be to foster cooperation between municipalities in all areas of municipal service. This shall include but shall not be limited to the effective exchange of information, pooling of manpower and resources for the efficient solutions of specific problems dealing with reciprocal service, mutual aid, and parallel action, and the exchange of ideas relating to areawide interest.

III. REPRESENTATION. Each municipal member of the Council shall be represented by its mayor or by an alternate designated by him.

IV. OFFICERS. The Council shall elect from its membership a president, vice president, secretary and treasurer who shall serve for a term of one year without compensation. The Council shall appoint a fiscal officer who need not necessarily be a member of the Council and who may serve with or without compensation.

V. MEETINGS. The Council shall meet at least once a year or at the call of its president or upon written notice signed by two or more of its members. A simple majority of the total membership shall constitute a quorum, and action may be taken by the affirmative vote of a simple majority of the total membership. Each member of the Council shall be entitled to one vote on each item under consideration. Voting shall be done by members or alternates personally present and no proxy or absentia voting shall be permitted.

VI. BYLAWS. The Council shall have the authority to adopt its own rules and bylaws to govern its proceedings.

VII. ADDITIONAL MEMBERS. Other municipalities may be admitted to membership in the Council upon unanimous vote of approval by the existing members. Such new member municipality may be required to share in the costs of any cooperative program then in existence as a condition of membership.

VIII. WITHDRAWAL FROM MEMBERSHIP. Any member municipality may withdraw from the Council sixty days after written notice of such withdrawal is mailed to all other members. Such withdrawal shall not affect the contractual rights set forth herein as to all other parties hereto. Where a member has made a financial commitment to provide matching funds for a federal grant or state grant over a specific period of time, or has made any other financial commitment to the Council, such financial liability shall extend for the full term of the commitment and shall not be affected by the member's withdrawal from the Council prior to the expiration thereof.

IX. WEST SHORE ENFORCEMENT BUREAU. In order to provide a greater degree of cooperation in the field of law enforcement, the Council hereby establishes the West Shore Enforcement Bureau. The membership on the Bureau shall consist of the police chiefs of each member municipality or their alternates specifically designated by them. The Bureau shall have authority to adopt its own rules and bylaws to govern its proceedings, subject to approval of the Council. Financial responsibility for the West Shore Enforcement Bureau shall rest on the fiscal officer for the Council.

X. CANCELLATION OF THE AGREEMENT. In the event a majority of the member municipalities agree that the West Shore Council of Governments should be dissolved, any assets of the Council shall be distributed to the members in accordance with the same formula under which they were contributed and accumulated.

XI. AMENDMENTS. This agreement may be amended by majority vote of all members of the Council at any regular or special meeting, provided copies of such proposed amendments are mailed to each member municipality not less than five days prior to such meeting; subject to the approval of a majority of the Municipal Council.

XII. SEVERABILITY. In the event any part or portion of this agreement shall be found to be contrary to law and thereby held to be null and void, all other provisions of this agreement shall remain in full force and effect, and shall not be otherwise affected by any such ruling, finding or decision.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be duly executed on the date indicated by signing this agreement or identical copies of same.

Date	
November 19, 1971	CITY OF BAY VILLAGE By Henry P. Rice Mayor
11-22-71	CITY OF FAIRVIEW PARK By Charles A. Mooney Mayor
November 19, 1971	CITY OF LAKEWOOD By Robert M. Smith Mayor
11/19/71	CITY OF NORTH OLMSTED By Ralph E. Christman Mayor
[illegible]	CITY OF WESTLAKE By [illegible] Mayor
11-24-71	CITY OF ROCKY RIVER ** By Earl Martz Mayor (see attachment)

WEST SHORE ENFORCEMENT BUREAU

Bylaws

In accordance with Article IX of the Agreement for Establishment of the West Shore Council of Governments, these bylaws are hereby adopted to govern the activities and procedures of the West Shore Enforcement Bureau.

I. PURPOSE. The purpose of the West Shore Enforcement Bureau shall be to provide organizational status to cooperative efforts between law enforcement agencies of the municipal members of the West Shore Council of Governments; to qualify for grants made available by virtue of the Omnibus Crime Control and Safe Streets Act of 1968, and other provisions of state and federal law; to serve as a forum for discussion of areawide law enforcement problems and to facilitate the collection and exchange of information relating to law enforcement activities within the various municipalities; and to provice for the exchange of services, physical assistance, and mutual aid between members of the Council in any manner deemed necessary and appropriate for effective law enforcement.

II. REPRESENTATION. The West Shore Enforcement Bureau shall consist of the police chiefs of the member municipalities, or their alternates specifically designated by them. A quorum shall consist of a majority of the police chiefs eligible for membership, and each representative shall be entitled to one vote. Action may be taken by the affirmative vote of a majority of those present and voting.

III. OFFICERS. Within thirty days after the approval of the Agreement for Establishment of the West Shore Council of Governments by each member legislative body, the police chiefs of each municipality shall meet and elect officers who shall serve through December 31, 1972. Such officers shall consist of a chairman and vice chairman. Beginning January 1, 1973, officers shall be elected for terms of one year each.

may be held when requested by the Chairman or by any two members who make such request in writing.

V. POWERS AND DUTIES. The Bureau shall have the following powers and duties and shall carry out such other responsibilities as may be imposed upon it by the West Shore Council of Governments or by the laws of the State of Ohio.

A. To prepare an annual budget subject to approval of the Council and an equitable plan for the division of cost; to serve as the financial control body and to receive funds for the Council.

B. To establish a salary of staff members, if any.

C. To approve regional studies and plans and to provide for the implementation of such plans.

D. To apply for and accept loans, grants and contributions on behalf of the Council and any other assistance in the form of money, property, labor and supplies from public and private sources, including assistance agencies, State of Ohio, and instrumentalities of the United States; to expend and disperse such grants, gifts, contributions and loans and other assistance for any approved purpose.

E. The Bureau may contract or enter into agreements with any person, federal, state or local agency or public or private organization and any local agency or political subdivision of the state may contract with it, to carry out the purposes of the Bureau as specified in these bylaws, or for which assistance is accepted. This shall include contracts for grants, loans, contributions, and any other assistance available from agencies of the State of Ohio and instrumentalities of the United States. The Bureau may enter into contracts let in connection with any project, for which assistance is received, stipulating that the contractor and any subcontractor comply with requirements as to minimum

wages, hours of work, and any condition which the State of Ohio and the United States has attached to financial aid which may be granted to the project.

VI. FINANCE.

A. Financial responsibility for the West Shore Enforcement Bureau shall rest on the fiscal officer for the Council.

B. Fiscal year. The fiscal year of the Bureau shall commence on January 1 and shall be a calendar year.

C. Allocation of costs. Costs for operation of the Bureau and all activities carried on under its authorization shall be borne by the member municipalities on the basus of a formula which shall be based on population as recorded in the most recent decennial census, and upon the amount of the last available tax duplicate. Both population and tax duplicate shall receive equal weight in the determination of the furmula. The formula shall be determined by dividing the porposed annual budget into equal parts, and allocating one part to the member municipalities in proportion to population and allocating the other part in proportion to tax duplicate. This shall be done by multiplying population figures and tax duplicate figures by common multipliers so as to arrive as closely as possible to the desired total figure.

D. Annual Audit. The Council may cause an annual audit to be performed by the Ohio Auditor of State or a licensed public accountant covering all financial affairs of the Council and the Bureau. Copies of such audit shall be mailed to each member of the Council.

VII. PARLIAMENTARY AUTHORITY. Roberts Rules of Order, Revised, shall govern all parliamentary procedures of the Council and of the Bureau in all cases to which they may be applicable, and in which they are not inconsistent with the bylaws or the special rules of order of this organization.

VIII. AMENDMENTS. These bylaws may be amended at any meeting of the Bureau provided written notice of such proposed amendments have been mailed to each municipal member at least five days before said meeting.

A T T A C H M E N T

Agreement for establishment of Westshore Council of Governments to be ammended as and signed as ammended...

ARTICLE IX. WEST SHORE ENFORCEMENT BUREAU. In order to provide a greater degree of cooperation in the field of law enforcement, the Council hereby establishes the West Shore Enforcement Bureau. The membership of the Bureau shall consist of the police chiefs of each member municipality or their alternates specifically designated by them. The Bureau shall have authority to adopt its own rules and bylaws to govern its proceedings, subject to the approval of the Council. Financial responsibility for the West Shore Enforcement Bureau shall rest on the fiscal officer for the Council. NO TERMS AND CONDITIONS OF ANY CONTRACT SHALL BE BINDING ON THE PARTICIPATING MUNICIPALITY UNLESS APPROVED BY THE LEGISLATIVE BODY OF THAT MUNICIPALITY.

ARTICLE XI. AMENDMENTS. This agreement may be amended by majority vote of all members of the Council at any regular or special meeting, provided copies of such proposed admendments are mailed to each member municipality not less than five days prior ot such meeting ~~, subject to the approval of a majority of the Municipal Councils.~~ . SUCH AMENDMENTS SHALL NOT BECOME EFFECTIVE UNTIL APPROVED BY THE LEGISLATIVE BODIES OF ALL THE MUNICIPALITIES PARTIES TO THE AGREEMENT.

Westshore Council of Governments

City of Bay Village, City of Fairview Park,
City of Lakewood, City of North Olmsted,
City of North Ridgeville, City of Rocky River, City of Westlake

Fire, EMS, and Related Services Operations Consolidation Feasibility Study

October 2010

Emergency Services Consulting *International*
25200 SW Parkway Ave. Suite 3 ● Wilsonville, Oregon 97070
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Westshore Council of Governments

Ohio

Fire, EMS, and Related Services Operations Consolidation Feasibility Study

October 2010

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Acknowledgements

Although the bulk of this report is based upon analysis of data gathered during on-site visits by ESCI staff, collection, organization, and interpretation of some of that data was necessary by city staff. Without the assistance of those individuals, this project would not have been possible. It is not possible to identify every individual with whom ESCI personnel came into contact, but the lists that follow represent the key personnel involved in making this project possible. It is with the collective thanks of ESCI that we present this document to the member cities of the Westshore Council of Governments.

City of Bay Village

Deborah Sutherland, Mayor

Brian Cruse, President of Council

James R. Scott, Council at Large

Dwight Clark, Council at Large

David L. Tadych, Ward 1 Council Rep.

Paul Koomar, Ward 2 Council Rep.

Scott A. Pohlkamp, Ward 3 Council Rep.

Michael A. Young, Ward 4 Council Rep.

James Sammon, Fire Chief

Employees and Staff of
Bay Village Fire Department

City of Fairview Park

Eileen Patton, Mayor

Michael Kilbane, President of Council

Peggy Cleary, Council at Large

Patrick Manning, Ward 1 Council Rep.

William Minek, Ward 2 Council Rep.

Fredric Gauthier, Ward 3 Council Rep.

John Hinkel, Ward 4 Council Rep.

Thomas “Pete” Matia, Ward 5 Council Rep.

David Simon, Fire Chief

Employees and Staff of
Fairview Park Fire Department

City of Lakewood

Edward FitzGerald, Mayor

Kevin Butler, Ward 1 Council Rep.

Thomas Bullock, Ward 2 Council Rep.

Michael Summers, Ward 3 Council Rep.

Mary Louise Madigan, Ward 4 Council Rep.

Nickie J. Antonio, Council at Large

Brian E. Powers, Council at Large

Monique Smith, Council at Large

Lawrence Mroz, Fire Chief

Employees and Staff of
Lakewood Fire Department

Timothy J. Malley, Police Chief

Employees and Staff of Lakewood
Police Department Communications

City of North Olmsted

Kevin Kennedy, Mayor

Duane K. Limpert, President of Council

Louis J. Brossard, Ward 1 Council Rep.

Paul R. Barker, Ward 2 Council Rep.

Nicole Dailey Jones, Ward 3 Council Rep.

Lawrence R. Orlowski, Ward 4 Council Rep.

Angela Williamson, Council at Large

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Thomas R. Klecan, Fire Chief

Employees and Staff of
North Olmsted Fire Department

Wayne Wozniak, Police Chief

Employees and Staff of North Olmsted
Police Department Communications

City of North Ridgeville

G. David Gillock, Mayor

Kevin Corcoran, President of Council

Nancy J. Buescher, Ward 1 Council Rep.

Dennis J. Boose, Ward 2 Council Rep.

Richard W. Jaenke, Ward 3 Council Rep.

Robert W. Olesen, Ward 4 Council Rep.

Roseanne Johnson, Council at Large

Bernadine R. Butkowski, Council at Large

Richard E. Miller, Fire Chief

Employees and Staff of
North Ridgeville Fire Department

City of Westlake

Dennis Clough, Mayor

Michael F. Killeen, President of Council

Edward G. Hack, Ward 1 Council Rep.

James P. Connole, Ward 2 Council Rep.

Dennis J. Sullivan, Ward 3 Council Rep.

Michael F. O'Donnell, Ward 4 Council Rep.

Kenneth R. Brady, Ward 5 Council Rep.

Mark R. Getsay, Ward 6 Council Rep.

Dale Kraus, Provisional Fire Chief

Employees and Staff of
Westlake Fire Department

City of Rocky River

Pamela E. Bobst, Mayor

Thomas J. Hunt, Ward 1 Council Rep.,
President pro tem

James W. Moran, Ward 2 Council Rep.,
President of Council

Michael W. Mylen, Ward 3 Council Rep.

John B. Shepherd, Ward 4 Council Rep.

Anjanette A. Whitman, Council at Large

David W. Furry, Council at Large

Dr. Jim Schieda, Council at Large

Christopher Flynn, Fire Chief

Employees and Staff of
Rocky River Fire Department

WestCom

Nick Pishnery, Supervisor

Executive Summary

This Fire, EMS, and Related Services Operations Consolidation Feasibility Study report is offered in response to a request by the Westshore Council of Governments. The purpose of this study was to review and analyze current deployment and practices of the emergency services provided within the Westshore Council of Governments including; Bay Village, Fairview Park, Lakewood, North Olmsted, North Ridgeville, Rocky River, and Westlake, to assess future needs and provide the organization with options for enhanced cooperative efforts to meet those future needs.

ESCI would like to thank the elected and appointed officials of each participating municipality as well as the personnel of each represented fire department for their outstanding cooperation in the preparation of this report. All involved were candid in their comments and provided an enormous amount of information in a relatively short period of time.

Each report section provides the reader with general information about that element, as well as specific observations and analysis of any significant issues or conditions that are pertinent to the topic discussed. Observations are supported by data collected during the information gathering process, through analysis of the collected data, and from the collective emergency services experience of the ESCI project team.

Analysis of Existing Resources

The first section of this report includes a snapshot review of each of the organizations within the region. It provides a brief overview of each participating agency, including history and formation, governance and lines of authority, foundational policy, organizational design, and a review of fiscal resources and liabilities. The analysis of existing resources continues with a comprehensive evaluation of each department's management components, staffing and personnel management, capital assets and improvement programs, support programs (such as training), hazardous materials, technical rescue, communications, emergency management, and emergency medical services.

The criteria used to evaluate the organizations have been developed over many years and include relevant guidelines from national accreditation, the National Fire Protection Association (NFPA), federal and state mandates for fire and EMS systems, recommendations by various organizations such as the Center for Public Safety Excellence (CPSE), and generally accepted practices within the Fire and EMS industry.

The delivery of fire suppression and rescue services is no more effective than the sum of its parts. It requires efficient notification of an emergency, rapid response from well-located facilities in appropriate apparatus, and sufficient staffing following a well-practiced plan of action. Although the ancillary function of each department are an important aspect of overall service delivery, the most common component used as a measure of effectiveness and efficiency is that of response performance. This section, in addition to the programs noted above, provides an evaluation of service delivery and performance for each of the participating agencies. That evaluation involved analysis of distribution of resources, demand or workload, reliability of resources, call concurrency and resource drawdown, and recorded system response performance.

An analysis of distribution revealed several areas of overlap as well as coverage gaps in the region. Each of these areas is displayed geographically in the report and addressed in later sections. Service demand was evaluated for each individual agency and included temporal analysis; that is, overall workload as well as workload by month, day, and hour. Additionally, service demand was evaluated and displayed geographically. This analysis revealed that the workload of each agency consisted of primarily medical incidents, as would be expected from agencies participating in emergency medical services, and temporal analysis revealed workload fluctuations consistent with national trends.

The workload on emergency response units can also be a factor in response time performance. The busier a given unit, the less available it is for the next emergency. If a response unit is unavailable, then a unit from a more distant fire station must respond, increasing overall response time. The fire departments have differing levels of workload, both within and away from their primary response area. While mutual aid between departments is common, this practice reduces resources otherwise available for an agency. To the degree that this occurs, the reliability of a department can be negatively affected. Bay Village FD had the highest incidence of mutual aid given at 17 percent while Lakewood maintained the lowest mutual aid given rate at near 1 percent.

Call concurrency and resource drawdown, when analyzed for each agency, revealed that most incidents within the region occur singularly. However, Lakewood, North Ridgeville, Rocky River, and Westlake fire departments had call concurrency rates for multiple incidents at rates between 15 and 34 percent—higher than expected. For the concentration analysis, typical staffing amounts were utilized as reported to ESCI to illustrate the normal capacity of firefighters

available to combat a fire. For each jurisdiction, the full available staff of the host fire department was counted along with four firefighters from each surrounding department.

Total response time is the amount of time a resident or business waits until an apparatus to arrive at the scene of an emergency beginning when they first called the designated emergency number, often 9-1-1, and is made up of several elements: call processing, turnout, and travel times. Since the fire department has no influence on call processing time (the time during which the agency responsible for receiving the 9-1-1 call takes the information and prepares to dispatch the appropriate resources), fire departments are measured on response time from the time of dispatch to the arrival on scene. The following table summarizes the average and 90th percentile response performance of each participating agency.

Figure 1: Average Turnout and Response Time Performance

	Average Turnout	Average Response	90th Percentile Response
Bay Village	1:28	4:57	7:47
Fairview Park	1:24	3:47	6:04
Lakewood	1:43	4:04	6:16
North Olmsted	N/A	3:22	6:00
North Ridgeville	1:15	5:31	8:32
Rocky River	1:05	4:22	6:22
Westlake	1:15	5:12	7:36

Based on *NFPA 1710*, the standard that applies to career fire departments, the recommended turnout time for fire and medical incidents is 1 minute 20 seconds and 1 minute, respectively. Overall response time, based on the same standard, recommends an additional 4 minutes of travel for a total response time of 5 minutes 20 seconds for fires and 5 minutes for medical incidents. As can be seen (Figure 1), none of the fire departments in the region are meeting the standard outlined in *NFPA 1710*.

During the evaluation of each organization, ESCI found that the departments are operating not unlike many agencies of similar organization, geography, population, and demographics. Throughout the evaluation section of the report, 75 short and mid-term recommendations are highlighted and then cataloged in the appendix of the report.

Analysis of Future Needs

This section of the report used U.S. Census and local planning population and demographic data to approximate the total population of the region. The population estimate for the region is

190,840 persons. This is a decrease (4.2 percent) from the official decennial census that measured 199,211 persons. The region did grow from 197,972 persons in 1990 until 2000 before retreating in population levels during the last decade. Higher concentrations of population are found within the cities of Lakewood, Rocky River, and Fairview Park, as expected since they are the closest to the City of Cleveland.

As one of the factors that influences emergency service demand, population and its composition with regard to age and socioeconomic characteristics were examined. A total of 16 percent of the population is 65 years of age or older and 6 percent of the population is under five years of age, placing a total of 22 percent of the area's population in the significant target age groups that pose the highest risk in residential fire incidents. Although the bulk of the population is aged less than 64 years of age, the rate of growth over the decade in the age 50 and older categories presents unique challenges to the fire service. Several sources of information were used to project how the population and demographics of the region will change over the next 20 years, which will be tied to an estimate of future service demand.

At least one population projection appears to be slightly optimistic with a slight increase in total population over the 20-year period, while most other projections as well as ESCI's census–based method show a continued decrease in study area population.

In evaluating the deployment of facilities, resources, and staffing, it is imperative that consideration be given to potential changes in workload that could directly affect such deployment. Any changes in service demand can require changes and adjustments in the deployment of staff and resources in order to maintain acceptable levels of performance.

For purposes of this study, ESCI utilized the population projections presented earlier and multiplied these by a forecasted incident rate derived from incident per capita rates to identify workload potential through the year 2030. Based on several methods of projected future service demand, ESCI estimates that overall workload will range between 27,000 and 32,000 incidents annually by the year 2030.

Feasible Delivery System Strategies

A regional fire protection study is intended to provide strategies that are long term in nature. It is the job of a this report section to identify the most critical issues the agencies will face over the long haul, out as much as 20 years in the future. ESCI initiated that process in the previous sections of this report where community growth, identified risks, and forecast service demands

were evaluated. In developing a long-term strategy for emergency services in the study area, the integrative use of knowledge acquisition, depth of expertise, and geographic modeling tools were employed.

Facilities

Most of the overlapping coverage that exists between municipalities is similar to that which occurs between Rocky River and Fairview. However, in Lakewood coverage redundancy exists between all fire stations. ESCI does not recommend the closure of existing fire stations in any of the municipalities because a widening of service gaps in coverage would result. Service gaps exist in each of the municipalities with the exception of Lakewood. The extent of service demand coverage loss can be compared to overall municipal service demand to determine the need for relocation or the need for additional fire stations. The analysis indicates that most municipalities fall below the standard of 90 percent coverage of service demand. This indicates the cities potentially cannot achieve the goal of response time performance as recommended in *NFPA 1710*. It is important to note at this point that the overall current service demand coverage in the region is 88 percent, which may be satisfactory given the capital costs of relocation or additional facility construction. Each agency's facilities recommendations appear below.

Bay Village

To achieve service demand coverage of 90 percent, the current fire station would need to close and two fire stations, one on each side of the village, would need to be constructed. Suggested locations would be near the intersections of Wolf Road and Bassett Street, and the second location near Wolf Road and Columbia Road.

Fairview Park

No changes recommended.

Lakewood

No changes recommended.

North Olmsted

No changes recommended.

North Ridgeville

Relocating Fire Station No. 1, NRFD gains coverage in the extreme northeast but trades it for coverage in the north end, western Highway 20, and the center region area. ESCI suggests that Fire Station No. 1 be located near the intersection of Wallace Street and Highway 20 for a balanced coverage in the northeast quadrant. We concur with the proposed site for Fire Station No. 3. Because of the significant commercial growth in the western area along Center Ridge Road and residential development in the southwest quadrant, another fire station should be considered. A location in the general vicinity of the intersection of Sugar Ridge Road and Race Road would be an ideal location.

Rocky River

Approximately 90 percent of service demand within Rocky River could be reached if the fire station was moved about a quarter of mile north of Hilliard Boulevard on Wager Road.

Westlake

A third NRFD fire station on the west side would need to be constructed to the north of the current facility for service demand coverage to exceed 90 percent. The north fire station (Fire Station No. 3) would be best sited at Crocker Road and Detroit Road.

Apparatus

Each added fire station proposed in the preceding section would require, at a minimum, one engine (pumper) and suitable staff. The following table details the recommended staffed apparatus in each jurisdiction for engines, trucks, and ambulances.

Figure 2: Apparatus and Staffing Plan[1]

Jurisdiction	Engine	Quint	Truck	EMS
Bay Village East		X		X
Bay Village West	X			
Fairview Park		X		X
Lakewood Fire Station No. 1	X		X	XX
Lakewood Fire Station No. 2	X			X
Lakewood Fire Station No. 3	X			X
North Olmsted Fire Station No. 1		X		X
North Olmsted Fire Station No. 2	X			X
North Ridgeville Fire Station No. 1		X		X
North Ridgeville Fire Station No. 2		X		X
North Ridgeville Fire Station No. 3	X			X
North Ridgeville Fire Station No. 4	X			X
Rocky River	X			X
Westlake Fire Station 1A		X		X
Westlake Fire Station 1B	X			X
Westlake Fire Station No. 2	X		X	X

A total of approximately $1.7 million for additional apparatus for the three new fire stations is anticipated. In a scenario where the fire departments combined into a single agency, it is likely that a smaller number of additional fire engines would be needed. This is possible through a reduction in the number of reserved pumpers that would be required for a single jurisdiction.

Opportunities for Cooperative Efforts

ESCI addressed each agency individually, making unilateral and bilateral observations and recommendations based on an analysis of service, personnel, and equipment. This section of the report identifies the potential for emergency service improvements in the area based on the potential unification of these fire protection and emergency medical services components.

ESCI usually makes no distinction between unification, consolidation, or merger, tending to use each term interchangeably. The reader should note that when referring to the union of programs or agencies, the operative words are *functional and legal.*

Governing boards should pursue the process of joining two or more fire departments only after concluding that unification is cost-effective and is likely to provide better and/or more efficient service to the public. Each agency's legal counsel should research the particular statutory steps necessary to implement a particular unification strategy. The different processes are not commonly difficult to accomplish, but because the transfer of public assets and liabilities may be

[1] Note: Green shaded boxes indicate cross staffed units.

involved, the procedure itself can be relatively precise. It is important, therefore, that the agencies have the benefit of competent legal advice throughout the process.

The fire departments in the study area already benefit from some limited collaborative efforts, particularly in regard to emergency response and suppression activities; and it is natural that continuing the long-term strategy of cooperation should eventually lead to the whole area forming a single fire agency. If the fire departments continue this progression by implementing even some of the partnering strategies found in this study, taking the next logical step seems inevitable. A cost analysis of this strategy at full deployment shows an annual cost avoidance of over $595,511 (based on 2009 fiscal year dollars). A number of policy options exist for integrating the fire and emergency services of the fire departments in the study area. Some of the following options might be deemed inappropriate in this situation by the local elected officials, who are much more in touch with local political will and culture; but these options are worthy of discussing for future opportunities. The options include the following:

- Form a consolidated fire department through an interlocal agreement (ILA). This would leave all existing funding and governance mechanisms in place and require extensive negotiation of interlocal agreements for the formation, governance, and operation of a single fire and EMS department. Equitable funding would be negotiated through the ILA. This policy option would only operationally merge the fire protection system of the study area, requiring local action and proper notification for reversal.
- Gain voter approval to form and fund a joint fire district.

With seven agencies in the study and given the geographic layout of the cities, many other possible combinations exist, assuming contiguity was necessary to achieve best efficiency in an operational consolidation. Even then, while contiguous borders are a typical factor in operational consolidations, they are not absolutely necessary. Even more possible combinations open up if contiguity is not an absolute. The formation of an interlocal service agreement or other cooperative efforts fails for many of the same reasons as a legal merger. As with the creation of a fire district, sometimes law prohibits the idea at the outset and other times the proposal may be doomed by the unfavorable outcome of a public election or the reality of finance. These issues aside, however, the same four major pitfalls of cooperative effort that were discussed in the previous strategy presented in this report can also cause even the most feasible regional oversight strategy to go wrong. The following functional consolidation strategies have also been provided within the report.

A – Develop a Joint Support and Logistics Services Division

B – Develop a Regional Fire Safety Education Coalition

C – Develop a Regional Juvenile Fire Setter Intervention Network

D – Create a Unified Occupational Medicine Program

E – Create a Unified Wellness and Fitness Program

F – Adopt and Implement a Computerized Training Records Management System

G – Develop and Adopt Common Training Standards

H – Create a Regional Training Manual

I – Implement and Cooperatively Use a Video Conferencing System

J – Develop an Annual Regional Training Plan

K – Consolidate Training into a Regional Training Division

L – Develop a Regional Fire and EMS Training Facility

M – Develop Uniform Fees for Service

N – Purchase Uniform Emergency Apparatus

O – Develop a Model Labor Agreement for all Regional Departments

P – Acquire AVL and MDC or MDT Capabilities

Q – Develop Uniform Pre-Incident Plans

R – Provide for Joint Staffing of Fire Stations and Apparatus

S – Provide Regional Incident Command and Operations Supervision

T – Purchase and Implement an Electronic Staffing Program

U – Develop Standard Operating Guidelines

V – Shared Specialty Teams

W – Develop Mutual Training Strategies

X – Complete Development and Adoption of a Single Fire Code

Y – Provide for Westshore EMS Supervision

Z – Provide System-Wide Guidelines for Fire Response

AA – Implement the Use of Peak Activity Units (PAUs)

AB – Provide Joint EMS Supply Purchasing and Logistics Services

AC – Develop Deployment Standards

Findings and Recommendations for Action

It is common for those in the fire service to tout themselves, or their department in terms such as “a pride-driven organization that is at their best every day,” and “the best by test,” or more simply, “the best.” The true mark of quality of the best fire departments however, is working continuously for measurable improvement in organizational performance. By undertaking this study of collaborative opportunities, the leadership of the Westshore COG have begun the task

of organizational and system evaluation that is necessary to plan for and reach the goal of truly being the best.

We intend no suggestion that the Westshore fire departments are not already operating at a high level. In fact, we are pleased to report all available evidence shows that the region's fire departments consistently provide excellent service to the citizens of the protected communities. However, in keeping with the notion of continuous improvement wherein an unending loop of performance, measurement, and evaluation leads to system enhancements that would otherwise be impossible, we offer recommendations to assist the Westshore fire departments to implement the collaborative strategies that will best benefit the public.

The success of adopting and implementing cooperative opportunities depends on many things. In our experience with dozens of functional, operational, and legal unifications, leadership is the single factor that most frequently determines success. Nearly always, a key staff, councilor, or board member champions the concept garnering the support of the various affected groups (political, labor, member, and community). In addition, good leadership fosters an organizational culture receptive to planning, calculated risk taking, and flexibility. The manner in which leaders promote a trusting relationship between all groups and aid two-way communication between them is essential.

The Westshore fire departments should promptly and systematically implement as many of the feasible cooperative opportunities as is possible. It is important that the group exercise proper management of the process, but at the same time it is also important not to get bogged down by bureaucracy. Long-term success of many of the initiatives may depend on short-term evidence of improvement and benefit. Consequently, the establishment of a steering committee is recommended to assure that the process moves forward without delay.

- *Establish an Oversight Board to Plan and Manage the Implementation of Feasible Collaborative Opportunities* – We recommend that the Westshore fire departments empanel an oversight board comprised of agency representatives and other affected parties. The group should assume responsibility for prioritizing, and determining the sequential order for implementation of all feasible collaborative opportunities. The oversight board should have the authority and accountability to initiate all opportunities within established budgetary and governance limitations.

The ESCI project team began collecting information concerning the emergency systems in the Westshore region in October 2009. The team members recognize that the report contains an extremely large quantity of information and ESCI thanks the staff and elected officials of the

Cities of Bay Village, Fairview Park, Lakewood, North Olmsted, North Ridgeville, Rocky River, and Westlake for their tireless efforts in bringing this project to fruition. ESCI would also thank the various individuals and external organizations for their input, opinions, and candid conversations throughout this process. We sincerely hope that the information contained in this extensive report is utilized to its fullest extent and that the emergency services provided to the citizens of the region are improved by its implementation.

Analysis of Existing Resources

This regional emergency services feasibility project and analysis begins with a full and comprehensive agency evaluation of each organization included in the study. This establishes a baseline of full disclosure as to the condition, capabilities, programs, processes, financial status, and organizational effectiveness of all participating agencies. Once these areas are identified, documented, reviewed, and analyzed, observations will be made for specific improvements. These activities provide invaluable background information that becomes a foundation and guide for the future planning processes.

Overview of Partnering Agencies

The following information provides the community baseline information for the study area fire departments. It includes a general discussion about governance and structure of the organizations, size and general nature of the communities, and an overview of available resources dedicated to fire and emergency medical services (EMS) functions.

History, Formation, and General Description

Bay Village Fire Department

The Bay Village Fire Department (BVFD) is a division of the City of Bay Village. BVFD provides fire protection, advanced life support (ALS), and emergency medical transport services to the community. Situated along the shore of Lake Erie, west of Cleveland, the city includes upscale suburban residential neighborhoods and areas of light retail.

BVFD provides emergency services to a resident population of 16,087[2] in an area of roughly 7.1 square miles. The services area has seen a consistent increase in the number of housing units over the past two decades but a decrease in population. The population estimate of the city in 2008 was 14,606, a decrease of approximately 9.2 percent since the 2000 census.[3] Census estimates, however, are based on extrapolations of regional data and trends and it is widely accepted among local officials that the population of Bay Village remains at about 17,000. The department's services are provided from a single facility located at 28100 Wolf Road. The department maintains a fleet of vehicles, including two fire engines, one aerial truck, and two ambulances, along with specialty or utility units including a utility SUV and boat. No reserve vehicles are available.

[2] U.S. Census Bureau, 2000 census data.
[3] U.S. Census Bureau, 2008 census estimate.

There are 28 individuals[4] involved in delivering service to the city. The department's primary management team includes a chief and three shift captains. There are no clerical or support personnel. Primary staffing coverage for emergency response is through the use of career firefighters assigned to 24-hour shifts. For immediate response, at least five personnel are typically on duty at all times. Minimum staffing is not contractually defined and is subject to change,

The Insurance Services Office (ISO) reviews the fire protection resources within communities and provides a Community Fire Protection Rating system from which insurance rates are often based. The rating system evaluates three primary areas: the emergency communication and dispatch system, the fire department, and the community's pressurized hydrant or tanker-based water supply. The overall rating is then expressed as a number between 1 and 10, with 1 being the highest level of protection and 10 being unprotected or nearly so.

As of the latest rating in March of 2002, the Insurance Services Office gave Bay Village a Public Protection Class rating of Class 5. During that classification review, the areas with the lowest scores relative to the maximum points available were credit for ladder or service companies, credit for number of personnel, and credit for training. The relative class for the fire department was a Class 6, while the relative class for the community's water supply was a Class 2. As a result, the city received a divergence penalty of 7.30 percent and a resulting overall score of Class 5.

BVFD provides a variety of services, including fire suppression, emergency medical transport, vehicle extrication, operations-level hazmat, vertical rope rescue, swift and surface water rescue, code enforcement, and public education. The Westshore regional hazardous materials and technical rescue response team provides additional technician-level hazmat and rescue functions.

The Westshore Central Dispatch Center (WestCom) provides emergency call receipt and dispatch service.

Fairview Park Fire Department

The Fairview Park Fire Department (FPFD) is a direct operating department of the City of Fairview Park and provides fire protection and advanced life support (ALS) emergency medical

[4] Current number at time of field research.

transport services to the community. The response area includes both urban and suburban residential, commercial, and mixed-use developments, with a few high-rise structures. Fairview Park is situated along the Rocky River near the shore of Lake Erie in the Cleveland metropolitan area.

FPFD provides emergency services to a population of 17,572[5] in an area of roughly 4.7 square miles. The population estimate of the Fairview Park in 2008 was 15,762, a decrease of approximately 12.6 percent since 2000.[6] The department's services are provided from one facility located at the city hall complex (20777 Lorain Road). The department maintains a fleet of vehicles, including two fire engines, one aerial truck, two ambulances, and one utility vehicle. No vehicles are available in a reserve fleet.

There are 29 individuals[7] involved in delivering service to the jurisdiction. The department's primary management team includes a chief, three captains, and three lieutenants. An administrative assistant provides additional clerical and support services. Primary staffing coverage for emergency response is through the use of career firefighters on 24-hour shifts. For immediate response, a minimum of six personnel are on duty at all times.

As of the latest rating in February of 2005, the Insurance Services Office gave the service area a Public Protection Class rating of Class 4. During that classification review, the areas with the lowest scores relative to the maximum points available were credit for ladder or service companies, credit for number of personnel, and credit for training. The relative class for the fire department was a Class 5, while the relative class for the community's water supply was a Class 2. As a result, the city received a divergence penalty of 6.39 percent and a resulting overall score of Class 4.

The department provides a variety of services, including fire suppression, emergency medical transport, vehicle extrication, operations-level hazmat, fire code enforcement, and public education. The Westshore regional hazardous materials and technical rescue response team provides additional technician-level hazmat and rescue functions.

The Westshore Central Dispatch Center (WestCom) provides emergency call receipt and dispatch service.

[5] U.S. Census Bureau, 2000 census data.
[6] U.S. Census Bureau, 2008 census estimate.
[7] Current number at time of field research.

Lakewood Fire Department

The Lakewood Fire Department (LFD) is a direct operating department of the City of Lakewood and provides fire protection and advanced life support (ALS) emergency medical transport services to the community. The response area includes urban residential, commercial, and mixed-use development, including some high-rise structures, and is situated adjacent to the City of Cleveland on the shore of Lake Erie.

The department was first established in 1902 when the small hamlet purchased a hose wagon for $1,207 and contracted with an undertaker to provide a team of horses to pull it.

LFD now provides emergency services to a population of 56,646[8] in an area of roughly 6.7 square miles. The 2008 U.S. Census population estimate for Lakewood was 50,704, a decrease of approximately 15.1 percent from the 1990 census.[9] The department's services are provided from three fire stations strategically located in the city. The department maintains a fleet of vehicles, including two fire engines, one aerial truck, four ambulances, and an air truck. Additionally, one engine, one ladder, and one ambulance are available in a reserve fleet not typically used for front-line service.

There are 88 individuals[10] involved in delivering the department's services to the City of Lakewood. The department's primary management team includes a chief, three assistant chiefs, and a fire marshal. An administrative assistant provides additional clerical and support services. Primary staffing coverage for emergency response is through the use of career firefighters assigned to 24-hour shifts. For immediate response, at least 20 personnel are on duty at all times.

As of the latest rating in August of 1996, the Insurance Services Office gave the service area a Public Protection Class rating of Class 3. During that classification review, the areas with the lowest scores relative to the maximum points available were credit for number of personnel and credit for training. The relative class for the fire department was a Class 3, while the relative class for the community's water supply was a Class 2. As a result, the city received a divergence penalty of only 2.28 percent and a resulting overall score of Class 3. Since this rating review is over 13 years old, the scores may not be consistent with how the department would be rated today.

[8] U.S. Census Bureau, 2000 census data.
[9] U.S. Census Bureau, 2008 census estimate.
[10] Current number at time of field research.

LFD provides fire suppression, emergency medical transport, vehicle extrication, operations-level hazmat, high angle rescue, surface ice and water rescue, fire code enforcement, and public education. The Westshore regional hazardous materials and technical rescue response team provides additional technician-level hazmat and rescue functions.

The Lakewood Dispatch Center (operated by the Lakewood Police Department) provides emergency call receipt and dispatch service.

North Olmsted Fire Department

The North Olmsted Fire Department (NOFD) is a direct operating department of the City of North Olmsted and provides fire protection and advanced life support (ALS) emergency medical transport services to the community. The response area includes both urban and suburban residential, commercial, and mixed-use developments. North Olmsted is situated along the western edge of Cuyahoga County.

NOFD provides emergency services to a population of 34,113[11] in an area of roughly 11.6 square miles. In 2008 the U.S. Census population estimate for North Olmsted was 31,319, a decrease of approximately 8.4 percent from the 1990 census of 34,204.[12] The department's services are provided from two fire stations, one at 24291 Lorain Road and a second at 29592 Lorain Road. The department maintains a fleet of vehicles, including two fire engines, one aerial truck, one light rescue truck, three ambulances, and several specialty or utility units. There are no vehicles available in reserve.

There are 41 individuals[13] involved in delivering services to the jurisdiction. The department's primary management team includes a chief, four captains, and six lieutenants. An administrative secretary provides additional clerical and support services. Primary staffing coverage for emergency response is through the use of career firefighters on 24-hour shifts. For immediate response, at minimum of eight personnel are on duty at all times.

As of the latest rating in September of 2004, the Insurance Services Office gave the service area a Public Protection Class rating of Class 4. During that classification review, the areas with the lowest scores relative to the maximum points available were credit for engine companies, credit for ladder or service companies, credit for number of personnel, and credit for training.

[11] U.S. Census Bureau, 2000 census data.
[12] U.S. Census Bureau, 2008 census estimate.
[13] Current number at time of field research.

The relative class for the fire department was a Class 6, while the relative class for the community's water supply was a Class 2. As a result, the city received a divergence penalty of 7.83 percent and a resulting overall score of Class 4.

The department provides fire suppression, emergency medical transport, vehicle extrication, operations-level hazmat, SWAT medic, swift water and high-angle rope rescue, code enforcement, and public education. The Westshore regional hazardous materials and technical rescue response team provides additional technician-level hazmat and rescue functions.

The North Olmsted Dispatch Center (Police Department) provides emergency call receipt and dispatch service.

North Ridgeville Fire Department

The North Ridgeville Fire Department (NRFD) is a direct operating department of the City of North Ridgeville and provides fire protection and advanced life support (ALS) emergency medical transport services to the community. The response area includes urban and suburban residential densities, commercial development, and some remaining rural areas of Lorain County and is situated on the Cuyahoga-Lorain County line along the western edges of the Cleveland metropolitan area.

The department began providing services as a volunteer fire department in 1931 and transitioned to a career fire department in 1967.

NRFD provides emergency services to a population of 22,338[14] in an area of roughly 23.5 square miles. Of the seven cities in this study, North Ridgeville has seen the largest increase in population. The U.S. Census estimates the 2008 population at 28,153, a 30.6 percent increase from the 1990 census of 21,564.[15] The area served by the department continues to experience moderate growth. The department's services are provided from two facilities located in the jurisdiction. The department maintains one fire engine, two "quint" aerial trucks, three ambulances, and one wildland firefighting vehicle, along with a utility truck and boat. In addition, one ambulance vehicle is available in reserve and is not typically used for front-line service.

There are 37 individuals[16] involved in delivering the department's services to the jurisdiction. The department's primary management team includes a chief and two assistant chiefs. An

[14] U.S. Census Bureau, 2000 census data.
[15] U.S. Census Bureau, 2008 census estimate.
[16] Current number at time of field research.

administrative assistant provides additional support services. Primary staffing coverage for emergency response is through the use of paid on-duty firefighters in the fire station, with additional response by on-call personnel. For immediate response, a minimum of eight personnel are on duty at all times.

As of the latest rating in June of 2010, the Insurance Services Office gave the service area a Public Protection Class rating of Class 4. During that classification review, the areas with the lowest scores relative to the maximum points available were credit for engine companies, credit for ladder or service companies, credit for fire station distribution, credit for number of personnel, and credit for training. The relative class for the fire department was a Class 5, while the relative class for the community's water supply was a Class 2. As a result, the city received a divergence penalty of 5.99 percent and a resulting overall score of Class 4.

The department provides fire suppression, emergency medical transport, vehicle extrication, operations-level hazmat, dive and surface water rescue, code enforcement and public education. A regional hazardous materials response team provides technician-level hazmat response when needed.

The Westshore Central Dispatch Center (WestCom) provides emergency call receipt and dispatch service.

Rocky River Fire Department

The Rocky River Fire Department (RRFD) is a direct operating department of the City of Rocky River and provides fire protection and advanced life support (ALS) emergency medical transport services to the community. The response area includes both urban and suburban residential, commercial and mixed-use developments and is situated in western Cuyahoga County.

The department began providing services in 1911 as a volunteer department. In 1924, the first full-time members were appointed. In 1925, the fire department purchased its first motorized apparatus.

RRFD provides emergency services to a population of 20,735[17] in an area of roughly 5.6 square miles. The department's services are provided from a single fire station located at 21012 Hilliard Boulevard. The department maintains two fire engines, one aerial truck, two

[17] U.S. Census Bureau, 2000 census data.

ambulances (with a third in reserve), two inflatable boats, two utility vans, and one chief's vehicle.

There are 29 sworn individuals (fire chief, fire prevention officer, and 27 shift personnel)[18] involved in delivering services to the jurisdiction. The department's primary management team includes a fire chief and three shift captains. An administrative assistant (shared 0.5 FTE) provides additional clerical and support services. Primary staffing coverage for emergency response is through the use of career firefighters on 24-hour shifts. For immediate response, a minimum of six personnel are on duty at all times.

As of the latest rating in December of 1995, the Insurance Services Office gave the service area a Public Protection Class rating of Class 4. During that classification review, the areas with the lowest scores relative to the maximum points available were: credit for engine companies, credit for ladder or service companies, credit for number of personnel, and credit for training. The relative class for the fire department was a Class 5, while the relative class for the community's water supply was a Class 2. As a result, the city received a divergence penalty of 6.22 percent and a resulting overall score of Class 4. Since this rating review is approximately 15 years old, the scores may not be consistent with how the department would be rated today.

The department provides fire suppression, emergency medical transport, vehicle extrication; operations-level hazmat; high-angle rescue; swift-water, ice, and underwater rescue; code enforcement; and public education. The Westshore regional hazardous materials and technical rescue response team provides additional technician-level hazmat and rescue functions.

The Westshore Central Dispatch Center (WestCom) provides emergency call receipt and dispatch service.

Westlake Fire Department

The Westlake Fire Department (WFD) is a direct operating department of the City of Westlake and provides fire protection and advanced life support (ALS) emergency medical transport services to the community. The response area includes both urban and suburban residential, commercial, and mixed-use developments of Cuyahoga County and is situated in the western suburbs of the Cleveland metropolitan area. The department began providing services in 1956.

[18] Current number at time of field research.

WFD provides emergency services to a population of 31,719[19] in an area of roughly 15.9 square miles. The area served by the department is experiencing light to moderate growth. In 2008, the U.S. Census estimated the population of Westlake to be 30,546, an increase from the 1990 census by approximately 13.0 percent. The department's services are provided from two facilities located within the jurisdiction. The department maintains a fleet of vehicles, including two fire engines, two aerial trucks, and four ambulances, along with specialty or utility units including a trench rescue supply trailer. No vehicles are available in reserve.

There are 50 individuals[20] involved in delivering services to the jurisdiction. The department's primary management team includes a fire chief, assistant chief, and three shift captains. Two administrative/clerical assistants provide additional support services. Primary staffing coverage for emergency response is through the use of career firefighters on 24-hour shifts. For immediate response, a minimum of seven personnel are on duty at all times.

As of the latest rating in June of 1993, the Insurance Services Office gave the service area a Public Protection Class rating of Class 4. During that classification review, the areas with the lowest scores relative to the maximum points available were credit for number of personnel and credit for training. The relative class for the fire department was a Class 5, while the relative class for the community's water supply was a Class 2. As a result, the city received a divergence penalty of 5.58 percent and a resulting overall score of Class 4. Since this rating review is over 16 years old, the rating scores within it may not be consistent with how the department would be rated today.

The department provides fire protection, emergency medical transport, vehicle extrication, operations-level hazmat, technician-level trench rescue, code enforcement, and public education. The Westshore regional hazardous materials and technical rescue response team provides additional technician-level hazmat and rescue functions.

The Westshore Central Dispatch Center (WestCom) provides emergency call receipt and dispatch service.

Figure 3 summarizes the organizational components of the seven agencies involved in this study.

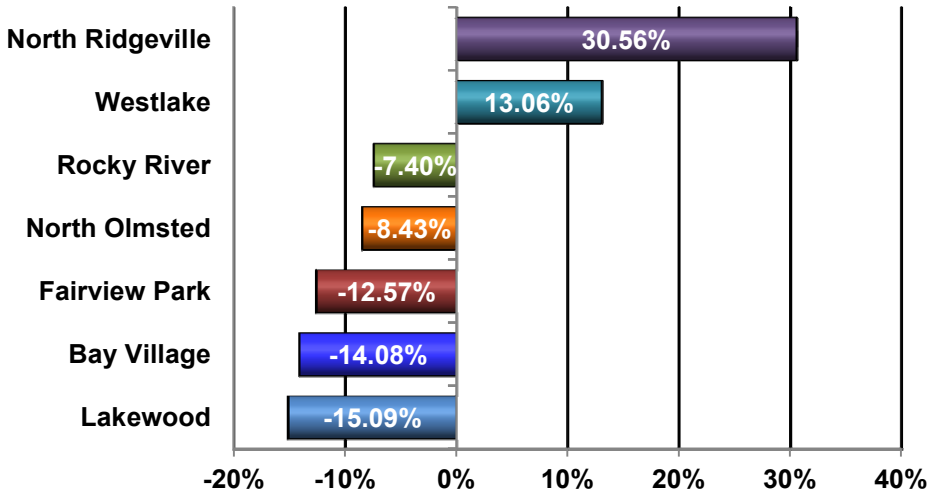
[19] U.S. Census Bureau, 2000 census data.
[20] Current number at time of field research.

Figure 3: Organizational Components Summary

Organizational Component	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Population	16,087	17,572	56,646	34,113	22,338	20,735	31,719
Service Area (Square Miles)	7.1	4.7	6.7	11.6	23.5	5.6	15.9
Fire Station	1	1	3	2	2	1	2
Engine	2	2	2	2	1	2	2
Aerial Device	1	1	1	1	2	1	2
Ambulance	2	2	5	3	4	3	4
Rescue				1			
Total Personnel	28	29	88	41	37	29	50
Minimum Staffing	5	6	20	8	8	6	7
ISO Rating	5	4	3	4	4	4	4
Dispatch Provider	WestCom	WestCom	LPD	NOPD	WestCom	WestCom	WestCom

The population figure in preceding table (Figure 3) is from the 2000 U.S. Census. In the next figure (Figure 4) we look at the historical change in population for each city between 1990 and 2008 and express it in percent of change.

Figure 4: Percentage of Population Change, 1990 – 2008



Population for the seven cities has decreased 4.02 percent between 1990 and 2008. The largest population increase by percentage was in North Ridgeville (30.56 percent); the greatest decrease in population occurred in Lakewood (15.09 percent).

Governance and Lines of Authority

Bay Village Fire Department

The City of Bay Village is a municipal corporation, formed under the laws of the State of Ohio, and operates as a charter city that is provided the authority to levy taxes for operating a fire protection system. The city operates under a Mayor-Council form of governance, and the City Council is provided with necessary power and authority to govern the provision of fire protection and emergency. The role and authority of the City Council and the Mayor/Safety Director is further clarified within city charter and ordinances and written policy documents describing their function and tasks. The City Council maintains strictly policy-level involvement, avoiding direct management and hands-on task assignment, an arrangement established within written policy.

The Fire Chief is an appointed employee with civil service protection under law. The Mayor/Safety Director does not currently provide any formal written evaluation of the Chief's services as a means of documenting performance and establishing personal objectives.

Fairview Park Fire Department

The City of Fairview Park is a municipal corporation, formed under the laws of the State of Ohio, and operates as a charter city that is provided the authority to levy taxes for operating a fire protection system. The City operates under a Mayor-Council form of governance, and the City Council is provided with necessary power and authority to govern the provision of fire protection and emergency services in the designated jurisdiction. The role and authority of the City Council and the Mayor/Safety Director is further clarified within city charter and written policy documents describing their function and tasks. The City Council maintains strictly policy-level involvement, avoiding direct management and hands-on task assignment, an arrangement established within written policy.

The Fire Chief is an appointed employee with civil service protection. The Fire Chief is not provided any formal written evaluation of his services.

Lakewood Fire Department

The City of Lakewood is a municipal corporation, formed under the laws of the State of Ohio, and operates as a charter city that is provided the authority to levy taxes for operating a fire protection system. The city operates under a Mayor-Council form of governance, and the City Council is provided with necessary power and authority to govern the provision of fire protection and emergency services in the designated jurisdiction. The role and authority of the City

Council and the Mayor/Safety Director (ex-officio) is further clarified within charter and ordinances and written policy documents describing their function and tasks. The City Council maintains strictly policy-level involvement, avoiding direct management and hands-on task assignment, an arrangement established within written policy.

The Fire Chief is an appointed employee with civil service protection under the city charter but is not provided with a personal services contract. The Mayor/Safety Director provides an annual formal written evaluation of the Chief's services as a means of documenting performance and establishing personal objectives.

North Olmsted Fire Department

The City of North Olmsted is a municipal corporation, formed under the laws of the State of Ohio, and operates as a charter city that is provided the authority to levy taxes for operating a fire protection system. The city operates under a Mayor-Council form of governance, and the City Council is provided with necessary power and authority to govern the provision of fire protection and emergency services in the designated jurisdiction. The role and authority of the City Council and the Director of Public Safety is further clarified within charter and ordinances and written policy documents describing their function and tasks. The City Council maintains strictly policy-level involvement, avoiding direct management and hands-on task assignment—an arrangement established within written policy.

The Fire Chief is an appointed employee with civil service protection under law and is not provided with a personal services contract. The Director of Public Safety provides an annual formal written evaluation of the Chief's services as a means of documenting performance and establishing personal objectives.

North Ridgeville Fire Department

The City of North Ridgeville is a municipal corporation, formed under the laws of the State of Ohio, and operates as a charter city that is provided the authority to levy taxes for operating a fire protection system.

The city operates under a Mayor-Council form of governance, and the City Council is provided with necessary power and authority to govern the provision of fire protection and emergency services in the designated jurisdiction. The role and authority of the City Council and the Safety/Service Director is further clarified within charter and ordinances and written policy documents describing their function and tasks. The City Council maintains strictly policy-level

involvement, avoiding direct management and hands-on task assignment, an arrangement established within written policy.

The Fire Chief is an appointed employee with civil service protection under law. The Safety/Service Director does not currently provide any formal written evaluation of the Chief's services as a means of documenting performance and establishing personal objectives.

Rocky River Fire Department

The City of Rocky River is a municipal corporation, formed under the laws of the State of Ohio, and operates as a charter city that is provided the authority to levy taxes for operating a fire protection system. The city operates under a Mayor-Council form of governance, and the City Council is provided with necessary power and authority to govern the provision of fire protection and emergency services in the designated jurisdiction. The role and authority of the City Council and the Director of Safety & Services is further clarified within charter and ordinances and written policy documents describing their function and tasks. The City Council maintains strictly policy-level involvement, avoiding direct management and hands-on task assignment, an arrangement established within written policy.

The Fire Chief is provided with civil service protection under law. The Director of Safety & Services does not currently provide any formal written evaluation of the Chief's services as a means of documenting performance and establishing personal objectives.

Westlake Fire Department

The City of Westlake is a municipal corporation, formed under the laws of the State of Ohio, and operates as a charter city that is provided the authority to levy taxes for operating a fire protection system. The city operates under a Mayor-Council form of governance, and the City Council is provided with necessary power and authority to govern the provision of fire protection and emergency services in the designated jurisdiction. The role and authority of the City Council and the Mayor/Safety Director is further clarified within city charter and ordinances and written policy documents describing their function and tasks. The City Council maintains strictly policy-level involvement, avoiding direct management and hands-on task assignment, an arrangement established within written policy.

The Fire Chief is an appointed employee with civil service protection under law. The Mayor/Safety Director provides an annual formal written evaluation of the Chief's services as a means of documenting performance and establishing personal objectives.

Foundational Policy

Organizations that operate efficiently are typically governed by clear policies that lay the foundation for effective organizational culture. These policies set the boundaries for both expected and acceptable behavior, while not discouraging creativity and self-motivation.

A comprehensive set of departmental operating rules and guidelines should contain at least two primary sections. The following format is suggested.

1. Administrative Rules – This section would contain all of the rules that personnel in the organization are required to comply with at all times. Administrative Rules, by definition, **require** certain actions or behaviors in all situations. The governing body should adopt or approve the Administrative Rules since the Chief is also subject to them. However, that body should then delegate authority to the Chief for their enforcement on department personnel. The Administrative Rules should govern **all** members of the department: paid, volunteer and civilian. Where rules and policies, by their nature, require different application or provisions for different classifications of members, these differences should be clearly indicated and explained in writing. Specifically the Administrative Rules should contain sections which address:
   - Public records access and retention
   - Contracting and purchasing authority
   - Safety and loss prevention
   - Respiratory protection program
   - Hazard communication program
   - Harassment and discrimination
   - Personnel appointment and promotion
   - Disciplinary and grievance procedures
   - Uniforms and personal appearance
   - Other personnel management issues

2. Standard Operating Guidelines (SOGs) – This section should contain "street-level" operational standards of practice for personnel of the department. SOGs are different from Administrative Rules in that variances are allowed in unique or unusual circumstances where strict application of the SOG would be less effective. The document should provide for a program of regular, systematic updating to assure it remains current, practical and relevant. SOGs should be developed, approved, and enforced under the direction of the Fire Chief.

The following tables provide a listing of topics that fire departments might wish to consider including in their Standard Operating Guidelines. Several model documents are available through industry trade organizations.

Figure 5: Typical SOG Topics for Field Operations

Alarms and Response Procedures	**Medical Emergencies**
Alarm Response Procedures	Operational Guidelines for Medical Aid Responses
Alarm Response Areas	Operations with Ambulance Personnel
Automatic Aid	Emergency Medical Technician - Defibrillator (EMT-D)
Mutual Aid	Major Medical Incidents
Contractual Agreements	Triage
Fire Company Operations	Exposure to Infectious Diseases and Hazardous Materials
Standard Company Operations	Suspected Drug Overdose
First to Arrive Duties	Animal Bites
Returning Companies to Service	Vial of Life and Medic Alert Tags
Use of Civilians	Attempted Suicide
Fire Scene Investigations	Suspected Homicide
High Volume Smoke Removal System	DOA (Dead on Arrival)
Personal Alert Safety Devices	Suspected Child Abuse
On-Scene Equipment Inventory	Suspected Sexual Assault
Personnel Accountability System	Hospital Disaster Notification
2 IN 2OUT	EMS Reports
Initial Fireground Operations	EMS Radio Procedures
Fluorescent Safety Vests	Drug Box Exchange Policy
Highway Incident Safety	BLS Rules and Regulations
Command Operations	ALS Rules and Regulations
General Strategic Guidelines	**Electrical Emergencies**
Incident Management System	Electrical Emergency Operations
Command Post Procedures	**Rescue Operations**
Welfare	Vehicle Rescue and Extrication
Helicopter Operations	Life Line Operations
Public health Considerations	Rescue from Machinery
Incident Critique	Escalator Emergencies
Area Evacuation	Elevator Emergencies
Incident Command Resource Request	Cave-in and Manhole Rescues
Building Evacuation	Building Collapse
Firefighting	Rescue at Structure Fires
Metal Fires	**Transportation Emergencies**
Structure Fires (General)	Interstate Operations
Operations in Sprinklered Buildings	Railroad Emergencies
On-Site Auxiliary Fire Equipment	Aircraft Emergencies
High Rise Fires	**Hazardous Materials Incidents**
Wildland Fires	Hazardous Materials (General)
Vehicle Fires	Flammable Fuel Spill (Liquid or Gas)
Fire Stream Management	LPG Emergencies
Industrial Dumpster Fires	Fumigation Emergencies
Fire Watch Detail	Explosives and Bombs
Fires in US Mailboxes	PCB's
University of Virginia Reactor Facility	Pesticide Procedures
High Rise Pack	Radioactive Materials
Bowstring Truss Roof - Operations Procedures	Natural Gas Filled Structures - No Fire
Carbon Monoxide Hazards	Natural Gas Fed Fire - Inside Structure
Thermal Image Camera	Broken Natural Gas Main - Fire
	Broken Natural Gas Main - No Fire

Figure 6: Typical SOG Topics for Non-Emergency Operations

Fire Station Operations	Color Coding Equipment
Station Operations - General	Radio Repair Procedure
Station Maintenance	Pressure Vessel Maintenance
Station Alerting System	Hose Maintenance
Purchasing Procedures	Self-Contained Breathing Apparatus (SCBA)
National Flag/National Anthem	Preventive Maintenance - SCBA's
Equipment Loan Out	Respiratory Breathing Air Systems
Yard Maintenance	Ladder Maintenance
Emergency Power Systems	Nozzle Maintenance
Miscellaneous Station Duties	Fire Extinguishers
Personal Locker Assignments	Hydrant Maintenance
Telephone Use	Hand Tool Maintenance
Station Libraries	Power Tool Maintenance
Scheduling Use of Media Center	Echo Chainsaw
Energy Conversation	Jonsered Chainsaw
Apparatus Operations	**Public Education**
Apparatus Maintenance	General Policy
Vehicle Out of Service Procedure	Public Education Scheduling Policy
Testing Apparatus Pumps	Public Relations
Driving Emergency Vehicles	Station Tours
Warning Devices	Fire Extinguisher Demonstrations
Apparatus Operational Limits	Engine Demonstrations
Fueling Procedure	Special Activities Engine - Engine One
Reserve Apparatus	Radio Controlled Education Robots
Apparatus Snow Chains	**Fire Prevention**
Apparatus Movement to Training Center	Fire Company Fire Prevention Inspections - General
Driver Operator - Pump Certification	Fire Prevention Inspection Guideline
Equipment Operations	Fire Investigation
Equipment Repairs	Related Codes
Equipment Out of Service	Pre-Fire Plans

Bay Village Fire Department

BVFD currently maintains five primary policy manuals: Policies and Procedures Manual, Rules and Regulations, City Employee Manual, EMS Protocols, and CBA (collective bargaining agreement).

The manuals were given a basic review for quality and content and were found to be fairly well organized; the documentation includes the appropriate policies either required by law or focused on reducing the risk of civil liability. These include a sexual harassment policy, family medical leave, and disciplinary policy. Other policies cover routine procedures.

The policies and procedures are reasonably well organized and reflect basic industry standards and best practices. The procedures are reported to be reasonably up to date, but no prescribed system is in place to review and update the procedures on a periodic basis. The procedures do not appear to contain adequate sections on emergency scene operations and may not provide

field personnel with sufficient guidance on fireground operations such as fire streams, pump operations, search procedures, evacuations, etc.

Following the recommended format noted earlier, the Policies and Procedures Manual should be expanded to include a greater collection of guidelines for actual incident actions, including special hazard incidents such as technical rescue, hazardous materials releases, etc.

Fairview Park Fire Department

FPFD maintains four primary policy manuals: Rules and Regulations, EMS Protocols, Standard Operating Guidelines, and the CBA.

The manuals were given a basic review for quality and content. The rules and regulations were reasonably well organized and included the appropriate policies either required by law or focused on reducing the risk of civil liability. These include a sexual harassment policy, family medical leave, and disciplinary policy. The document contains both a table of contents and a definitions page.

The Standard Operating Guidelines were not particularly well organized and contained an inadequate table of contents. The document mixes administrative policies with street-level procedures. The procedures are reported to be somewhat out of date with no prescribed system in place to review and update the procedures on a periodic basis. The procedures, many of which appear to have been written in a reactionary process, do not appear to contain adequate sections on emergency scene operations and may not provide field personnel with sufficient guidance on fireground operations. The Standard Operating Guideline Manual should be expanded to include a far greater collection of guidelines for actual incident actions, including special hazard incidents such as technical rescue, hazardous materials releases, etc.

Lakewood Fire Department

LFD maintains four primary policy manuals: General Orders, Administrative Work Rules, Human Resource Policies & Procedures Manual, and Special Orders.

The manuals were given a basic review for quality and content. They were fairly well organized, and documentation includes the appropriate policies either required by law or focused on reducing the risk of civil liability. These include a sexual harassment policy, family medical leave, and disciplinary policy.

The policies and procedures are well organized, easy to understand and apply, and reflect the current industry standards and best practices. The procedures are reported to be reasonably up to date, with a system in place to review and update the procedures on a periodic basis. The procedures contain adequate sections on emergency scene operations.

North Olmsted Fire Department

NOFD maintains three primary policy manuals: City Policies and Procedures, Emergency Operating Procedures, and Standard Operating Procedures.

The manuals were given a basic review for quality and content. The Standard Operating Procedures manual in this department is the document containing most administrative and non-emergency procedures. This document is fairly well organized, and it appears that a great deal of time went into writing the various policies and procedures in a professional and clear manner. Documentation includes the appropriate policies either required by law or focused on reducing the risk of civil liability. These include a sexual harassment policy, family medical leave policy, and disciplinary policy. Other policies cover routine procedures, complaint handling, orientation of new members, uniform use, etc.

The Emergency Operating Procedures is this agency's document containing street-level operating procedures. The document is well organized, easy to understand and apply, and reflects the current industry standards and best practices. The procedures are reported to be reasonably up to date, but there is no prescribed system in place to review and update the procedures on a periodic basis. The procedures contain adequate sections on emergency scene operations and provide field personnel with guidance on fireground operations such as fire streams, pump operations, search procedures, evacuations, etc., as well as special operations in designated response areas or locations, such as Interstate 480.

North Ridgeville Fire Department

NRFD maintains three primary policy manuals: Medical Protocols, Fire Department Rules and Regulations, and the Standard Operating Procedures.

The manuals were given a basic review for quality and content. The Rules and Regulations were fairly well organized, with both a table of contents and a definitions page. The documentation covers basic organizational information, a set of general policies, and regulations involving discipline, uniforms, and personal appearance. However, the document does not appear to include a sexual harassment policy or family medical leave policy.

The Standard Operating Procedures were not particularly well organized, lacking a table of contents and an index. Several different formats were found within the document. The procedures are reported to be somewhat out of date, with no prescribed system in place to review and update the procedures on a periodic basis. The procedures do not appear to contain adequate sections on emergency scene operations and provide field personnel with insufficient guidance on fireground operations such as fire streams, pump operations, search procedures, evacuations, etc.

The Standard Operating Procedures should be expanded to include a greater collection of guidelines for actual incident actions, including special hazard incidents such as technical rescue, hazardous materials releases, etc.

Rocky River Fire Department

RRFD maintains three primary policy manuals: the Fire Division Rules & Regulations, the City Employee Handbook, and the Fire Department Standard Operating Guidelines.

The manuals were given a basic review for quality and content. The Rules & Regulations were not particularly well organized, with no table of contents and no index. This document was only 15 pages long and appeared to lack a sexual harassment policy and a family medical leave policy, which are contained in the city's employee handbook; the disciplinary policy appeared to be inconsistent with the collective bargaining agreement.

The Standard Operating Guidelines were even shorter, at only ten pages, and contained no table of contents or index. They were not particularly well organized, and most were one or two sentences only. The document contains a mix of both administrative and emergency scene procedures. The procedures do not appear to contain adequate sections on emergency scene operations and provide field personnel with insufficient guidance on fireground operations such as fire streams, pump operations, search procedures, evacuations, etc.

The Standard Operating Guidelines should be expanded to include a greater collection of guidelines for actual incident actions, including special hazard incidents such as technical rescue, hazardous materials releases, etc.

Westlake Fire Department

WFD maintains one primary policy manual—the Fire Department Policies and Procedures. The manual was given a basic review for quality and content. The document was fairly well

organized, though because of its size it would benefit from a more detailed table of contents and index. The documentation includes appropriate policies regarding sexual harassment, family medical leave, and discipline. Other policies cover routine procedures, complaint handling, orientation of new members, uniform use, etc. The procedures are reported to be reasonably up to date, but no prescribed system is in place to review and update the procedures on a periodic basis.

Certain chapters of the procedures seem to be incomplete. They do not appear to contain adequate sections on emergency scene operations and provide field personnel with insufficient guidance on fireground operations such as fire streams, pump operations, search procedures, evacuations, etc.

The policies and procedures should be expanded to include a far greater collection of guidelines for actual incident actions, including special hazard incidents such as technical rescue, hazardous materials releases, etc.

Recommendation 1: Bay Village, Fairview Park, North Ridgeville, Rocky River, and Westlake should jointly complete a full revision of their policies and procedures. Routine (annual at a minimum) review and updates to policies should occur.
Recommendation 2: Given that Bay Village, Fairview Park, North Ridgeville, Rocky River, and Westlake Fire Departments protect similar risks, use similar resources, and have similar objectives, all five departments should consider the development of a regional set of Standard Operating Guidelines. Incorporate variations for local issues only where necessary to accommodate unique issues or equipment.

Organizational Design

A well-designed organizational structure should reflect the efficient assignment of responsibility and authority, allowing the organization to accomplish effectiveness by maximizing distribution of workload. The lines on an organizational chart simply clarify accountability, coordination, and supervision. Thorough job descriptions should provide the details of each position and ensure that each individual's specific role is clear and centered on the overall mission of the organization.

The organizational structure of the department should demonstrate a clear unity of command, in which each individual member reports to only one supervisor (within the context of any given position) and is aware to whom he or she is responsible for supervision and accountability. This

method of organization encourages structured and consistent lines of communication and prevents positions, tasks, and assignments from being overlooked. The overall goals and objectives of the organization can be more effectively passed down through the rank and file members in a consistent fashion.

The organizational structure should be charted with clear, designated operating divisions that permit the core functions of the organization to be the primary focus of specific supervisors and assigned members. While some task-level activities may carry over from division to division, the primary focus of leadership, management, and budgeting within the division should be clarified by the division's key function within the mission statement. Those individuals supervising or operating within a specific division must be positively clear as to the role of the division and its goals and objectives.

Each department should have sufficiently analyzed its mission and functions such that a resulting set of specific agency programs has been established. Organized, structured programs permit better assignment of resources, division of workload, development of future planning, and analysis of service delivery. Those departments that have clarified their programs with titles, assigned leadership, resources, budget appropriations, performance objectives, and accountability are among the most successful.

Bay Village Fire Department

A review of this BVFD's organizational chart reveals that it is organized in a typical top-down hierarchy. The organizational structure is charted with clear, designated operating divisions, and a resulting set of specific agency programs has been established. These various programs are assigned to shift personnel to carry out during their on-duty hours, leading to some inconsistency and lack of availability because of the nature of the 24-hour rotational shifts.

The fire chief directly supervises the three shift captains (which are the three shift lieutenants when they function in the role of shift captain) and the fire prevention lieutenant. The chief's span of control falls within the range typically considered normal and acceptable. The fire chief has been provided with the authority to initiate discipline that extends to a suspension with pay and/or recommendation of termination.

The department maintains inadequate job classifications and descriptions that consist only of a list of duties. These documents no longer accurately reflect the typical responsibilities and activities of all positions within the agency and should be revised to describe the primary

functions and activities, critical tasks, levels of supervision, and accountability, as well as reasonable qualifications of each class or position within the organization.

The department currently maintains collective bargaining agreements with IAFF Local 1144 for all positions below that of the fire chief.

Fairview Park Fire Department

A review of FPFD's organizational chart reveals that it is organized in a typical top-down hierarchy. The organizational structure is charted with clear, designated operating divisions; specific agency programs have been established, though the programs are said to be somewhat "informal". The programs are mostly assigned to shift personnel to carry out during their on-duty hours, leading to some inconsistency and lack of availability because of the nature of the 24-hour rotational shifts.

The fire chief appears to directly supervise four other individuals—the three captains and the administrative assistant. The chief's span of control falls within the range typically considered normal and acceptable. The fire chief has been provided with the authority to initiate disciplinary action within the confines of the processes established in the collective bargaining agreement.

The department maintains a thorough and up-to-date set of job classifications and descriptions that accurately reflect the typical responsibilities and activities of the positions. The documents adequately describe primary functions and activities, critical tasks, levels of supervision, and accountability, as well as reasonable qualifications.

The department currently maintains collective bargaining agreements with all employees except the fire chief.

Lakewood Fire Department

LFD is organized in a typical top-down hierarchy. The organizational structure is charted with clear, designated operating divisions, and specific agency programs have been established.

The chief appears to directly supervise six other individuals, including the three assistant chiefs, fire marshal, hazmat coordinator, and the on-duty paramedic supervisor. The chief's span of control falls within the range typically considered normal and acceptable. The fire chief has been provided with the authority to initiate discipline that extends to a suspension from duty.

The department maintains a thorough and up-to-date set of job classifications and descriptions that accurately reflect the typical responsibilities and activities of the positions. The documents adequately describe the primary functions and activities, critical tasks, levels of supervision, and accountability, as well as reasonable qualifications for each of the positions.

The department currently maintains collective bargaining agreements with all positions below that of fire chief.

North Olmsted Fire Department

NOFD's organizational chart shows that it is organized in a typical top-down hierarchy. The organizational structure is charted with clear, designated operating divisions, and a set of specific agency programs has been established.

The fire chief supervises five other individuals, including the captains and the administrative secretary. The chief's span of control falls within the range typically considered normal and acceptable. The fire chief has been provided with the independent authority to initiate discipline that extends to a written reprimand prior to involving others in the process.

The department maintains inadequate job classifications and descriptions (located in the SOP manual). They are basic lists of duties only and do not accurately reflect the typical responsibilities and activities of all positions within the agency. These documents should be revised to describe the primary functions and activities, critical tasks, levels of supervision, and accountability, as well as reasonable qualifications of each class or position within the organization.

The department currently maintains collective bargaining agreements (CBA) with all positions except fire chief and administrative secretary. Firefighters are represented by IAFF Local 1267.

North Ridgeville Fire Department

NRFD's organizational chart reveals that the department is organized in a typical top-down hierarchy. The organizational structure is charted with clear, designated operating divisions and a set of specific agency programs has been established.

The fire chief directly supervises the two assistant chiefs and the administrative assistant. The chief's span of control falls within the range typically considered normal and acceptable. The fire chief has been provided with the authority to initiate discipline that extends to termination, subject to appeal.

The department maintains a thorough and up-to-date set of job classifications and descriptions that accurately reflect the typical responsibilities and activities of the positions. The documents adequately describe the primary functions and activities, critical tasks, levels of supervision and accountability, as well as reasonable qualifications.

The department currently maintains collective bargaining agreements with classifications of employees at the rank of captain and below. Operations personnel are represented by IAFF Local 2129, and the administrative assistant is represented by AFSCME.

Rocky River Fire Department

A review of RRFD's organizational chart reveals that it is organized in a typical top-down hierarchy. The organizational structure is charted with clear, designated operating divisions; specific agency programs have been established.

The fire chief directly supervises five other individuals, including the fire prevention officer, shift captains, and the administrative assistant. The chief's span of control falls within the range typically considered normal and acceptable. The fire chief has been provided with the authority to initiate discipline that extends to a written reprimand.

The department recently updated a set of job classifications and descriptions that accurately reflect the typical responsibilities and activities of the positions. These documents are awaiting approval.

The department currently maintains collective bargaining agreements with all positions except the chief and administrative assistant.

Westlake Fire Department

A review of WFD's organizational chart reveals that the department is organized in a typical top-down hierarchy. The organizational structure is charted with clear, designated operating, and a set of specific agency programs has been established.

The fire chief directly supervises the assistant chief, the fire marshal, and the administrative assistant. The chief's span of control falls within the range typically considered normal and acceptable. The fire chief has been provided with the authority to initiate discipline that extends to a limited-length suspension.

The department maintains a somewhat outdated set of job classifications and descriptions that may not accurately reflect the typical responsibilities and activities of the positions.

The department currently maintains collective bargaining agreements with all positions at the rank of captain and below. The Fire Prevention Secretary is also covered by a CBA.

Recommendation 3: Bay Village, North Olmsted, and Westlake fire departments should review and revise job descriptions and classifications for accuracy and relevancy.
Recommendation 4: Each agency should review and update job classifications and descriptions. Job descriptions should accurately reflect typical responsibilities and activities of the position; include required and desired qualifications and physical requirements.

Financial Overview (Finance and Budget)

The financial overview will provide the reader with background information on the budget, funding, fees, taxation, financial resources, and cost recovery efforts of the seven fire departments. Financial comparisons between the agencies as well as regional and national comparators will be presented. This information will be the basis for the financial analysis.

Budget Process

The cities use similar budgeting practices following Ohio Revised Code for Municipal Corporations.[21] In each city the finance director is the fiscal officer with one exception, North Ridgeville. The mayor of North Ridgeville is the fiscal officer of the city.

Each city in this study uses a one-year cycle to plan operating budgets based on a fiscal year coinciding with the calendar year (January 1 through December 31). Administration of the budget is the responsibility of the director of finance in each city except North Ridgeville, where the mayor serves as the City's Chief Fiscal Officer. Title [7] VII MUNICIPAL CORPORATIONS

Audits and Financial Reporting

Financial audits are most accurately described as an examination of financial statements. In this case, they are a review of the municipal financial statements that result in the publication of an independent opinion on whether they are relevant, accurate, complete, and fairly presented. Audits are designed to reduce the possibility of a material misstatement. Misstatements are defined as false, misleading, or missing information, whether caused by fraud (including deliberate misstatement) or error.

[21] Ohio Revised Code, Title [7] VII Municipal Corporations.

Finance directors in each city make a monthly financial report for their council of year-to-date expenditures compared to budget and benchmark the percentage of budget used. The finance director of Westlake also prepares a weekly financial report for city directors.

Bay Village

An independent auditor's report of the City of Bay Village of the financial activities prepared for fiscal year ending December 31, 2008, was issued on June 25, 2009.[22] In a letter dated July 14, 2009, the Auditor of State accepted the reports in lieu of the audit required by Section 117.11 of the Ohio Revised Code.

Fairview Park

A Comprehensive Annual Financial Report (CAFR) for the fiscal year ending December 31, 2008, was prepared by the finance director and department of finance of the City of Fairview Park. It includes an independent auditor's report of the financial statements and governmental activities, business-type activities, major fund, and fund balance information of the city. Results of the audit conducted by the Auditor of State are reported in a letter dated August 27, 2009.

Lakewood

A Comprehensive Annual Financial Report for the fiscal year ending December 31, 2008, was prepared by the City of Lakewood Department of Finance. It includes an independent auditors' report of the financial statements and governmental activities, business-type activities, major fund, and fund balance information of the city. Results of the audit conducted by the Auditor of State are reported in a letter dated June 25, 2009.

North Olmsted

A Comprehensive Annual Financial Report for the fiscal year ending December 31, 2008, was prepared by the City of North Olmsted director and assistant director of finance. It includes an independent auditors' report of the financial statements and governmental activities, business-type activities, major fund, and fund balance information of the city. Results of the Independent Auditors' Report, conducted by Ciuni & Panichi Inc. (dated August 21, 2009) are included in the CAFR.

[22] Independent Auditors' Report, City of Bay Village, Ohio, Ciuni & Panichi Inc., LLC, June 25, 2009.

North Ridgeville

A Comprehensive Annual Financial Report for the fiscal year ending December 31, 2008, was prepared by the City of North Ridgeville Auditor's Office. It includes an independent auditor's report of the financial statements and governmental activities, business-type activities, major fund, and fund balance information of the city. Results of the audit conducted by the Auditor of State are reported in a letter dated June 19, 2009.

Rocky River

A Comprehensive Annual Financial Report for the fiscal year ending December 31, 2008, was prepared by the City of Rocky River Director of Finance. It includes an independent auditors' report of the financial statements and governmental activities, business-type activities, major fund, and fund balance information of the city. Results of the Independent Auditors' Report, conducted by Ciuni & Panichi Inc. dated August 31, 2009, are included in the CAFR.

Westlake

A Comprehensive Annual Financial Report for the fiscal year ending December 31, 2008, was prepared by the City of Westlake director and assistant director of finance. It includes an independent auditor's report of the financial statements and governmental activities, business-type activities, major fund, and fund balance information of the city. Results of the audit conducted by the Auditor of State are reported in a letter dated June 6, 2009.

The cities of Fairview Park, Lakewood, North Olmsted, North Ridgeville, Rocky River, and Westlake were recipients of a Certificate of Excellence in Financial Reporting for their Comprehensive Annual Financial Reports presented by the Government Finance Officers Association (GFOA) for the year 2007. The Certificate Program, established in 1945, recognizes excellence in financial reporting by state and local governments.[23] It serves as a catalyst encouraging and assisting state and local governments to go beyond the minimum requirements of generally accepted accounting principles (GAAP) to prepare CAFRs with transparency and full disclosure and recognize individual government agencies that succeed in achieving that goal.

Kudos 1: Fairview Park, Lakewood, North Olmsted, North Ridgeville, Rocky River, and Westlake were recipients of a Certificate of Excellence in Financial Reporting for their CAFRs presented by the GFOA for the year 2007.

[23] Government Finance Officers Association, Certificate of Achievement for Excellence in Financial Reporting (CAFR Program), Award Winners For Fiscal Years Ended In 2007.

Revenue History and Funding

Revenue for fire and rescue (EMS) for each of the fire departments is received through the general revenue of the cities. The two principal categories of municipal revenue for each city are program and general revenue. Sub-categories including property and personal income tax, charges for service, fines, licenses, permits, intergovernmental, and investment income comprise the revenue sources. The percentage and amount in each category varies among the seven cities, but each receives a significant portion of their revenues from these sources.

The following table summarizes the revenue source and amount for the seven cities for the fiscal year ending December 31, 2008.[24]

[24] Source: Ohio Auditor of State, Audit Archives, fiscal year ending 12/31/2008.

Figure 7: General Revenue, Fiscal Year 2008[25]

City of Bay Village		City of Fairview Park	
General Revenue		**General Revenue**	
Property Taxes	$6,656,527	Property Taxes	$3,613,333
Income Taxes	5,463,871	Income Taxes	7,467,534
Grants, Entitlements, Estate	2,489,837	Franchise	162,682
Investment Income	547,489	Grants, Entitlements, Estate	2,115,947
Other	279,433	Investment Income	242,022
		Other	174,594
Total	**$15,437,157**	**Total**	**$13,776,112**
City of North Olmsted		**City of North Ridgeville**	
General Revenue		**General Revenue**	
Property and other local Taxes	$5,230,229	Property Taxes	$3,613,333
Municipal Income Taxes	8,976,411	Income Taxes	7,467,534
Charges for Service	1,003,163	Grants, Entitlements, Estate	162,682
Fines, Licenses, and Permits	1,041,734	Other	2,115,947
Intergovernmental	3,588,812		
Investment Income	255,452		
Miscellaneous Income	1,204		
Total	**$20,097,005**	**Total**	**$15,779,865**
City of Lakewood		**City of Rocky River**	
General Revenue		**General Revenue**	
Property Taxes	$13,275,148	Property Taxes	$6,941,765
Payment in Lieu of Taxes	340,341	Income Taxes	8,673,869
Income Taxes	19,348,017	Franchise	207,503
Grants, Entitlements, Estate	5,668,748	Admission Taxes	36,715
Investment Income	533,257	Grants, Entitlements, Estate	4,156,898
Miscellaneous	550,472	Investment Income	516,771
		Miscellaneous	466,811
Total	**$39,715,983**	**Total**	**$21,000,332**
City of Westlake			
General Revenue			
Property Taxes	$12,100,495	Grants and Entitlements	4,282,803
Income Taxes	18,825,927	Franchise Taxes	438,367
Admission Taxes	197,798	Investment Income	2,877,142
Hotel Taxes	457,987	Other	687,619
		Total	**$39,868,138**

The total revenue for the seven cities in fiscal year 2008 was approximately $166 million, with 66.85 percent from property and income tax (32.09 percent from property tax and 34.76 percent from income tax).

[25] Figures are presented using modified accrual basis of accounting. The City of Lakewood uses cash basis accounting.

Funding

A major source of general fund revenue for the Westshore cities is property tax. Property taxes include amounts levied against all real, public utility, and tangible personal property located in the municipality. In the State of Ohio annual real property taxes are levied after October 1 on the assessed value as of January 1, the lien date. Assessed values are established by State law at 35 percent of appraised market value. Real property taxes are collected in and intended to finance the fiscal year for which they are assessed.

The amount levied is the year following the assessed value; 2009 assessed values will be collected in 2010. Real property taxes are payable annually or semi-annually. If paid annually, the payment is due December 31; if paid semi-annually, the first payment is due December 31 with the remainder payable by June 20.

In June 2005 the State of Ohio enacted legislation (portions of which take effect at various times) that phases out the taxation of tangible personal property used in business (other than certain public utility tangible personal property) over three years from tax year 2006 through tax year 2008. To compensate local government units for the foregone revenue, the legislation provided for distributions from revenue generated by a newly enacted commercial activities tax.

To compare current revenue and to gauge future revenue from property taxes, ESCI reviewed the historical assessed valuation, tax values, true values, tax rates, and taxes levied. Figure 8 shows the historical total assessed valuations for the tax years 1999 through 2009.

Figure 8: Historical Total Assessed Valuations, Tax Years 1999 – 2009

Year	Bay Village	Fairview Park	Lakewood	North Olmsted
1999	360,478,069	346,111,224	723,953,648	736,690,212
2000	405,579,495	382,719,583	814,852,502	814,643,897
2001	405,637,982	378,340,608	810,424,493	816,537,342
2002	405,370,246	374,457,849	804,897,929	813,790,056
2003	457,551,595	394,305,078	907,188,349	860,962,435
2004	458,589,141	395,053,219	902,343,245	865,359,676
2005	461,318,366	382,199,851	899,711,471	871,003,233
2006	514,132,530	411,709,698	985,986,951	935,651,977
2007	514,931,710	409,141,121	982,852,083	922,029,166
2008	507,773,300	414,373,730	975,998,080	910,324,211
2009	496,661,640	381,788,200	907,929,130	839,002,040
Year	**North Ridgeville**	**Rocky River**	**Westlake**	
1999	361,860,630	525,945,084	993,779,072	
2000	376,589,994	599,842,962	1,133,645,351	
2001	430,844,030	607,061,271	1,173,030,296	
2002	446,688,410	601,948,652	1,188,846,372	
2003	467,411,050	658,964,762	1,271,722,672	
2004	518,707,270	657,747,760	1,296,663,187	
2005	557,079,074	657,024,990	1,319,931,318	
2006	585,525,803	723,419,816	1,444,205,326	
2007	671,789,866	721,977,182	1,430,452,109	
2008	697,214,164	724,866,570	1,423,263,526	
2009	721,597,166	693,135,430	1,364,439,460	

The total assessed value of the seven cities in fiscal year 2009 was approximately $5.4 billion, a decrease of 4.41 percent from 2008 ($5.7 billion). With the exception of 2009, each of the seven cities has seen increases in assessed valuation during the 11-year period.

Figure 9 shows the estimated true value of the seven cities during the nine-year period 1999 through 2007.

Figure 9: Historical True Values, 1999 – 2007

Year	Bay Village	Fairview Park	Lakewood	North Olmsted
1999	1,020,665,834	990,083,293	2,074,174,692	2,134,587,905
2000	1,153,750,074	1,096,574,947	2,336,830,047	2,363,919,251
2001	1,154,090,011	1,087,977,662	2,333,644,585	2,378,947,722
2002	1,154,548,523	1,075,117,558	2,314,427,496	2,366,397,804
2003	1,301,022,613	1,128,740,724	2,675,007,075	2,496,152,470
2004	1,303,131,159	1,128,177,219	2,584,999,785	2,515,866,435
2005	1,316,012,779	1,100,785,552	2,598,833,719	2,585,657,226
2006	1,464,662,941	1,191,608,008	2,873,808,361	2,851,415,477
2007	1,490,008,449	1,215,014,066	2,954,642,885	3,015,125,405
Year	**North Ridgeville**	**Rocky River**	**Westlake**	
1999	1,031,596,139	1,505,319,457	2,889,807,342	
2000	1,074,055,052	1,715,872,375	3,297,565,954	
2001	1,231,657,858	1,742,429,456	3,425,853,709	
2002	1,286,821,152	1,725,664,166	3,468,907,465	
2003	1,344,577,949	1,888,240,222	3,694,842,061	
2004	1,488,225,996	1,880,244,283	3,763,294,482	
2005	1,599,671,672	1,887,575,985	3,906,906,504	
2006	1,670,592,239	2,106,070,593	4,385,098,487	
2007	1,911,959,413	2,160,525,296	4,633,503,272	

The estimated true value of the seven cities was approximately $17.4 billion in 2007.

As required by the Ohio Revised Code, the Cuyahoga County Auditor's office establishes a market value for all properties in the county. Property taxes are calculated using three factors:

1. Value of the property as determined by the County Auditor.
2. Tax rate established in each community.
3. Any tax reductions, credits and rollbacks established by Ohio law.

A formula is used to arrive at the actual tax that is paid by property owners. Assessed property value = 35 percent of appraised property value, as determined by the Cuyahoga County Auditor. (The auditor appraises all property at 100 percent of its market value every six years and makes an interim update on the third year after each reappraisal. The auditor sets the "assessed value" at 35 percent of that appraised market value). The auditor's office then computes real estate taxes by first multiplying the assessed value (35 percent of market value)

by the total tax rate of the city in which the property is located.[26] Figure 10 shows the historical property tax rate for the cities from 2000 to 2008.

Figure 10: Historical Real Property Tax Rates, 2000 – 2008

Year	Bay Village	Fairview Park	Lakewood	North Olmsted	North Ridgeville	Rocky River	Westlake
2000	14.90	11.80	17.30	12.70	13.71	9.90	7.80
2001	14.90	11.80	17.30	13.70	13.56	9.90	7.60
2002	14.90	11.80	17.30	13.60	13.41	9.90	7.60
2003	14.90	11.80	17.40	13.60	13.41	9.90	7.60
2004	14.90	11.80	17.40	13.30	13.36	10.90	7.40
2005	14.90	11.80	17.40	13.30	13.56	10.90	10.10
2006	14.90	11.80	17.40	13.20	13.36	10.90	10.00
2007	14.90	11.80	17.40	13.20	13.06	10.90	9.90
2008	14.90	11.80	17.40	13.20	12.95	10.90	9.80

Some change of property tax rates for the cities has occurred during the recent nine-year time frame.

Figure 11 lists the property tax allocation by fund and the total mill levy for each city for fiscal year 2010.

Figure 11: Property Tax Allocation, Fiscal Year 2010

	Bay Village	Fairview Park	Lakewood	North Olmsted	North Ridgeville	Rocky River	Westlake
General Fund	8.50	8.33	8.65	6.40		6.90	7.60
Bond Retirement	3.89		3.47	5.10		1.00	0.70
EMS/Paramedic	1.41						
Capital Improvement		0.87				1.00	
Recreation	0.50	1.00		1.20		0.50	
Police Pension	0.30	0.30	1.64	0.30			0.30
Fire Pension	0.30	0.30	1.64	0.30			0.30
Senior Center						0.50	
Refuse/Recycling						1.00	
Police /Fire Operations		1.00					0.90
WWTP			2.00				
Total	**14.90**	**11.80**	**17.40**	**13.30**		**10.90**	**9.80**

[26] Mill: one mill = an annual tax of $1.00 per $1,000 of assessed property value.

Figure 12 shows the dollar amount of taxes levied by the seven cities from 2000 through 2008 and the percent of change over the nine-year time period.

Figure 12: Total Property Taxes Levied by Year, 2000 – 2008

Year	Bay Village	Fairview Park	Lakewood	North Olmsted	North Ridgeville	Rocky River	Westlake
2000	6,043,134	4,516,091	14,096,948	9,724,311	2,699,276	5,206,856	7,751,477
2001	6,044,006	4,464,419	14,020,344	10,753,299	3,188,394	5,938,445	8,615,705
2002	6,040,017	4,418,603	13,924,734	10,859,947	3,210,629	6,009,907	8,915,030
2003	6,817,519	4,652,800	15,785,077	10,823,408	3,340,366	5,959,292	9,035,232
2004	6,832,978	4,661,628	15,700,772	11,709,089	3,559,588	7,182,716	9,410,748
2005	6,873,644	4,509,958	15,654,980	11,768,892	4,068,985	7,169,451	13,096,298
2006	7,660,575	4,858,174	17,156,173	11,932,744	5,815,123	7,161,572	13,199,313
2007	7,672,482	4,827,865	17,101,626	11,882,780	5,900,481	7,885,276	14,297,633
2008	7,565,822	4,889,610	16,982,367	11,709,770	6,084,330	7,869,551	14,018,431
% Change	**25.20%**	**8.27%**	**20.47%**	**20.42%**	**125.41%**	**51.14%**	**80.85%**

The amount of revenue generated from property taxes has increased appreciably for most of the cities during the nine-year period. The amount of taxes levied by the cities has increased between 8 percent (8.27) to approximately 125 percent (125.41).

Income Tax

Several types of revenues fund governmental activities, with city income tax being the biggest or one of the biggest contributors. Income tax rates and credit to residents employed in cities that have a municipal income tax vary. A synopsis of municipal income tax by each city follows.

Bay Village

Due to virtually all Bay Village being residential (97 percent) with only a modest commercial and industrial tax base, there is a reliance on taxes from residents to generate the majority of revenue. Bay Village receives 0.5 percent in income tax from most residents who work outside of the city. The total income tax rate in the city is 1.5 percent.

With a higher percentage of housing there is a greater reliance on property taxes. According to the city, in 1998 over 95 percent of the real estate assessed value in Bay Village was residential property; compared to an average of 66 percent for Cuyahoga County.

Fairview Park

Fairview Park levies an income tax of 2 percent on all income earned within the city as well as income of residents earned outside the city. In the latter case, the city allows a credit of 75 percent of the tax on the income earned outside the city and paid to another municipality to a

maximum of the total amount assessed with a limit to the credit of 1.25 percent. The Regional Income Tax Agency (RITA) administers and collects income taxes for the city. Employers within the city are required to withhold income tax on employee earnings and remit the tax to RITA at least quarterly.

Lakewood

Lakewood levied an income tax rate of 1.5 percent in 2008. The city's income tax is levied upon the net income of corporations and other business entities and on wages, salaries, and other personal service compensation earned. Both residents and non-residents who work inside the city are subject to the income tax. However, residents of the city are granted a credit for income taxes paid to other municipalities to a maximum of one-half of 1 percent of income earned outside the city.

North Olmsted

North Olmsted levies and collects an income tax of 2 percent on all income earned within the city as well as income of residents earned outside the city. The city allows a credit of 100 percent of the tax paid to another municipality (not to exceed the amount owed). The Regional Income Tax Agency administers and collects income taxes for the city. Employers within the city are required to withhold income tax on employee earnings and remit the tax to RITA at least quarterly. Corporations and other individual taxpayers are also required to pay their estimated tax at least quarterly and file an annual return.

North Ridgeville

North Ridgeville levies an income tax of 1 percent on substantially all income earned within the city. In addition, residents are required to pay city income tax on income earned outside the city with a certain credit for income taxes paid to other municipalities (generally 10 percent of the tax due to the other municipality). This tax is collected and administered by the city. Employers within the city are required to withhold income tax on employee compensation and remit at least quarterly. Corporations and other individual taxpayers are also required to pay their estimated taxes at least quarterly and file a final return annually.

Rocky River

Rocky River levies a municipal income tax of 1.5 percent on substantially all income earned within the city. Additionally, residents of the city are required to pay city income tax on income earned outside the city; however, a credit is allowed for income taxes paid to other

municipalities, reducing the effective tax rate to 0.5 percent for such earnings. Employers within the city are required to withhold income tax on employee earnings and remit the tax to RITA at least quarterly. Corporations and other individual taxpayers are also required to pay their estimated tax at least quarterly and file an annual return. Corporations and other individual taxpayers are required to pay their estimated tax quarterly and file a declaration annually. All income tax monies are credited to the general fund.

Westlake

Westlake levied a municipal income tax rate at 1.5 percent for 2008, the same as the prior year. Both residents of the city and non-residents who work inside the city are subject to the income tax. However, if residents work in a locality that has a municipal income tax, the City provides 100 percent credit up to 1.5 percent for those who pay income tax to another city. The RITA administers and collects income taxes for the city. Employers within the city are required to withhold income tax on employee earnings and remit the tax to the RITA at least quarterly. Payments from RITA are remitted monthly to the city less a collection fee of 3 percent.

The following table (Figure 13) lists by city the fund allocation by percentage of municipal income tax revenue for fiscal year 2010.

Figure 13: Municipal Income Tax Distribution, Fiscal Year 2010

	Bay Village	Fairview Park	Lakewood	North Olmsted	North Ridgeville	Rocky River	Westlake
General Fund	94%	62.5%	100%	70%	Not to exceed 85%	100%	67%
Equipment Replacement	4%	0.0%			At least 15%		
Accrued Benefits	2%	0.0%					
Street Improvement		12.5%		15%			
Recreation		25.0%					8%
Infrastructure							25%
Solid Waste/Recycling				15%			
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Cost Recovery Efforts

Occasionally, fire departments will operate from multiple funds in addition to the general fund. These funds are dedicated cost recovery or revenue sources that receive funding from services such as a dedicated tax, ambulance transport fees, fire and life safety plans review, and fire and

life safety inspections. Cost recovery, like other revenue sources, provides another measure of stability.

Some revenue can be gleaned from response to hazardous materials incidents, where *spiller pays* laws often require that departments are reimbursed for their mitigation efforts. However, this is typically limited to actual documented expenditures and, with the exception of very busy hazardous materials teams, provides little in the way of a predictable revenue stream.

A number of fire departments have initiated billing for fire suppression responses, primarily to insured structures.[27] However, most insurance carriers provide very limited coverage for such fees, thus the revenue is rarely worth the political and public relations challenges or administrative efforts to collect it.[28] As a result, many such efforts have failed.

Aside from ambulance transport fees, code enforcement efforts often provide the most reliable, consistent, and predictable sources of revenue. Many communities have established a fee ordinance for their code enforcement division which initiates billing for everything from routine inspections to licenses and plan review. Code enforcement fees such as this can be based on occupancy type (reflecting the relative complexity of the inspection), while plan review fees are often based on the square footage of the structure reviewed.

A list of typical non-tax revenue sources include:

- Ambulance (EMS transport) service fees
- Medicare reimbursement
- Contract for services, fire protection
- Fire inspection permit fees
- Licenses
- Fire and life safety plans reviews
- Federal forestry and wildlife protection
- Fire suppression services
- Hazardous materials mitigation
- Standby services

[27] *Fire Departments Turn To 'Crash Tax' For Budget*, Brian Maass, Denver (CBS4), March 31, 2009.
[28] "*A Crash. A call for Help. Then a Bill.*," Christopher Jensen, *New York Times*, September 3, 2010

Each of the seven fire departments has some level of fees for service. A summary fee schedule is provided in the next table.

Figure 14: Summary Table of Fees for Service

Bay Village	Fairview Park	Lakewood	North Olmsted	North Ridgeville	Rocky River	Westlake
Fees for Service						
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ambulance Billing Fee Structure						
$450 BLS $550 ALS 1 $650 ALS 2	$450 BLS $550 ALS 1 $650 ALS 2 One way mileage $10 per mile	$450 BLS $500 ALS 1 $550 ALS 2 $6.50 per mile Oxygen $20	$450 BLS $550 ALS 1 $600 ALS 2	$375 BLS $475 ALS	$450 BLS $550 ALS 1 $650 ALS 2	$450 BLS $550 ALS 1 $650 ALS 2
Billing for Fire Response						
No	No	No	No	No	No	No
Fire and Life Safety Inspection Fee						
Yes, fire department conducts inspections, no fees charged for services	Not available	No, being billed through the building department	No, being billed through the building department	No	No	No
Fee for Hazardous Materials						
Yes, regional resources (The hazardous materials unit is located in one of the six cities on a rotation basis)	Yes, regional resources (The hazardous materials unit is located in one of the six cities on a rotation basis)	Yes, regional resources (The hazardous materials unit is located in one of the six cities on a rotation basis)	Yes, regional resources (The hazardous materials unit is located in one of the six cities on a rotation basis)	(Lorain County) Yes, county resources	Yes, regional resources (The hazardous materials unit is located in one of the six cities on a rotation basis)	Yes, regional resources (The hazardous materials unit is located in one of the six cities on a rotation basis)
Recovery Outside of City						
No	No	No	Follow billing practices of the community where they respond	No	Bill for EMS transport on mutual aids same as inside the City	
Event Stand-by Charges						
No	Yes	Yes, parades and for sporting events	No	Yes	Yes, sporting events	Yes

Bay Village

Non-tax revenue for the Bay Village Fire Department in 2009 consisted of ambulance billings. A total of $268,000 in revenue was budgeted for fiscal year 2009.

Fairview Park

Non-tax revenue for the Fairview Park Fire Department is listed in Figure 15.

Figure 15: FPFD Non-Tax Revenue, 2006 – 2009

Year	Ambulance Billing	Donations	Grants	Photocopies	FEMA Reimbursements	Total
2006	246,327	240	0	0	0	246,567
2007	250,972	0	424	0	0	251,396
2008	291,902	200	3,500	7	57,489	353,098
2009	300,000	200	5,600	11	0	305,811

Between 2006 and 2009 non-tax revenue for the Fairview Park FD has increased 24.03 percent.

Lakewood

Non-tax revenue for the Lakewood Fire Department is listed in Figure 16. The dollar amount for fiscal year 2009 is based on the budgeted revenue.

Figure 16: LFD Non-Tax Revenue, 2005 – 2009

Year	Misc.	Ambulance Billing	Community Insurance	Medicaid	Medicare	Anthem Health	Total
2005	4	957,604	0	0	0	0	957,608
2006	3	985,272	0	0	0	0	985,275
2007	-1,609	507,692	57,836	72,555	401,875	2,166	1,040,514
2008	-752	511,993	654	2,683	364,561	87,994	967,133
2009	0	550,000	8,000	64,000	400,000	90,000	1,112,000

Non-tax revenue for the LFD has increased approximately 16.12 percent over five years.

North Olmsted

Figure 17 shows the non-tax revenue related to the North Olmsted Fire Department. The hotel/motel tax (transient occupancy tax [TOT]) and false alarm fees are shared between the police and fire department.

Figure 17: NOFD Non-Tax Revenue, 2005 – 2009

Year	Ambulance Billing Resident	Ambulance Billing Non-resident	TOT	False Alarm	Total
2005	345,000	100,000	300,000	5,000	750,000
2006	380,000	120,000	300,000	1,500	801,500
2007	357,000	130,000	260,000	7,000	754,000
2008	325,000	100,000	250,000	7,000	682,000
2009	515,000	100,000	280,000	5,000	900,000

The non-tax revenue for the NOFD has increased approximately 20.00 percent between 2005 and 2009.

North Ridgeville

For fiscal year 2009 a total of $541,756 in non-tax revenue was budgeted for the North Ridgeville Fire Department. Revenue was made up of ambulance billings of $533,227 and interest income of $8,529.

Rocky River

Rocky River Fire Department reported a single source budgeted for non-tax revenue in fiscal year 2009. Actual non-tax revenue for fiscal year 2009 was $405,815 in ambulance billings.

Westlake

Non-tax revenue related to the Westlake Fire Department is shown in Figure 18. For fiscal years 2009 and 2010 the amounts are budgeted; amounts for prior years reflect actual revenue. Revenue for the dispatch center is not included in the table.

Figure 18: WFD Non-Tax Revenue, 2006 – 2010

Year	Ambulance Billing	Donations	Grants	Fire Inspection	False Alarm	Total
2006	0	0	303,542	18,420	0	321,962
2007	0	55	2,257	16,906	200	19,418
2008	513,843	780	0	19,181	2,400	536,204
2009	720,000	1,000	1,700	18,000	100	740,800
2010	860,000	1,000	0	10,000	0	871,000

Non-tax revenue for the WFD increased approximately 170.53 percent from fiscal year 2006 to 2010 because of billing for EMS services.

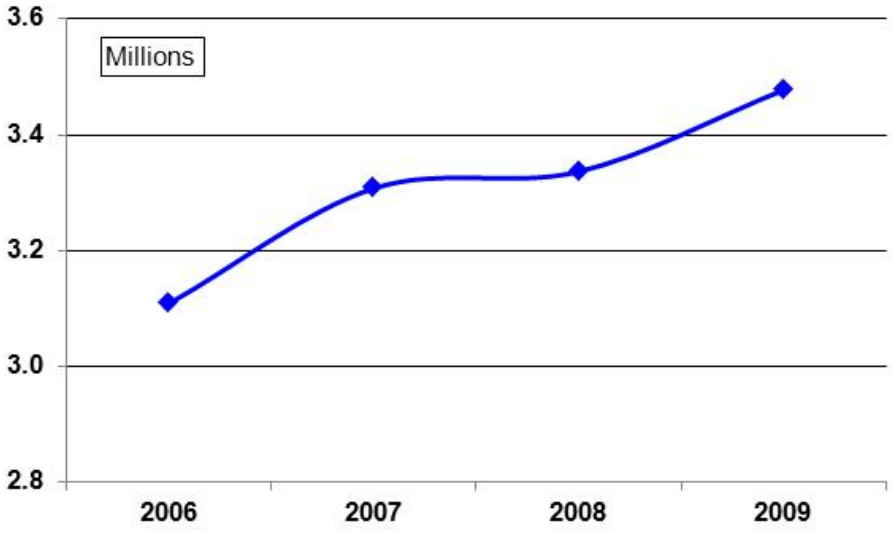
Expenditures

The next series of figures show the historical annual expenditure information provided by the seven fire departments.[29] Amounts for fiscal year 2009 are based on estimates and fiscal year 2010 on budgeted amounts. Annual expenditures are inclusive of personnel services, materials and services, and capital outlay.

Bay Village

Bay Village is similar to the other cities in not charging a municipal overhead or fleet rental fees, but it does account for fuel used by fire department apparatus. Figure 19 includes the expenditures charged to the BVFD for the fiscal years 2006 through 2009.

Figure 19: BVFD Annual Expenditures, 2006 – 2009



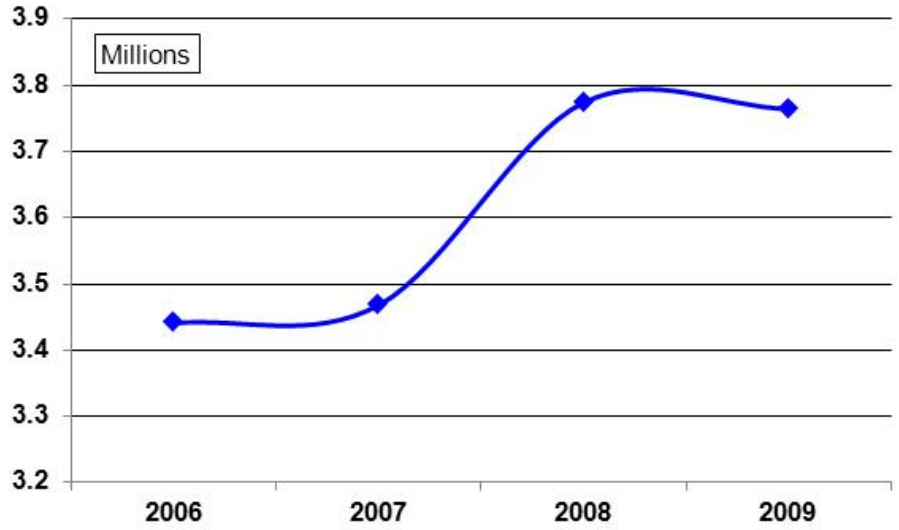
Annual increases in expenditures averaged 3.94 percent between 2006 and 2009.

[29] Note: The number of years of historical financial data varies according to the data provided by each city.

Fairview Park

Figure 20 illustrates the expenditures charged to the FPFD for the fiscal years 2006 - 2009.

Figure 20: FPFD Annual Expenditures, 2006 – 2009

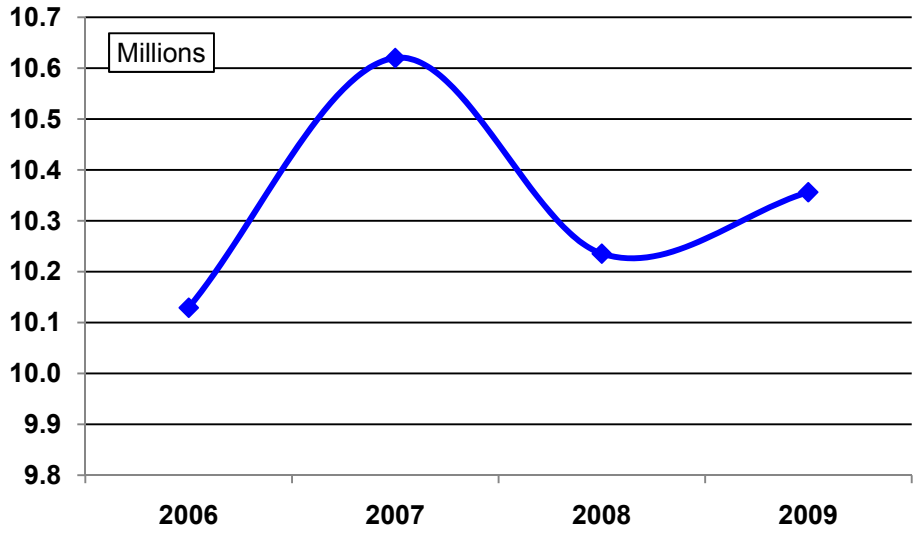


Annual increases in expenditures averaged 2.81 percent between 2006 and 2009.

Lakewood

Figure 21 are the expenditures charged to the LFD for the fiscal years 2006 through 2009.

Figure 21: LFD Annual Expenditures, 2006 – 2009

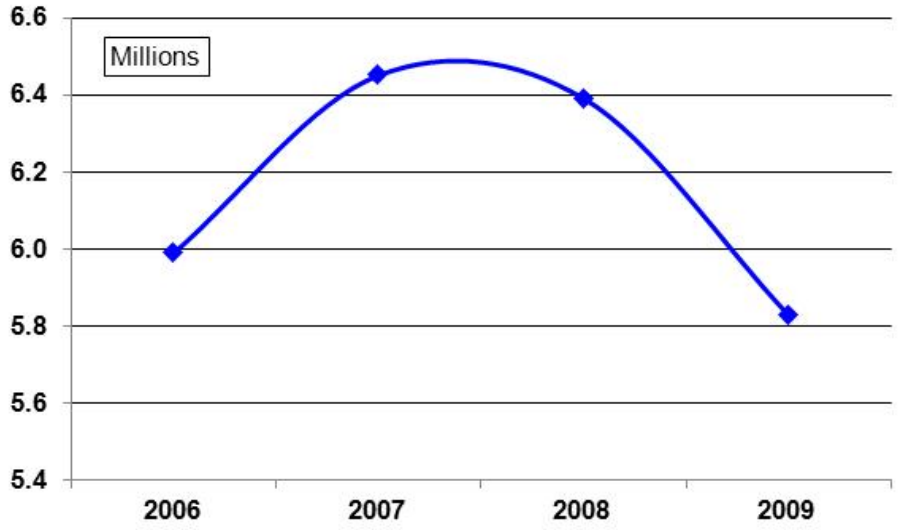


Expenditures have increased an average of 0.75 percent annually between 2006 and 2009.

North Olmsted

Figure 22 are the expenditures charged to the NOFD for the fiscal years 2006 through 2009.

Figure 22: NOFD Annual Expenditures, 2006 – 2009

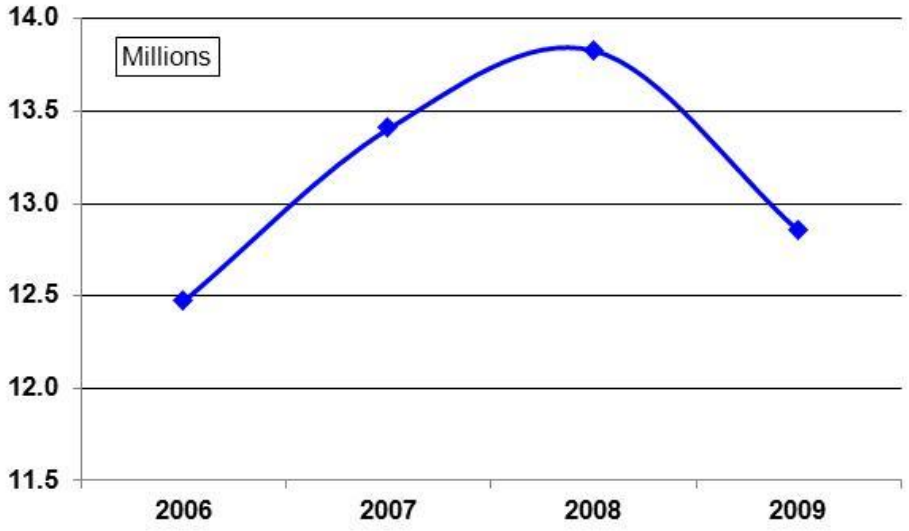


Expenditures over the four–year period have increased at an annual average of 1.15 percent.

North Ridgeville

The expenditures charged to the NRFD for the fiscal years 2006 through 2009 (Figure 23) are exclusive of the cost associated with the dispatch center.

Figure 23: NRFD Annual Expenditures, 2006 – 2009

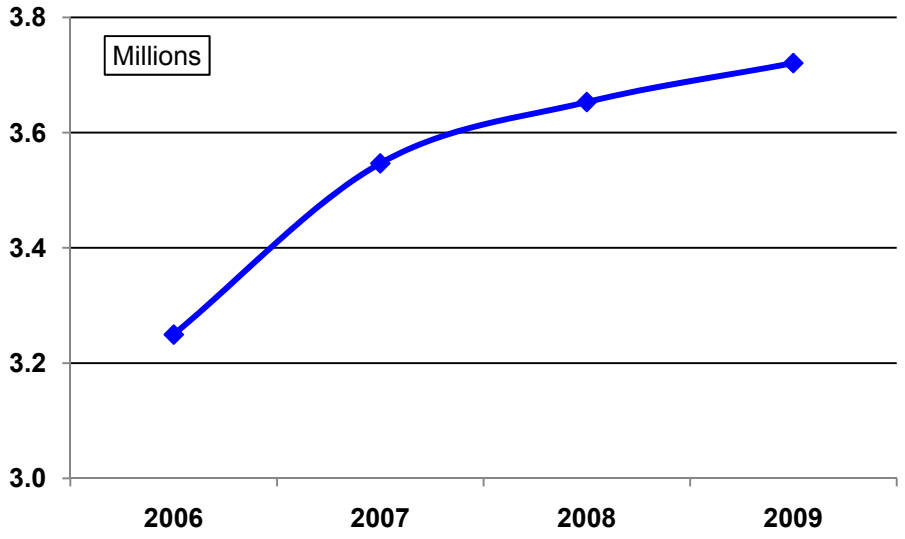


Expenditures over the reporting period have increased at an annual average of 1.02 percent.

Rocky River

Expenditures by the RRFD for the fiscal years 2006 through 2009 are shown in Figure 24.

Figure 24: RRFD Annual Expenditures, 2006 – 2009

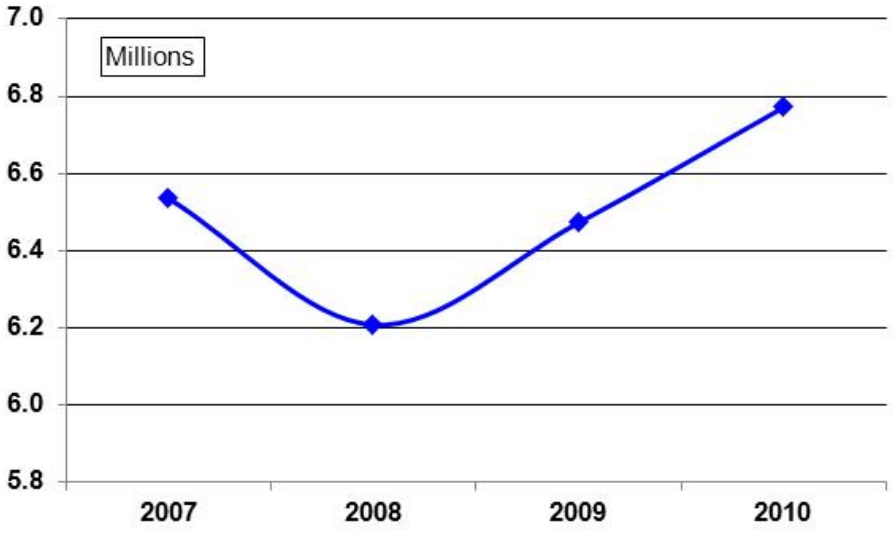


Expenditures over the four-year period from 2006 to 2009 have increased at an annual average of 4.83 percent.

Westlake

Expenditures by the WFD for the fiscal years 2007 through 2010 are shown in Figure 25. For fiscal year 2009, the dollar amount is estimated;for fiscal year 2010 the budgeted amount was used.

Figure 25: WFD Annual Expenditures, 2007 – 2010



Annual expenditures by the Westlake FD have increased by an average of 1.21 percent between 2007 and 2010.

Pension Plans

Fire pension funds are required by Ohio Revised Code Chapter 742. Creation and purpose of the police and fire pension fund is found in ORC 742.02:

> *There is hereby created an Ohio police and fire pension fund for the purpose of providing disability benefits and pensions to members of the fund and their surviving spouses, children, and dependent parents.*

The cities contribute to the Ohio Police and Fire Pension Fund (OP&F), a cost-sharing multiple-employer defined benefit pension plan. OP&F provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. OP&F issues a publicly available financial report that includes financial information and required supplementary information for the plan. The Ohio Police and Fire Pension Fund ratio of assets

to actual accrued liability at year end in 2009 was 65.07 percent, a decrease from 81.68 percent in 2008.[30]

Plan members are required to contribute 10 percent of their annual covered salary to fund pension obligations. The cities contributed 24 percent in 2008 for firefighters. Contribution rates are established by State statute. For 2008, a portion of each city's contribution equal to 6.75 percent of covered payroll was allocated to fund the post-employment health care plan.

The cities contribute to the Ohio Police and Fire Pension Fund (OP&F) sponsored healthcare program, a cost-sharing multiple-employer defined post-employment healthcare plan administered by OP&F. OP&F provides healthcare benefits, including coverage for medical, prescription drugs, dental, vision, Medicare Part B Premium reimbursement, and long-term care to retirees, qualifying benefit recipients, and their eligible dependents.

OP&F provides access to post-retirement healthcare coverage for any person who receives or is eligible to receive a monthly service, disability, or survivor benefit or is a spouse or eligible dependent child of such person.

The Ohio Revised Code allows but does not mandate OP&F to provide OPEB (Other Post Employment Benefits). Authority for the OP&B Board of Trustees to provide healthcare coverage to eligible participants and to establish and amend benefits is codified in Chapter 742 of the Ohio Revised Code.

[30] 2009 CAFR, Ohio Police and Fire Pension Fund, for the year ending December 31, 2009.

Management Components

As with most emergency service agencies, the study area fire departments face challenges to organizational growth and management. In addition to the continuing growth of workload, the management of resources always presents unique issues involving the consistency and adequacy of response, maintenance of competencies, and recruitment of future workforce. This section of the report examines these departments' efforts in this area and preparation for the future health of the organization.

Mission, Vision, Strategic Planning, Goals and Objectives

The process of strategic planning involves clarifying an organization's mission, articulating its vision for the future, and specifying the values within which it will conduct itself. A departmental strategic plan, when developed, should include an organizational mission statement, vision, and values. Service delivery goals should be developed and objectives defined for accomplishment of the goals. Critical tasks and timelines for accomplishment should also be produced. This effort is clearly important to the future of any fire and emergency services system.

Bay Village Fire Department

This agency has not fully conducted formal strategic planning processes. BVFD does not have an adopted mission statement, and no clear organizational vision for the future has been developed. Member value statements do not exist, nor are goals and objectives formally established to direct organizational effort.

Fairview Park Fire Department

This agency has not fully conducted formal strategic planning processes. FPFD does have an adopted mission statement, but no clear organizational vision for the future has been developed. Member value statements do not exist, nor are goals and objectives formally established to direct organizational effort.

Lakewood Fire Department

This agency has not fully conducted formal strategic planning processes. LFD does have an adopted mission statement, but no clear organizational vision for the future has been developed. Member value statements do not exist, nor are goals and objectives formally established to direct organizational effort.

North Olmsted Fire Department

This agency has not fully conducted formal strategic planning processes. NOFD does have an adopted mission statement, but no clear organizational vision for the future has been developed. Member value statements do not exist, nor are goals and objectives formally established to direct organizational effort.

North Ridgeville Fire Department

The NRFD has completed a strategic planning process that involved various members of the organization charting a clear direction for its future. The department's mission statement is valid and up to date. Officers involved in this process identified strategic initiatives for a five and ten-year period.

Rocky River Fire Department

This agency has not fully conducted formal strategic planning processes. RRFD does not have an adopted mission statement, and no clear organizational vision for the future has been developed. Member value statements do not exist, nor are goals and objectives formally established to direct organizational effort.

Westlake Fire Department

The WFD has completed a strategic planning process but involved only the fire chief of the organization in the process of charting a clear direction for its future. The department's mission statement is valid and up to date, and goals and objectives have been articulated in writing.

Recommendation 5: All seven fire departments should conduct strategic planning processes that include department and community stakeholders in the process of reviewing and revising mission statements, determining organizational vision, and the developing goals and objectives.

Critical Issues and Future Challenges

It is extremely important that there be a clear understanding of critical issues facing the departments. Without such an understanding, department leadership cannot be prepared to face these issues. In addition, the enunciation of critical issues to employees and members increases their awareness of the organization's priorities and assists them in becoming focused on solutions.

As with critical issues, it is important for any agency to have an appropriate level of future thinking. This permits an agency to identify what external challenges may present themselves

to the organization in the coming years. This awareness of future challenges ensures that the department does not miss out on opportunities or blindly stumble into crises unprepared.

A further exploration of critical issues and future challenges should be completed during strategic planning processes; but for now, these are items that have been identified by the officers of the departments as issues with significant potential for impacting the success of the organizations and the effectiveness of their service in the future.

Bay Village Fire Department

Critical Issues:

- Regional (western suburbs) EMS service demand drains fire suppression resources on an increasing basis.
- Lack of any administrative or support staffing causes inconsistency in day-to-day administrative tasks.
- Need to grow and maintain a progressive and adequate training program inclusive of all skill sets.
- Succession planning and officer development due to anticipated turnover of personnel through retirement.
- Need to prepare capital planning for eventual station renovation/replacement and apparatus replacement.

Future Challenges:

- Operational challenges and morale issues related to potential staffing reductions.
- Need to expand regional cooperation and realization that the system is very interdependent.

Fairview Park Fire Department

Critical Issues:

- Organizational consistency across all three shifts.
- Need for improved and expanded training program.
- Lack of officer development and succession planning.

Future Challenges:

- Adequate and sustainable financial support for all services.
- Ability to provide comprehensive training for all functions.
- Need for more formal and structured processes throughout the organization to ensure consistent quality.

Lakewood Fire Department

Critical Issues:

- Antiquated records management system in disarray.
- Insufficient administrative and support staffing mean details don't always get covered.
- Maintaining an adequate and comprehensive training program within tight fiscal constraints.

Future Challenges:

- Regional and city demographic changes and population migration with associated fiscal impact.
- Recruitment and retention of quality workforce.
- Aging structures and resulting code enforcement/prevention issues.

North Olmsted Fire Department

Critical Issues:

- Difficult relationship between labor and management/city officials is siphoning time and energy from core services.
- Decrease in staffing presents significant challenge in meeting critical tasks and service demand.
- Morale problems resulting from internal conflict and staff reductions.

Future Challenges:

- Adequate and sustainable funding necessary to maintain current levels of service to the citizens.
- Maintaining current service levels in the face of various external challenges.
- Succession planning and leadership development.

North Ridgeville Fire Department

Critical Issues:

- Living conditions of Fire Station No. 1 and inadequate space.
- Maintaining adequate staffing to meet increasing service demand.
- Travel distances to heavy service demand in northeast quadrant.

Future Challenges:

- Inadequate number and distribution of facilities to meet expanding development.
- Future staffing needs associated with additional facilities and service demand.
- Upgrading the operating guidelines and ensuring consistency between three shifts.

Rocky River Fire Department

Critical Issues:

- Sustaining sufficient funding to maintain effective operations for service demand and structure risks.
- Maintaining progressive attitudes of workforce toward safety.
- Providing sufficient, progressive, and comprehensive training programs within budget and overtime constraints.

Future Challenges:

- Potential to promote residential sprinklers in redevelopment and new construction.
- Expansion of individual capabilities through expanded training and personnel development opportunities.
- Officer development training and succession issues related to future retirements.

Westlake Fire Department

Critical Issues:

- Maintaining adequate staffing levels to meet demand and structure risks.
- Maintaining a high-quality, comprehensive, and progressive training program.
- Maintaining the second truck apparatus.

Future Challenges:

- Response time impacts brought on by development in remote areas of city distant from current fire stations.
- Adequate staffing to accommodate increase in service demand as city fully develops and builds out.
- Sustainability of adequate funding to accommodate effective operations.

Internal and External Communications

Quality communication is an achievable goal for any organization, but one that always seems to be most elusive. Regularly scheduled meetings permit management personnel to openly exchange ideas on a regular basis, share issues and concerns, apply creative teambuilding and problem-solving, and improve the overall flow of communications. Distributed minutes or summaries of regular staff meetings encourages internal communications and permits members to share ideas on issues involving departmental issues, enhancing a feeling of empowerment among personnel. Written, formal memorandums ensure that all members receive critical data

in an organized and consistent fashion. This process also provides a critical written record of internal communications that are important to organizational efficiency. Employee and community newsletters can foster improved relations with internal and external stakeholders.

To their credit, there are established communication processes within each of these departments that provide opportunities for department personnel to be heard and be involved and for information to be exchanged with the public.

Bay Village Fire Department

Regular quarterly staff meetings have been initiated in this agency and include all captains and lieutenants. Minutes or summaries of regular staff meetings are made available or distributed for personnel review.

Written, formal memorandums are regularly utilized for distribution of information. A systematic method for distribution of written communications is in place and is followed regularly in order to make certain that no members are left out of the information loop. When certain types of critical memos or policies are released, a system has been established for verification of the distribution to all personnel.

Open personnel meetings or forums are rarely held for the purpose of exchanging and discussing concerns, ideas, or issues directly with management staff. An employee/member newsletter has been initiated for distribution of agency news and information, as well as less formal information about members.

Departmental bulletin boards are adequately controlled and organized, with information being sorted and updated on a regular basis.

Departmental business email addresses have been issued to all personnel, offering an efficient and verifiable method of information distribution. Individual member mailboxes or fire station/shift mailboxes are used to exchange important hard-copy documents. Voicemail has also been put in place for all personnel, permitting other members or the external customer to efficiently and quickly leave personal contact messages.

The city publishes a community newsletter for distribution to the public on an occasional basis. The newsletter permits the release of information, authored directly by the agency, to those served by its programs. No formal procedure has been established for handling complaints from the public.

Although currently being addressed, an active and useful website is not maintained. The website should be kept up to date and provides contact information for major programs operated by the department.

On occasion, the city has distributed a questionnaire intended to provide customer feedback on service priorities, quality issues, or performance efforts.

Fairview Park Fire Department

Between four and six officers' meetings are held annually in this agency and include all primary staff and officers. Minutes or summaries of regular staff meetings are made available or distributed for review by all members of the organization, unless appropriate privacy is necessary.

Written, formal memorandums are regularly utilized for distribution of information. A systematic method for distribution of written communications is in place and is followed regularly in order to make certain that no members are left out of the information loop. When certain types of critical memos or policies are released, a system has been established for verification of the distribution to all personnel.

Aside from occasional union meetings, open personnel meetings or forums are rarely held for the purpose of exchanging and discussing concerns, ideas, or issues directly with management staff. An employee/member newsletter has been initiated by the city, providing an excellent opportunity for distribution of agency news and information, as well as less formal information about members.

Departmental bulletin boards are adequately controlled and organized, with information being sorted and updated on a regular basis.

Departmental business email addresses have been issued to a limited number of personnel. Some staff members are forced to use personal email addresses for departmental business and others use very little email. This consistent and verifiable means of information distribution is an accepted means of information exchange in this day and age and should be encouraged. Individual member mailboxes or fire station/shift mailboxes are used to exchange important hard-copy documents. Voicemail is not currently available for primary staff and officers.

The department has not published a community newsletter for distribution to the public. No formal procedure has been established for handling complaints from the public.

An active and useful website is currently maintained. The site is kept up to date and provides contact information for major programs operated by the department.

The department has not yet used a public survey to provide customer feedback on service priorities, quality issues, or performance efforts.

Lakewood Fire Department

Quarterly staff meetings have been initiated in this agency and include all primary staff and officers. The meetings are held by shift rather than collectively in order to avoid overtime costs. Minutes or summaries of regular staff meetings are made available or distributed for review by all members of the organization, unless appropriate privacy is necessary.

Written, formal memorandums are regularly utilized for distribution of information. A systematic method for distribution of written communications is in place and is followed regularly in order to make certain that no members are left out of the information loop. When certain types of critical memos or policies are released, a system has been established for verification of the distribution to all personnel.

Aside from occasional union meetings, open personnel meetings or forums are rarely held for the purpose of exchanging and discussing concerns, ideas, or issues directly with management staff. An employee/member newsletter has been initiated by the city, providing an excellent opportunity for distribution of agency news and information, as well as less formal information about members.

Departmental bulletin boards are adequately controlled and organized, with information being sorted and updated on a regular basis.

Departmental business email addresses have been issued to all officers, offering an efficient and verifiable method of information distribution. Individual member mailboxes or fire station/shift mailboxes are used to exchange important hard-copy documents and prevent missing or misplaced documents. Voicemail has been put in place for primary staff and officers, permitting other members or external customers to efficiently and quickly leave personal contact messages.

The city publishes a community newsletter for distribution to the public on an occasional basis. The newsletter permits the release of information, authored directly by the agency, to those served by its programs. A formal procedure has been established for handling complaints from

the public and is intended to make certain such complaints are handled consistently, quickly, and with due process.

An active and useful website is currently maintained and provides an additional means of distributing information and communicating with the public. The site is kept up to date and provides contact information for major programs operated by the department.

On occasion, the city has used a public survey to solicit customer feedback on service priorities, quality issues, or performance efforts.

North Olmsted Fire Department

Weekly staff meetings have been initiated in this agency and include all primary staff and shift officers. The meetings are held by shift in order to avoid overtime costs. Minutes or summaries of regular staff meetings are made available or distributed for review by all members of the organization, unless appropriate privacy is necessary.

Written, formal memorandums are regularly utilized for distribution of information. A systematic method for distribution of written communications is in place and is followed regularly in order to make certain that no members are left out of the information loop. When certain types of critical memos or policies are released, a system has been established for verification of the distribution to all personnel. This system provides a record of confirmation that the information was received and improves accountability.

Weekly officer meetings are open to all employees, providing personnel with an opportunity or forum for exchanging and discussing concerns, ideas, or issues directly with management personnel. No employee/member newsletter has been initiated.

Bulletin board space is available but is not well organized or controlled. Observations indicated that information is often out of date or difficult to find. Regular organization and control of departmental bulletin board space can improve the usefulness of this information tool.

Departmental business email addresses have been issued to a limited number of personnel. Some staff members are forced to use personal email addresses for departmental business and others use very little email. This consistent and verifiable means of information distribution and should be encouraged. Individual member mailboxes or fire station/shift mailboxes are used to exchange important hard-copy documents and prevent missing or misplaced documents.

Voicemail has been put in place for primary staff and officers permitting other members or the external customer to efficiently and quickly leave personal contact messages.

The city publishes a community newsletter for distribution to the public on an irregular basis. However, the fire department does not regularly participate in authoring materials for inclusion in this publication. No formal procedure has been established for handling complaints from the public. Such a policy should be established and all members should be made familiar with its contents in order to make certain such complaints are handled consistently, quickly, and with due process.

An active and useful website is currently maintained, providing an additional means of distributing information and communicating with the public. The site is kept up to date and provides contact information for major programs operated by the department.

On occasion, the department has distributed post-response customer surveys or questionnaires intended to collect customer feedback on service priorities, quality issues, or performance efforts. The city has also conducted a community-wide survey in the past.

North Ridgeville Fire Department

Regular monthly staff meetings have been initiated in this agency and include all primary staff and officers. Minutes or summaries of regular staff meetings are made available or distributed for review by all members of the organization, unless appropriate privacy is necessary.

Written, formal memorandums are regularly utilized for distribution of information. A systematic method for distribution of written communications is in place and is followed regularly in order to make certain that no members are left out of the information loop. When certain types of critical memos or policies are released, a system has been established for verification of the distribution to all personnel. This system provides a record of confirmation that the information was received and improves accountability.

An annual labor-management member meeting, sponsored by the union, is conducted to provide personnel with an opportunity or forum for exchanging and discussing concerns, ideas, or issues directly with management personnel. An employee/member newsletter has been initiated and provides an opportunity for distribution of agency news and information, as well as less formal information about members.

Bulletin board space is available but is not well organized or controlled. Observations indicated that information is often out of date or difficult to find. Regular organization and control of departmental bulletin board space can improve the usefulness of this information tool.

Departmental business email addresses have been issued to appropriate personnel, offering an efficient and verifiable method of information distribution. Individual member mailboxes or fire station/shift mailboxes are used to exchange important hard-copy documents and prevent missing or misplaced documents. Voicemail has been put in place for primary staff and officers, permitting other members or the external customer to efficiently and quickly leave personal contact messages.

The city publishes a community newsletter for distribution to the public on an occasional basis. The newsletter permits the release of information, authored directly by the agency, to those served by its programs. No formal procedure has been established for handling complaints from the public. Such a policy should be established and all members should be made familiar with its contents in order to make certain such complaints are handled consistently, quickly, and with due process.

An active and useful website is currently maintained. The site is kept up to date and provides contact information for major programs operated by the department.

The department and city have not yet used a public survey to provide customer feedback on service priorities, quality issues, or performance efforts.

Rocky River Fire Department

Staff meetings involving primary management staff and officers are not consistently held in the agency. Some members suggested staff meetings had not been formally conducted for several years. This approach encourages a crisis-mentality that does not build daily teamwork and problem-solving. Minutes or summaries of any such staff meetings are not regularly made available or distributed for review by all members of the organization.

Written, formal memorandums are regularly utilized for distribution of information. A systematic method for distribution of written communications is in place and is followed regularly in order to make certain that no members are left out of the information loop. When certain types of critical memos or policies are released, a system has been established for verification of the

distribution to all personnel. This system provides a record of confirmation that the information was received and improves accountability.

Aside from occasional union meetings, open personnel meetings or forums are rarely held for the purpose of exchanging and discussing concerns, ideas, or issues directly with management staff. No employee/member newsletter has been initiated

Departmental bulletin boards are adequately controlled and organized, with information being sorted and updated on a regular basis.

Departmental business email addresses have been issued to several of the department personnel, offering an efficient and verifiable method of information distribution. Individual member mailboxes or fire station/shift mailboxes are used to exchange important hard-copy documents and prevent missing or misplaced documents. Voicemail has been put in place for primary staff and officers, permitting other members or the external customer to efficiently and quickly leave personal contact messages.

The city has not published a community newsletter for distribution to the public on any kind of regular schedule. However, the city does have an email list server that sends information to city residents that sign up for the service. The city website is also updated with information releases on a regular basis. No formal procedure has been established for handling complaints from the public. Such a policy should be established and all members should be made familiar with its contents in order to make certain such complaints are handled consistently, quickly, and with due process.

An active and useful website is currently maintained by the city. The site is kept up to date and provides contact information for major programs operated by the department.

The department has not yet used a public survey to provide customer feedback on service priorities, quality issues, or performance efforts.

Westlake Fire Department

Regular staff meetings have been initiated in this agency and include the assistant chief and captains. The meetings are held by shift in order to avoid overtime costs. Minutes or summaries of regular staff meetings are made available or distributed for review by all members of the organization, unless appropriate privacy is necessary.

Written, formal memorandums are regularly utilized for distribution of information. Such correspondence is posted and reviewed during shift changes as a means of distribution. When certain types of critical memos or policies are released, a system has been established for verification of the distribution to all personnel. This system provides a record of confirmation that the information was received and improves accountability.

Aside from occasional union meetings, open personnel meetings or forums are rarely held for the purpose of exchanging and discussing concerns, ideas, or issues directly with management staff. An employee/member newsletter has been initiated and provides an opportunity for distribution of agency news and information, as well as less formal information about members.

Departmental bulletin boards are adequately controlled and organized, with information being sorted and updated on a regular basis.

Departmental business email addresses have been issued to personnel, offering an efficient and verifiable method of information distribution. Individual member mailboxes or fire station/shift mailboxes are used to exchange important hard-copy documents and prevent missing or misplaced documents. Voicemail is not currently available.

The city publishes a community newsletter for distribution to the public on an occasional basis. The newsletter permits the release of information, authored directly by the agency, to those served by its programs. No formal procedure has been established for handling complaints from the public. Such a policy should be established and all members should be made familiar with its contents in order to make certain such complaints are handled consistently, quickly, and with due process.

An active and useful website is currently maintained as an additional means of distributing information and communicating with the public. The site is kept up to date and provides contact information for major programs operated by the department.

On occasion, the Westlake Mayor has conducted a public survey to solicit customer feedback on service priorities, quality issues, or performance efforts.

Recommendation 6: Rocky River FD should establish a schedule of regular staff/officers' meetings to review current issues, perform team problem-solving, and review progress on department goals and objectives.

Recommendation 7: North Olmsted and Rocky River FDs consider the use of an employee newsletter to improve both formal and informal communication and social interaction.
Recommendation 8: North Olmsted and North Ridgeville FDs should establish policies and procedures for maintaining bulletin board space to ensure important information is readily identifiable.
Recommendation 9: Fairview Park, Lakewood, North Olmsted, and Rocky River FDs should issue and use departmental e-mail for all staff.
Recommendation 10: Fairview Park and Westlake FDs should make voicemail services available to key officers.
Recommendation 11: The cities of Fairview Park, North Olmsted, and Rocky River should consider a regular community newsletter containing information authored by their respective city departments.
Recommendation 12: The cities of Fairview Park, North Ridgeville, and Rocky River should occasionally use customer survey instruments to collect input on concerns and priorities from citizens. Information can be used to direct fire department planning processes.
Recommendation 13: Bay Village, Fairview Park, North Olmsted, North Ridgeville, Rocky River, and Westlake FDs should establish a formal, written process for documenting and handling complaints from the public.

Document Control and Security

A variety of uses are made of written records and their integrity must be protected. For ambulance service providers, the Health Insurance Portability and Accountability Act (HIPAA) include regulations that require all individually identifiable health care information be protected to ensure privacy and confidentiality when stored, maintained, or transmitted. These fire departments also have a significant investment in facilities, apparatus, equipment and other items, along with its financial assets. Protecting these records and assets is very important.

Bay Village Fire Department

Clear written procedures are in place to provide for public records access through the department staff. Paper records (hard copy files) are inadequately secured. Security of these files should be improved through the increased use of passage and/or container locks with limited access. Important computer files are backed-up to a secure data location on a regular and consistent basis.

The fire station is reported to be consistently locked and secure from unauthorized entry. Public access to the buildings is limited to business areas or when accompanied by an employee. Locks are changed occasionally to prevent orphan keys and unauthorized entry. No security alarm system is used to provide for automatic notification of unauthorized entry or break-in. A

monitored fire alarm system provides early smoke and fire detection for buildings, as well as an additional life-safety measure for occupants in the event of a fire.

Department computers are programmed with password security on sensitive file access and software to provide an additional level of security and data integrity. Firewall protection is in place for computers accessing the internet and other outside servers. The protection is adequately up to date and capable of preventing most unauthorized network intrusions. Up-to-date virus protection software is utilized on all incoming email, and files or operating systems are regularly scanned for undetected virus infection.

The agency maintains a current inventory of capital assets whose value is in excess of a specified dollar value. A process is in place to maintain this inventory and new assets are logged and recorded at purchase. No business-related cash is routinely kept on the premises of the department. Petty cash is available for use by key managers, but even tightly controlled petty cash systems can pose problems in loss, theft, or accountability. The department may wish to eliminate this practice in favor of rapid reimbursement systems or use-controlled credit cards. General-use credit cards, such as VISA™ or MASTERCARD™, are issued to key managers; strict account controls, low credit limits, and zero liability fraud protection are in place. Written, formal purchasing policies and procedures are in place and are strictly enforced. Virtually all purchases require specific purchase orders (POs) with appropriate approval signatures and appropriation verifications.

The BVFD has a HIPAA compliance officer in place and strict policies to guide compliance. Efforts to access response records containing protected medical information are strictly controlled and require appropriate identification of the purposes involved in such access.

Fairview Park Fire Department

Clear written procedures are in place to provide for public records access through the department staff. Paper records (hard copy files) are inadequately secured. Security of these files should be improved through the increased use of passage and/or container locks with limited access. Important computer files are backed-up to a secure data location on a regular and consistent basis.

Stations are reported to be inconsistently locked and inadequately secured from unauthorized entry. Public access to the buildings is limited to business areas or when accompanied by an employee. Locks are rarely changed to prevent use of orphan keys and unauthorized entry. No

security alarm systems are used to provide for automatic notification of unauthorized entry or break-in. Premises are not equipped with fire alarm systems.

Department computers are easily accessed with little or no password security on sensitive file access and software. This should be corrected to provide an additional level of security and data integrity. Firewall protection is in place for computers accessing the internet and other outside servers. The protection is adequately up to date and capable of preventing most unauthorized network intrusions. Up-to-date virus protection software is utilized on all incoming email, and files or operating systems are regularly scanned for undetected virus infection.

The agency maintains a current inventory of capital assets whose value is in excess of a specified dollar value. A process is in place to maintain this inventory and new assets are logged and recorded at purchase. No business-related cash is routinely kept on the premises of the department, reducing or eliminating risks associated with burglary and theft. The use of petty cash has been eliminated. General-use credit cards, such as VISA™ or MASTERCARD™, are issued to key managers; strict account controls, low credit limits, and zero liability fraud protection are in place. Written, formal purchasing policies and procedures are in place and are strictly enforced. Virtually all purchases require specific POs with appropriate approval signatures and appropriation verifications.

The FPFD has a HIPAA compliance officer in place and strict policies to guide compliance. Efforts to access response records containing protected medical information are strictly controlled and require appropriate identification of the purposes involved in such access.

Lakewood Fire Department

Clear written procedures are in place to provide for public records access through the department staff. Paper records (hard copy files) are adequately secured with passage and/or container locks with limited access. Important computer files are backed-up to a secure data location on a regular and consistent basis.

Stations are reported to be consistently locked and secure from unauthorized entry. Public access to the buildings is limited to business areas or when accompanied by an employee. Locks are changed occasionally to prevent orphan keys and unauthorized entry. No security alarm systems are used to provide for automatic notification of unauthorized entry or break-in. Monitored fire alarm systems provide early smoke and fire detection for buildings, as well as an additional life-safety measure for occupants in the event of a fire.

Department computers are programmed with password security on sensitive file access and software to provide an additional level of security and data integrity. Firewall protection is in place for computers accessing the internet and other outside servers. The protection is adequately up to date and capable of preventing most unauthorized network intrusions. Up-to-date virus protection software is utilized on all incoming email; files and operating systems are regularly scanned for undetected virus infection.

The agency maintains a current inventory of capital assets whose value is in excess of a specified dollar value. A process is in place to maintain this inventory and new assets are logged and recorded at purchase. No business-related cash is routinely kept on the premises of the department, reducing or eliminating risks associated with burglary and theft. Petty cash is available for use by key managers; even tightly controlled petty cash systems can pose problems in loss, theft, or accountability. The department may wish to eliminate this practice in favor of rapid reimbursement systems or use-controlled credit cards. General-use credit cards, such as VISA™ or MASTERCARD™, are issued to key managers; strict account controls, low credit limits, and zero liability fraud protection are in place. Written, formal purchasing policies and procedures are in place and are strictly enforced. Virtually all purchases require specific POs with appropriate approval signatures and appropriation verifications

LFD has a HIPAA compliance officer in place and strict policies to guide compliance. Efforts to access response records containing protected medical information are strictly controlled and require appropriate identification of the purposes involved in such access.

North Olmsted Fire Department

Clear written procedures are in place to provide for public records access through the department staff. Paper records (hard copy files) are adequately secured with passage and/or container locks with limited access. Important computer files are backed-up to a secure data location on a regular and consistent basis.

Stations are reported to be consistently locked and secure from unauthorized entry. Public access to the buildings is limited to business areas or when accompanied by an employee. Locks are changed, at least occasionally, to prevent orphan keys and unauthorized entry. No security alarm systems are used to provide for automatic notification of unauthorized entry or break-in. Monitored fire alarm systems provide early smoke and fire detection for buildings, as well as an additional life-safety measure for occupants in the event of a fire.

Department computers are programmed with password security on sensitive file access and software to provide an additional level of security and data integrity. Firewall protection is in place for computers accessing the internet and other outside servers. The protection is adequately up to date and capable of preventing most unauthorized network intrusions. Up-to-date virus protection software is utilized on all incoming email, and files or operating systems are regularly scanned for undetected virus infection.

The agency maintains a current inventory of capital assets whose value is in excess of a specified dollar value. A process is in place to maintain this inventory and new assets are logged and recorded at purchase. No business-related cash is routinely kept on the premises of the department, reducing or eliminating risks associated with burglary and theft. Petty cash is available for use by key managers; but even tightly controlled petty cash systems can pose problems in loss, theft, or accountability. The department may wish to eliminate this practice in favor of rapid reimbursement systems or use-controlled credit cards. General-use credit cards, such as VISA™ or MASTERCARD™, are issued to key managers on as “as-needed” basis; strict account controls, low credit limits, and zero liability fraud protection are in place. Written, formal purchasing policies and procedures are in place and are strictly enforced. Virtually all purchases require specific POs with appropriate approval signatures and appropriation verifications.

NOFD has a HIPAA compliance officer in place and strict policies to guide compliance. Efforts to access response records containing protected medical information are strictly controlled and require appropriate identification of the purposes involved in such access.

North Ridgeville Fire Department

Clear written procedures are in place to provide for public records access through the department staff. Paper records (hard copy files) are inadequately secured. Security of these files should be improved through the increased use of passage and/or container locks with limited access. Important computer files are backed-up to a secure data location on a regular and consistent basis.

Stations are reported to be consistently locked and secure from unauthorized entry. Public access to the buildings is limited to business areas or when accompanied by an employee. Key codes on the locks are not changed, even occasionally, to prevent orphan keys and

unauthorized entry. No security alarm systems are used to provide for automatic notification of unauthorized entry or break-in. Premises are not equipped with fire alarm systems.

Department computers are programmed with password security on sensitive file access and software to provide an additional level of security and data integrity. Firewall protection is in place for computers accessing the internet and other outside servers. The protection is adequately up to date and capable of preventing most unauthorized network intrusions. Up-to-date virus protection software is utilized on all incoming email; files or operating systems are regularly scanned for undetected virus infection.

The agency maintains a current inventory of capital assets whose value is in excess of a specified dollar value. A tagging process is in place to maintain this inventory and new assets are logged and recorded at purchase. No business-related cash is routinely kept on the premises of the department, reducing or eliminating risks associated with burglary and theft. Petty cash is available for use by key managers, but even tightly controlled petty cash systems can pose problems in loss, theft, or accountability. The department may wish to eliminate this practice in favor of rapid reimbursement systems or use-controlled credit cards. General-use credit cards, such as VISA™ or MASTERCARD™, are issued to key managers; strict account controls, low credit limits, and zero liability fraud protection are in place. Written, formal purchasing policies and procedures are in place and are strictly enforced. Virtually all purchases require specific POs with appropriate approval signatures and appropriation verifications.

The NRFD has a HIPAA compliance officer in place and strict policies to guide compliance. Efforts to access response records containing protected medical information are strictly controlled and require appropriate identification of the purposes involved in such access.

Rocky River Fire Department

Clear written procedures are in place to provide for public records access through the department staff. Paper records (hard copy files) are adequately secured with passage and/or container locks with limited access. Important computer files are backed-up to a secure data location on a regular and consistent basis.

Stations are reported to be consistently locked and secure from unauthorized entry. Public access to the buildings is limited to business areas or when accompanied by an employee. Locks have never been changed. No security alarm systems are used to provide for automatic

notification of unauthorized entry or break-in. Monitored fire alarm systems provide early smoke and fire detection for buildings, as well as an additional life-safety measure for occupants in the event of a fire.

Department computers are programmed with password security on sensitive file access and software to provide an additional level of security and data integrity. Firewall protection is in place for computers accessing the internet and other outside servers. The protection is adequately up to date and capable of preventing most unauthorized network intrusions. Up-to-date virus protection software is utilized on all incoming email and files or operating systems are regularly scanned for undetected virus infection.

The agency maintains a current inventory of capital assets whose value is in excess of a specified dollar value. A process is in place to maintain this inventory and new assets are logged and recorded at purchase. No business-related cash is routinely kept on the premises of the department, reducing or eliminating risks associated with burglary and theft. The use of petty cash has been eliminated. Written, formal purchasing policies and procedures are in place and are strictly enforced. Virtually all purchases require specific POs with appropriate approval signatures and appropriation verifications.

RRFD has a HIPAA compliance officer in place and strict policies to guide compliance. Efforts to access response records containing protected medical information are strictly controlled and require appropriate identification of the purposes involved in such access.

Westlake Fire Department

Clear written procedures are in place to provide for public records access through the department staff. Paper records (hard copy files) are adequately secured with passage and/or container locks with limited access. Important computer files are backed-up to a secure data location on a regular and consistent basis.

Stations are reported to be consistently locked and secure from unauthorized entry. Public access to the buildings is limited to business areas or when accompanied by an employee. Locks are rarely changed to prevent use of orphan keys and unauthorized entry. No security alarm systems are used to provide for automatic notification of unauthorized entry or break-in. Premises are not equipped with fire alarm systems.

Department computers are programmed with password security on sensitive file access and software to provide an additional level of security and data integrity. Firewall protection is in place for computers accessing the internet and other outside servers. The protection is adequately up to date and capable of preventing most unauthorized network intrusions. Up-to-date virus protection software is utilized on all incoming email, and files or operating systems are regularly scanned for undetected virus infection.

The finance department, with assistance from WFD personnel, maintains a current inventory of capital assets whose value is in excess of a specified dollar value. A process is in place to maintain this inventory and new assets are logged and recorded at purchase. No business-related cash is routinely kept on the premises of the department, reducing or eliminating risks associated with burglary and theft. The use of petty cash has been eliminated. General-use credit cards, such as VISA™ or MASTERCARD™, are issued to the fire chief; strict account controls, low credit limits, and zero liability fraud protection are in place. Written, formal purchasing policies and procedures are in place and are strictly enforced. Virtually all purchases require specific POs with appropriate approval signatures and appropriation verifications.

The WFD has a HIPAA compliance officer in place and strict policies to guide compliance. Efforts to access response records containing protected medical information are strictly controlled and require appropriate identification of the purposes involved in such access.

Recommendation 14: Fairview Park and North Ridgeville FDs should improve security of paper records, including the use of passage and container locks.
Recommendation 15: Fairview Park FDs should enforce policies and procedures of fire station security and improve consistency in the locking and securing buildings and the protection of assets.
Recommendation 16: Fairview Park, North Ridgeville, Rocky River and Westlake FDs should occasionally change lock keys and codes to prevent unauthorized access by orphan keys.
Recommendation 17: All seven fire departments should use security alarms on fire stations for periods when they are unoccupied: training, inspections, responses, and routine activities.
Recommendation 18: Fairview Park, North Ridgeville, and Westlake FDs should use monitored fire and smoke alarm systems in fire stations to improve safety.
Recommendation 19: Fairview Park FD should improve access security to computers and workstations.

Reporting and Records

Records management is a critical function to any organization. Effective performance measurement can only be accomplished when records are effectively collected, stored, and analyzed. This section provides an overview of the agency's records management systems.

Bay Village Fire Department

The department utilizes up-to-date records management software to enter and store incident information. The software is compliant with NFIRS (National Fire Incident Reporting System) standards, and incidents are entered quickly and accurately. Training records are maintained on computer. Code enforcement activities and occupancy records are maintained in an effective database to permit analysis of prevention activities, community risks, and trends. Maintenance records for apparatus and equipment are also computerized by the city's maintenance department.

Personnel records are complete and up to date and maintained in a manner that protects private medical information. Records are maintained on employment history, discipline, commendations, work assignments, injuries, exposures, and leave time. Financial activities, including budgets, expenditures, revenues, purchase orders, and other encumbrances are kept in a financial records management software system permitting consistent and up-to-date monitoring of all financial activities and accounts.

The department uses a PC-based computer system, with Windows XP® as its primary operating system; all computers are networked to a municipal server.

Fairview Park Fire Department

The department utilizes up-to-date records management software to enter and store incident information. The software is compliant with NFIRS standards, and incidents are entered quickly and accurately. Training records are maintained on computer. Code enforcement activities and occupancy records are maintained in an effective database to permit analysis of prevention activities, community risks, and trends. Maintenance records are kept in hard-copy format, making collection and analysis of fleet management processes difficult.

Personnel records are complete and up to date and maintained in a manner that protects private medical information. Records are maintained on employment history, discipline, commendations, work assignments, injuries, exposures, and leave time. Financial activities, including budgets, expenditures, revenues, purchase orders, and other encumbrances are kept

in a financial records management software system permitting consistent and up-to-date monitoring of all financial activities and accounts.

The department uses a PC-based computer system, with Windows XP® as its primary operating system; all computers are networked to a municipal server. LAN data lines are available throughout the municipal facilities.

Lakewood Fire Department

The department utilizes up-to-date records management software to enter and store incident information. The software is compliant with NFIRS standards, and incidents are entered quickly and accurately. Training, code enforcement activities, and occupancy records are maintained on computer. Maintenance records are kept in hard-copy format, making collection and analysis of fleet management processes difficult.

Personnel records are complete, up to date, and maintained in a manner that protects private medical information. Records are maintained on employment history, discipline, commendations, work assignments, injuries, exposures, and leave time. Financial activities, including budgets, expenditures, revenues, purchase orders, and other encumbrances are kept in a financial records management software system, permitting consistent and up-to-date monitoring of all financial activities and accounts.

The department uses a PC-based computer system, with Windows XP® as its primary operating system; all computers are networked to a municipal server.

North Olmsted Fire Department

The department utilizes up-to-date records management software to enter and store incident information. The software is compliant with NFIRS standards, and incidents are entered quickly and accurately. Training, code enforcement activities, and occupancy records are maintained on computer. Maintenance records are kept in hard-copy format, making collection and analysis of fleet management processes difficult.

Personnel records are complete and up to date and maintained in a manner that protects private medical information. Records are maintained on employment history, discipline, commendations, work assignments, injuries, exposures, and leave time. Financial activities, including budgets, expenditures, revenues, purchase orders, and other encumbrances are kept

in a financial records management software system, permitting consistent and up-to-date monitoring of all financial activities and accounts.

The department uses a PC-based computer system, with Windows XP® as its primary operating system, and all computers are networked to a municipal server. Fiber optic data lines extend to the fire stations.

North Ridgeville Fire Department

The department utilizes up-to-date records management software to enter and store incident information. The software is compliant with NFIRS standards, and incidents are entered quickly and accurately. Training, code enforcement activities, and occupancy records are maintained on computer. Maintenance records are kept only in rough hard-copy format, making collection and analysis of fleet management processes more difficult.

Personnel records are complete and up to date, and maintained in a manner that protects private medical information. Records are maintained on employment history, discipline, commendations, work assignments, injuries, exposures, and leave time. Financial activities, including budgets, expenditures, revenues, purchase orders, and other encumbrances are kept in a financial records management software system permitting consistent and up-to-date monitoring of all financial activities and accounts.

The department uses a PC-based computer system, with Windows XP® as its primary operating system, and all computers are networked to a municipal server. T-1 and DSL data lines are available throughout the city to all municipal facilities, with dual redundant servers between the fire headquarters and city hall. Records management software is in various formats, including outdated and unsupported programs.

Rocky River Fire Department

The department utilizes up-to-date records management software to enter and store incident information. The software is compliant with NFIRS standards, and incidents are entered quickly and accurately. Training records are maintained on computer. Code enforcement activities and occupancy records are maintained in an effective database to permit analysis of prevention activities, community risks, and trends. Maintenance records for apparatus and equipment are also computerized by the city's maintenance department.

Personnel records are complete, up to date, and maintained in a manner that protects private medical information. Records are maintained on employment history, discipline, commendations, work assignments, injuries, exposures, and leave time. Financial activities, including budgets, expenditures, revenues, purchase orders, and other encumbrances are kept in a financial records management software system, permitting consistent and up-to-date monitoring of all financial activities and accounts.

The department uses a PC-based computer system, with Windows XP® as its primary operating system, and all computers are networked to a municipal server. LAN data lines are available throughout the city complex.

Westlake Fire Department

The department utilizes up-to-date records management software to enter and store incident information. The software is compliant with NFIRS standards, and incidents are entered quickly and accurately. Training records are maintained on computer. Code enforcement activities and occupancy records are maintained in an effective database to permit analysis of prevention activities, community risks, and trends. Maintenance records for apparatus and equipment are computerized on an inconsistent basis.

Personnel records are complete, up to date, and maintained in a manner that protects private medical information. Records are maintained on employment history, discipline, commendations, work assignments, injuries, exposures, and leave time. Financial activities, including budgets, expenditures, revenues, purchase orders, and other encumbrances are kept in a financial records management software system, permitting consistent and up-to-date monitoring of all financial activities and accounts.

The department uses a PC-based computer system, with Windows XP® as its primary operating system, and all computers are networked to a municipal server. Data lines are available throughout the city to all municipal facilities.

Staffing and Personnel Management

Fire and EMS (emergency medical service) organizations must provide adequate staffing in three key areas: emergency services, administration, and support. ESCI surveyed each of the fire departments to assure that a reasonable balance between the three areas is maintained, given the realities of available local resources.

Several standards address staffing issues, specifically, the *OSHA Respiratory Protection Standard 29 CFR 1910.134*; *NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, to the Public by Career Fire Departments;* and *NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* are frequently cited as authoritative documents. In addition, the Center for Public Safety Excellence (CPSE) publishes benchmarks for the number of personnel required on the emergency scene for various levels of risk.[31]

Administration and Support Staff

One of the primary responsibilities of a department's administration and support staff is to ensure that the operational entities of the organization have the ability and means to accomplish their responsibilities on the emergency incident. Efficient and effective administration and support are critical to the success of a department. Without sufficient oversight, planning, documentation, training, and maintenance, the operational entities of a department will fail any operational test. Like any other part of a fire department, administration and support require appropriate resources to function properly.

Analyzing the ratio of administrative and support positions to the total positions of a department facilitates an understanding of the relative number of resources committed to this important function. The appropriate balance of the administration and support component to the operational component is critical to the success of the department's mission and responsibilities.

The report will examine the administration and support complement of each organization separately and then collectively. Based on experience with similar organizations, ESCI has determined emergency services departments usually enjoy a 10 to 15 percent ratio of administration and support staff of total personnel.

[31] CPSE: formerly the Commission on Fire Accreditation International (CFAI).

Bay Village Fire Department

The administrative and support component of BVFD is comprised solely of the Fire Chief. Although one Lieutenant functions as the fire prevention and code enforcement officer, this position is not part of the administrative operations of the fire department. All administrative functions are handled by the Chief, with some delegation to the department's Captains. The figure below illustrates the administrative and support functions for the department.

Figure 26: BVFD Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	1.00
Total	**1.00**

Statistically, the department maintains a ratio of 7.14 percent of administration and support staff to total personnel. The department's administrative and support staffing level is well below the comparison 10 to 15 percent range that is typical for a career fire department.

Fairview Park Fire Department

The administrative and support component of FPFD is comprised of the Fire Chief and one Administrative Assistant. Almost all administrative functions are handled by these positions, with some delegation to the department's Captains and Lieutenants. The figure below illustrates the administrative and support functions for the department.

Figure 27: FPFD Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	1.00
Administrative Assistant	1.00
Total	**2.00**

Statistically, the department maintains a ratio of 6.9 percent of administration and support staff to total personnel. The department's administrative and support staffing level is well below the range that is typical for a career fire department.

Lakewood Fire Department

The administrative and support component of LFD is comprised of the Fire Chief, Fire Marshal, Fire Inspector, and Administrative Assistant. Administrative functions are typically handled by these positions, with some delegation to the department's Captains and Paramedic Supervisors. The following figure illustrates the administrative and support functions for the department.

Figure 28: LFD Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	1.00
Fire Marshal	1.00
Fire Inspector	1.00
Administrative Assistant	1.00
Total	**4.00**

Statistically, the department maintains a ratio of 4.5 percent of administration and support staff to total personnel, well below the range that is typical for a career fire department.

North Olmsted Fire Department

The administrative and support component of NOFD is comprised of the Fire Chief, Fire Prevention Captain, and an Administrative Assistant. Administrative functions are primarily handled by these positions, with some delegation to the department's Captains and Lieutenants. The figure below illustrates the administrative and support functions for the department.

Figure 29: NOFD Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	1.00
Fire Prevention Captain	1.00
Administrative Assistant	1.00
Total	**3.00**

Statistically, the department maintains a ratio of 7.14 percent of administration and support staff to total personnel. The department's administrative and support staffing level is well below the range that is typical for a career fire department.

North Ridgeville Fire Department

The administrative and support component of NRFD is comprised of the Fire Chief, Assistant Fire Chiefs, and Administrative Assistant. Nearly all administrative functions are handled by these positions, with some delegation to the department's Captains and Lieutenants. The following figure illustrates the administrative and support functions for the department.

Figure 30: NRFD Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	1.00
Assistant Fire Chief	2.00
Administrative Assistant	1.00
Total	**4.00**

Statistically, the department maintains a ratio of 10.8 percent of administration and support staff to total personnel, which is in line with the range that is typical for a career fire department.

Rocky River Fire Department

The administrative and support component of RRFD is comprised of the Fire Chief, Fire Prevention Officer, and Administrative Assistant. All administrative functions are handled by these positions, with some delegation to the department's Captains and Lieutenants. The figure below illustrates the administrative and support functions for the department.

Figure 31: RRFD Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	1.00
Fire Prevention Officer	1.00
Administrative Assistant	0.50
Total	**2.50**

Statistically, the department maintains a ratio of 8.5 percent of administration and support staff to total personnel; the administrative and support staffing level is slightly below the comparison range that is typical for a career fire department.

Westlake Fire Department

The administrative and support component of WFD is comprised of the Fire Chief, Assistant Fire Chief, Administrative Assistant, Fire Prevention Secretary, Fire Prevention Lieutenant, and three part-time positions serving as Fire Marshal and Fire Inspectors. Most administrative functions are handled by these positions, with some delegation to the department's Captains and Lieutenants. The following figure illustrates the administrative and support functions for the department.

Figure 32: WFD Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	1.00
Assistant Fire Chief	1.00
Fire Marshal	0.75
Fire Inspector	1.50
Administrative Assistant	1.00
Fire Prevention Lieutenant	1.00
Fire Prevention Secretary	1.00
Total	**7.25**

Statistically, the department maintains a ratio of 14.7 percent of administration and support staff to total personnel, which is at the high end of the range typical for a career fire department.

Aggregate Administrative and Support Personnel

Understanding that the departments included in this study now operate independently, it is also useful to evaluate them as a region to determine how they would compare against other communities if they were to begin functioning as one organization, whether operationally or functionally. The figure below illustrates the administrative and support functions as an aggregate.

Figure 33: Aggregate Administrative and Support Personnel

Position Title	Number of Positions
Fire Chief	7.00
Assistant Fire Chief	3.00
Fire Marshal	1.75
Fire Prevention Captain	1.00
Fire Prevention Officer	1.00
Fire Inspector	2.50
Administrative Assistant	5.50
Fire Prevention Lieutenant	1.00
Fire Prevention Secretary	1.00
Total	**23.75**

Based on the aggregate, the region maintains a ratio of 7.89 percent of administration and support staff to total personnel, well below the range that is characteristic for career fire departments.

Emergency Services Staff

It takes an adequate and well trained staff of emergency responders to put the appropriate emergency apparatus and equipment to its best use in mitigating incidents. Insufficient staffing

at an operational scene decreases the effectiveness of the response and increases the risk of injury to all individuals involved. The following figure summarizes the services that are provided by all the organizations participating in this study.

Figure 34: Emergency Services Summary Table

Activity	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Fire Suppression	●	●	●	●	●	●	●
EMS Advanced Life Support Response	●	●	●	●	●	●	●
EMS Advanced Life Support Transport	●	●	●	●	●	●	●
Vehicle Extrication	●	●	●	●	●	●	●
High Angle Rescue	●		●				
Structural Collapse Rescue							
Trench Rescue	●						●
Swift water/Surface/Ice/Dive Rescue	●		●	●	●	●	
Confined Space Rescue	●						
Fire Prevention Inspections	●	Company	●	Company	●	●	●
Public Education	●	●	●	●	●	●	●
Hazardous Materials Response	Ops	Ops	Ops	Ops	Ops	Ops	Ops
Westshore Regional Hazardous Materials Team provides technician level hazardous materials response throughout the region. NRFD receives similar services from Lorain County.							

Westshore Council of Governments supports a Technician-level Hazardous Materials and Technical Rescue Response Team; many of the study departments supply personnel to that team as well as support the team from an operations-level while on incident scenes.

Bay Village Fire Department

BVFD uses career staffing to carry out its functions. All administrative, support, and response staff are career personnel. The following figure shows the distribution of emergency personnel by rank.

Figure 35: BVFD Emergency Response Personnel by Rank

Position Title	Number of Positions
Captain	3.00
Lieutenant	3.00
Firefighter/Paramedic	20.00
Total	**26.00**

Fairview Park Fire Department

FPFD uses career staffing to carry out its functions. All administrative, support, and response staff are career personnel. The following figure shows the distribution of emergency personnel by rank.

Figure 36: FPFD Emergency Response Personnel by Rank

Position Title	Number of Positions
Captain	3.00
Lieutenant	3.00
Firefighter/Paramedic	21.00
Total	**27.00**

Lakewood Fire Department

LFD uses career staffing to carry out its functions. All administrative, support, and response staff are career personnel. The following figure shows the distribution of emergency personnel by rank.

Figure 37: LFD Emergency Response Personnel by Rank

Position Title	Number of Positions
Assistant Chief (Shift Commander)	3.00
Captain	12.00
Paramedic Supervisor	3.00
Firefighter/Paramedic	20.00
EMT/Paramedic	10.00
Firefighter/EMT	10.00
Firefighter/Mechanic	3.00
Firefighter	23.00
Total	**84.00**

North Olmsted Fire Department

NOFD uses career staffing to carry out its functions. All administrative, support, and response staff are career personnel. The following figure shows the distribution of emergency personnel by rank.

Figure 38: NOFD Emergency Response Personnel by Rank

Position Title	Number of Positions
Captain	3.00
Lieutenant	6.00
Firefighter/Paramedic	30.00
Total	**39.00**

North Ridgeville Fire Department

NRFD uses career staffing to carry out its functions. All administrative, support, and response staff are career personnel. The following figure shows the distribution of emergency personnel by rank.

Figure 39: NRFD Emergency Response Personnel by Rank

Position Title	Number of Positions
Captain	3.00
Lieutenant	6.00
Firefighter/Paramedic	24.00
Total	**33.00**

Rocky River Fire Department

RRFD uses career staffing to carry out its functions. All administrative, support, and response staff are career personnel. The following figure shows the distribution of emergency personnel by rank.

Figure 40: RRFD Emergency Response Personnel by Rank

Position Title	Number of Positions
Captain	3.00
Lieutenant	6.00
Firefighter/Paramedic	18.00
Total	**27.00**

Westlake Fire Department

WFD uses career staffing to carry out its functions. All administrative, support, and response staff are career personnel. The following figure shows the distribution of emergency personnel by rank.

Figure 41: WFD Emergency Response Personnel by Rank

Position Title	Number of Positions
Captain	3.00
Lieutenant	6.00
Firefighter/Paramedic	30.00
Firefighter/Mechanic	3.00
Total	**42.00**

Aggregate Emergency Services Staff

Understanding that each of the departments included in this study now operates independently, it is also useful to evaluate them as a region to determine how they would compare against other communities if they were to begin functioning as one organization, whether operationally or functionally. The figure below illustrates the emergency services staffing as an aggregate.

Figure 42: Aggregate Emergency Services Staff

Position Title	Number of Positions
Assistant Chief (Shift Commander)	3.00
Captain	30.00
Paramedic Supervisor	3.00
Lieutenant	30.00
Firefighter/Paramedic	163.00
EMT/Paramedic	10.00
Firefighter/EMT	10.00
Firefighter/Mechanic	6.00
Firefighter	23.00
Total	**278.00**

Critical Task Staffing

Tasks that must be performed at a fire can be broken down into two key components—life safety and fire flow. Life safety tasks are based on the number of building occupants, and their location, status, and ability to take self-preservation action. Life related tasks involve the search, rescue, and evacuation of victims. The fire flow component involves delivering sufficient water to extinguish the fire and create an environment within the building that allows entry by firefighters.

The number and types of tasks needing simultaneous action will dictate the minimum number of firefighters required to combat different types of fires. In the absence of adequate personnel to perform concurrent action, the command officer must prioritize the tasks and complete some in chronological order, rather than concurrently. These tasks include:

- Command
- Scene safety
- Search and rescue
- Fire attack
- Water supply
- Pump operation
- Ventilation
- Back-up/rapid intervention

The Commission on Fire Accreditation International (CFAI) of the International Association of Fire Chiefs (IAFC) has a sample critical tasking analysis for the number of personnel required on scene for various levels of risk. This information is shown in the following table.

Figure 43: Critical Task Staffing Needs by Risk

Critical Task	Maximum Risk	High Risk	Moderate Risk	Low Risk
Attack line	4	4	4	2
Search and rescue	4	2	2	
Ventilation	4	2	2	
**Backup line/rapid intervention	4	3	2	2
Pump operator	1	2	1	1
Water supply	1	1	1	
Utilities support	1	1	1	
***Command/safety	2	2	2	1
*Forcible entry	0			
*Salvage	0			
Overhaul	1			
Communication	1			
Chief's aide	1	1		
Operations section chief	1	1		
Logistics	1			
Planning	1			
*Staging	1			
Rehabilitation	1	1		
*Division/group supervisors	2			
*High-rise evacuation	10			
*Stairwell support	10			
Total Required	**51**	**20**	**15**	**4 to 6**

* At maximum and high-risk fires, additional personnel may be needed for these tasks.

** Backup line may not be required for certain incidents.

*** Can often be handled by the first due officer.

At the request of ESCI, each department completed a tabletop critical task analysis or presented an internal minimum deployment document to compare against the sample provided by CPSE (Figure 43, above). The results of that analysis are shown in the following figure (Figure 44).

Figure 44: Summary of Tabletop Critical Task Analysis

	Number of Personnel							
Incident Type	**CPSE**	**BVFD**	**FPFD**	**LFD**	**NOFD**	**NRFD**	**RRFD**	**WFD**
Low Risk Residential	**14-16**	17	17	15	17	17	18	17
Moderate Risk Commercial	**23**	26	26	23	26	26	26	26
High Risk Commercial	**37-39**	29	29	25	29	29	29	29
Grass/Brush Fire	**4-6**	4	4	4	4	3	4	4
Vehicle Fire	**3-6**	6	4	6	6	3	4	4
Emergency Medical Incident	**3-6**	3	3	2	3	3	3	3
Motor Vehicle Crash	**3-6**	7	7	8	7	7	7	7
Hazardous Materials Incident	**3-6**	Regional	Regional	Regional	Regional	Regional	Regional	Regional

Variations exist in the number of personnel deemed appropriate by incident type between the seven fire departments. Regardless of the outcome of the cooperative efforts section of this study, the departments should move to standardization of response protocols region-wide.

Recommendation 20: The seven fire departments should standardize response protocols region-wide.

Incident Staffing Performance

In most communities around the country, the number of fire calls has declined over the past decade. Yet as the frequency of fires diminishes, in part due to stricter fire codes and safety education, the workload of fire departments has risen sharply—medical calls, hazardous materials calls, and every sort of household emergency are now addressed by fire departments. Therefore, as the frequency of fires has decreased, the need for a ready group of firefighters has increased.

Although modern codes tend to make fires in newer structures more infrequent, today's energy-efficient construction (designed to hold heat during the winter) also tends to confine the heat of a hostile fire. In addition, research has shown that modern furnishings generally burn hotter (due to synthetics), and roofs collapse sooner because prefabricated roof trusses separate easily after a very short exposure to flame. In the 1970s, scientists at the National Institute of Standards and Technology found that after a fire broke out, building occupants had about 17 minutes to escape before being overcome by heat and smoke. Today, that estimate is three

minutes.[32] The necessity of firefighters arriving on the scene of a fire in the shortest span of time is more critical now than ever.

Methodology for Incident Staffing Performance Analysis

ESCI is providing analysis of incident staffing performance in two ways. Initially, the report will provide a glimpse of how well each individual department is doing at producing its own manpower for incidents within its primary service area. ESCI believes this data is important and can be an indicator for the individual department as to the effectiveness of its staffing efforts.

ESCI also recognizes that for all but the smallest, low-risk incidents, these fire departments are typically acting together in providing fire protection through a coordinated regional response. This is particularly true for structure fires and other high-risk incidents where staffing needs are high. Therefore, the report will go on to provide an overall view of aggregate staffing. ESCI believes that this data is equally important and can be an indicator of the level of success these departments are achieving in providing adequate staffing to meet the needs of the higher-risk incidents.

Of significance to the staffing objective of this study is that *NFPA 1710* establishes that a response company consists of four personnel. The standard does not require that all four be on the same vehicle, but does expect that the four will operate as a single functioning unit once on scene. The *NFPA 1710* response time standard also requires that all four personnel be on scene within the recommended response time guidelines.

There is another reason the arrival of four personnel is critical for structure fires. As mentioned earlier, OSHA regulations require that before personnel can enter a building to extinguish a fire, at least two personnel must be on scene and assigned to conduct search and rescue in case the fire attack crew becomes trapped. This is referred to as the *two-in, two-out rule*.[33] There are, however, some exceptions to this regulation. If it is *known* that victims are trapped inside the building, a rescue attempt can be performed without additional personnel ready to intervene outside the structure.

Given that some of the departments in this study allow apparatus to leave on a response with less than four firefighters on board (as do many fire departments across the country), the time it

[32] National Institute of Standards and Technology, *Performance of Home Smoke Alarms, Analysis of the Response of Several Available Technologies in Residential Fire Settings,* Bukowski, Richard, et al.
[33] 29 CFR 1910.134(g)(4).

takes for the second unit to arrive becomes very important to achieve the four-person company standard. If additional help is a considerable time away, the fire will continue to grow rapidly, contributing to significantly more damage to the property and a higher potential for injury to occupants and responders. The ability of the departments to assemble an effective response force within the specific period of time, also known as *resource concentration*, will be analyzed in a later section of this report.

In departments that rely on volunteers to staff units or to supplement career personnel, analysis by hour of day and by day of week is useful in determining staffing performance. This is not the case in the study area. Each department involved in this study relies solely on career staffing. None of the departments vary their staffing during peak hours; it is assumed that a minimal level of staffing is maintained at all times. The following figures represent the minimum, maximum, and typical staffing totals for each of the departments.

Figure 45: Minimum Staffing Complement[34]

Unit Type	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Engine	2	5	4	2	2	3	3
Second Engine			4	3			3
Aerial/Quint			4		3		
Second Aerial/Quint					3		
Ambulance	2	Cross	2	3	Cross	3	Cross
Second Ambulance		Cross	2		Cross		Cross
Third Ambulance			2		Cross		
Fourth Ambulance							
Officer in Charge	1		2				1
Total	**5**	**5**	**20**	**8**	**8**	**6**	**7**

Figure 46: Maximum Staffing Complement

Unit Type	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Engine	3	5	4	4	2	4	5
Second Engine			5	3			4
Aerial/Quint		3	6		3	2	
Second Aerial/Quint					3		
Ambulance	2	Cross	3	3	3	3	Cross
Second Ambulance	2		2	3	Cross		Cross
Third Ambulance			2		Cross		
Fourth Ambulance			2				
Officer in Charge	1		2				1
Total	**8**	**8**	**26**	**13**	**11**	**9**	**10**

[34] Cross staffing of some units is accomplished with the use of jump assignments on engines and aerials to ambulances. WFD staffs two stations and cross staff apparatus based on the type of call.

Figure 47: Typical Staffing Complement

Unit Type	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Engine	2	4	4	2	2	4	5
Second Engine			4	2			4
Aerial/Quint		3	4		2		
Second Aerial/Quint							
Ambulance	2	Cross	2	3	3	3	Cross
Second Ambulance			2	3	3		Cross
Third Ambulance			2				
Fourth Ambulance			2				
Officer in Charge	1		2				1
Total	**5**	**7**	**22**	**10**	**10**	**7**	**10**

Although the figures above attempt to represent how personnel are deployed amongst the apparatus given available resources, it should be understood that each department's staffing patterns are dynamic and change based on the type of incident dispatched. If multiple EMS incidents occur, it is conceivable that no personnel would be available for a fire incident. Similarly, if a major fire incident occurs, it is also conceivable that no personnel would be available for an EMS response. In these situations, cross-staffing of apparatus is efficient but not always the most effective use of resources given the risks within each community.

Staff Allocation and Assignment of Responsibilities

In previous and subsequent sections of the report, the need for adequate levels of management and administrative support are discussed. Typically in career departments most of the administrative and operational responsibilities are distributed among the officers of the department. The distribution of these responsibilities could be based on the officers' titles or positions, areas of personal interest, and/or expertise.

Without a good distribution of these responsibilities, personnel could suffer from premature burnout and inevitably withdraw from participation with the organization. Without a good succession plan in place, many organizations suffer from the loss of continuity when this occurs.

The use of committees in the fire service is often used to promote staff participation. Standards, apparatus specifications, training, quality management/improvement, and safety are samples of commonly used committees that aid in the operations of the fire service. Each department in this study appears to utilize this approach in regard to many personnel management or operational management functions, although many are ad hoc in nature rather than standing committees. Each agency has a Labor-Management Committee and many also have a Safety Committee, as indicated in their collective bargaining agreements.

Application and Recruitment

Recruitment of personnel is a critically important function for emergency service agencies. The community places a tremendous amount of trust in fire department personnel. The process used to select personnel should be quite comprehensive.

The Americans with Disabilities Act (ADA) prohibits discrimination against individuals with physical disabilities, but permits employers to establish the physical standards that are required to perform the primary functions of any job safely and effectively. History has shown that the most effective method of avoiding a litigation suit involving ADA is through reasonable and consistent application of job-relevant pre-employment physical ability testing. The Cuyahoga Community College Fire Fighter Agility Test is used in the Westshore region.

Each of the study agencies follows the Civil Services Commission's rules and regulations in regards to appointment and promotion of personnel. This includes the appointment of new personnel to fill entry level vacancies. The entry requirement for each agency is similar through the use of civil service testing, but each agency also differs slightly in additional requirements as indicated in the following paragraphs.

Bay Village Fire Department

In addition to completion of the Ohio Fire Academy, standard agility test, and civil service written examination, BVFD requires the following additional components prior to hiring:

- Background investigation through Bay Village Police Department
- Interview by police department based on outcome of investigation
- Additional background checks if necessary
- Polygraph test
- Psychological examination
- Medical and drug testing by contracted physician
- Interview with department officers

Fairview Park Fire Department

In addition to completion of the Ohio Fire Academy, standard agility test, and civil service written examination, FPFD requires the following additional components prior to hiring:

- Background investigation through a private investigation agency
- Individual interview
- Psychological examination

- Medical and drug testing by contracted physician
- Fingerprinting by Fairview Park Police Department
- Polygraph examination through Fairview Police Department
- Interview with panel consisting of Chief, Law Director, Mayor/Safety Director, and one officer

Lakewood Fire Department

In addition to completion of the Ohio Fire Academy, standard agility test, and civil service written examination, LFD requires the following additional components prior to hiring:

- Polygraph examination through Lakewood Police Department
- Background investigation and fingerprinting through a contracted company
- Individual interview
- Psychological examination
- Medical and drug testing by contracted physician

North Olmsted Fire Department

In addition to completion of the Ohio Fire Academy, standard agility test, and civil service written examination, NOFD requires the following additional components prior to hiring:

- Background investigation through North Olmsted Police Department with fingerprinting through the Bureau of Criminal Investigation
- Individual interview
- Polygraph test
- Psychological examination
- Medical and drug testing by contracted physician

North Ridgeville Fire Department

In addition to completion of the Ohio Fire Academy, standard agility test, and civil service written examination, NRFD requires the following additional components prior to hiring:

- Individual interview
- Background investigation and reference checks
- Fingerprinted at North Ridgeville Police Department and submitted to Bureau of Criminal Investigation (BCI)
- Computer Voice Stress Analysis (CVSA) test
- Interview with Fire Chief, two Assistant Chiefs, and three Captains

- Psychological examination
- Medical and drug testing by contracted physician

Rocky River Fire Department

In addition to completion of the standard agility test and civil service written examination, RRFD requires the following additional components prior to hiring:

- Individual interview with city's Civil Service Commission secretary (also serves as city's human resources manager), Fire Chief, and mix of officers
- Background investigation and reference checks
- Polygraph test
- Mayoral interview
- Safety Services Director interview
- Psychological examination
- Medical and drug testing by contracted physician

Westlake Fire Department

In addition to completion of the Ohio Fire Academy, standard agility test, and civil service written examination, WFD requires the following additional components prior to hiring:

- Background investigation and reference checks
- Interview with Fire Chief, Assistant Chief, Captain, and Lieutenant
- Mayoral interview

Personnel Management Components

An organization's people are its most valuable resource. Careful attention must be paid to managing that resource to achieve maximum productivity for the organization and maximum satisfaction for the individual. A safe working environment, fair treatment, and recognition for a job well done are key components of employment, membership, and job satisfaction.

Policies and procedures, guidelines, general orders, promotional process, and disciplinary policies based on firm enabling documents are key to efficient and effective personnel management of a fire department.

The maintenance of adequate and up-to-date personnel records is critical in every organization that depends on the effective performance of its people. Original application materials should be retained in an attempt to create a full historical record of the employee/member's participation in the organization from initial appointment to separation. Documents and records referring to assignments, promotions, commendations, discipline, and other personnel actions should be maintained as well.

A formal progressive disciplinary process for members and employees should be clearly identified and available. The process should provide for various levels of discipline focused on correcting unacceptable behaviors with the most reasonable actions considered appropriate and effective. The process under which discipline is applied should be clear and unambiguous. A multi-level appeals process should be documented to afford the member who feels aggrieved by an unreasonable disciplinary action the opportunity to have his/her issues reviewed by an impartial party.

Critical incident stress is a very real condition that affects all emergency service workers to some degree or another. It is how emergency workers deal with that stress that makes the difference. The trigger for significant psychological trauma may be a single event, or a series of compounding events. Emergency services bring otherwise ordinary people into life and death situations that sometimes end very tragically. Even though fire/rescue personnel are trained firefighters, they do not have an impregnable shield that prevents them from being affected by traumatic events.

Critical incident stress management services are a vital component of an overall employee health and welfare program. These programs use counselors trained in the unique emergency services environment to provide immediate services to those affected by traumatic incidents. Cuyahoga County has recognized the need to provide a support system for the emergency personnel throughout the county who are exposed to traumatic incidents and provide CISD through a regional team.

Critical incident stress interventions by these groups are only short-term processes. Though normally sufficient to help emergency personnel cope with the event, on occasion longer-term support is needed. Failure to provide that support can ultimately lead to the temporary or permanent loss of a valuable member.

Disciplinary and Appeals Processes

Each of the cities participating in this study has personnel policies and/or guideline manuals that each city employee is oriented to during the hiring process. The manuals have detailed disciplinary procedures outlined as well as a defined appeals process. Additional disciplinary and appeals processes are contained in each agency's collective bargaining agreements.

Employee Benefits

Each of the cities participating in this study have their own human resources departments, in some form or fashion, and each department is operating under a collective bargaining agreement that dictates certain benefits that are to be provided to fire department personnel. The figure below is a summary of the benefits offered by the individual municipalities and/or departments.

Figure 48: Summary of Benefits

Unit Type	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Social Security[35]	●	●	●	●	●	●	●
Medicare						●	
Workers Compensation	●	●	●	●	●	●	●
Long-Term Disability	●	●	●	●	●	●	●[36]
Clothing Allowance	●	●	●	●	●	●	●
Education Incentive Pay					●	●	
Longevity Pay	●	●	●	●	●	●	●
Tuition Reimbursement		●	●				
Fitness Membership							
Paid Vacation	●	●	●	●	●	●	●
Paid Sick Leave	●	●	●	●	●	●	●
Funeral/Bereavement Leave	●	●	●	●	●	●	
Military Leave	●	●	●	●		●	●
457 Deferred Compensation	●	●	●	●	●	●	●
Retirement/Pension	●	●	●	●	●	●	●
Medical Insurance	●	●	●	●	●	●	●
Dental Insurance	●	●	●	●	●	●	●
Life Insurance	50,000	50,000	●	25,000	20,000	25,000	25,000
Vision Insurance	●	●		●		●	●
Employee Assistance Program	●	●	●	●	●	●	●
Association Membership Paid			Chief, FM, Inspector			Chief, FPO	
Overtime Bank	●	●	●	●	●	●	●
Compensatory Time Bank	●	●	●	●	●	●	●
Paid Holidays	●	●	●	●	●	●	●

[35] For all employees hired after March 1, 1985.
[36] Provided through pension system.

Promotional Testing Processes

Promotions of individuals within the department should follow a structured and consistent process that ensures that the most qualified candidates are offered promotional opportunities. Ohio is a civil service state and, inasmuch, certain provisions for appointment and promotion are dictated by the Ohio Civil Service Commission. Each of the agencies in this study adheres to the Commission's administration of a written civil service examination and the option of an independent assessment center's evaluation of each promotional candidate to produce a Final Composite Score. Individualized procedures are included for each agency below.

Bay Village Fire Department

BVFD adheres to the Civil Service Commission's rules for appointment and promotion and utilizes both the written examination (50 percent of total score) and an assessment center (50 percent of total score) to produce the Final Composite Score. The appointing authority can then select from the top three ranked candidates to fill a vacancy.

Fairview Park Fire Department

FPFD adheres to the Civil Service Commission's rules for appointment and promotion to lieutenant and captain positions and utilizes promotional tests administered by an external independent agency. Upon final scoring of the promotional exam, FPFD adds a score for seniority.

Lakewood Fire Department

LFD adheres to the Civil Service Commission's rules for appointment and promotion and utilizes appointment and promotional tests administered by a testing agency contracted by the Civil Service Commission.

The collective bargaining agreement between the city and Lakewood Paramedics Association does not address appointments and promotions.

North Olmsted Fire Department

No article contained in the NOFD Collective Bargaining Agreement addresses appointments and promotions with the department. However, department personnel indicate that Ohio Civil Service rules are applied for promotion, using a combination of written examination and assessment center processes.

North Ridgeville Fire Department

Promotional vacancies at NRFD are filled based on a competitive written examination that comprises not less than 60 percent of the composite score; the city has the right to use a credited assessment center and interview process for the remaining portion of the composite score. The candidate with the highest composite score fills the vacancy.

Rocky River Fire Department

Per the RRFD Collective Bargaining Agreement, the department adheres to the Civil Service Commission's rules for appointment and promotion without deviation.

Westlake Fire Department

No article contained in the WFD Collective Bargaining Agreement addresses appointments and promotions with the department.

The following figure serves as a summary of the personnel management components evaluated as well as a summary of the overall personnel system within each agency.

Figure 49: Summary of Personnel Management Components

HIPPA Component	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Number of Recognized Holidays	11	11	11	12	12	12	10
Initial Probationary Period (Months)	24	12	24	18	12	24	Not Identified
Promotional Probationary Period (Months)	4	Not Identified	12	12	12	6	24
Work Schedule	24/48	24/48	24/48	24/48	24/48	24/48	24/48
Workweek	49.8	49.8	50.4	50.4	50.7	49.8	48
FLSA Period	27	27	10	26	26	27	21
Annual Hours	2,590.0	2,590.0	2,620.8	2,620.8	2,640.0	2,590.0	2,496.0
Residency Requirement (Distance for Center)	20	None	None	None	None	None	Surround-ing Counties
Shift Change	07:30	07:00	08:30	08:00	08:00	08:30	07:00
Disciplinary and Appeals Process	Provided in Collective Bargaining Agreement						
Promotional Testing	Civil Service						

Capital Assets and Capital Improvement Programs

Because firefighting is an extremely physical pursuit, the adequacy of personnel resources is a primary concern; but no matter how competent or numerous the firefighters are, the department will fail to execute its mission if it lacks sufficient fire apparatus distributed in an efficient manner.

While volunteer, career, and combination departments have different facility requirements, there are basic needs each fire station has to address: Quick response and housing of apparatus and equipment. Everything else depends on a particular department's budget and needs. Fire station designs are unlike any other type of project as there are many subtle elements and specialized systems that go into a fire station. For example, fire departments across the country are wrestling with the question of how to address gender issues within the boundaries of both existing and new fire stations. Important issues and/or goals to consider when designing a fire station suitable for both men and women include the design of bunk rooms, restrooms, locker rooms, and common areas.

Capital Facilities

The participating departments do not have a formal plan for the replacement of fire stations, though each department has recognized that there may be a need to replace and relocate some of the fire stations in the future. Given the current trend of steady but low growth areas addressed in this study, the time is right to develop a comprehensive and long-range facilities management plan.

Inadequate facilities for housing firefighters and apparatus detract from a department's mission. Limited space can significantly impact the available options for resource assignment, hinder the ability to maintain a well-trained and fit workforce, and may affect employee morale. In the case of the study departments, the design and construction of some of the fire stations is not suitable for operations, as they exist today.

Consideration should be given to the ability of the facilities to support the functions of the department as they may exist in the future. The primary functions that should take place within the fire station environment should be closely examined, and adequate, efficient space for all functions should be provided. Some examples include:

- Housing and cleaning apparatus and equipment
- Administrative office duties
- Firefighter training

- Firefighter fitness
- Vehicle Safety - Exit in and out of the fire stations

While this list may seem elementary, the lack of dedicated space compromises the ability of the facilities to support any of these functions, and can detract from its primary purpose for existing. At this time, the fire departments continue to operate facilities that may be unable to support one or more of the primary functions; this could not be done without the enterprising and creative compromises of the current staff.

This section of the report deals only with analysis of current facilities. However, ESCI is recommending development of a full long-range facilities management plan, as well as specific plans to address any current problems.

A long-range facilities management plan should include a variety of items, such as:

- Location, timing, and cost of any new facilities, especially the volunteer fire stations
- Identified long-term maintenance needs for existing facilities
- On-going funding plan

Fire stations themselves are complicated enough even without the considerations of staffing and equipping them for long-range utilization. There are basic issues that each fire station has to address. Among those are distribution to account for the fire department's response standard and adequate space for the effective, safe and secure housing of personnel, apparatus, and equipment. Facility distribution, staffing, and equipping are always a balance of a fire department's protection goals and the ability to fund those goals.

The fire departments involved in this study have several million dollars' worth of capital assets. These assets are necessary to provide service and must be maintained and replaced as needed.

An evaluation and general condition assessment was conducted on each of the study agencies' facilities. It should be noted that this study is not a full facilities assessment as might be conducted by an engineer or architect. Such a study would be far more detailed than the evaluation conducted for this report by ESCI, and the departments should consider the recommendations of an architect or engineering study as a final authority in issues of condition

and suitability for future use. This focus is on operational conditions, efficiency, safety, and staff.

The following figure is a summary of the facilities evaluated as a part of this study and a more detailed evaluation of each fire station is provided on the subsequent pages.

Figure 50: Summary of Fixed Facilities

Fire Station	Year Built	Building Size (Sq. Ft.)	Condition	General Appearance
Bay Village	1973	11,265	Good, Well Maintained	Very Good
Fairview Park	1968	9,800	Good, Well Maintained	Very Good
Lakewood No. 1	1994	24,000	Very Good	Excellent
Lakewood No. 2	1918	9,500	Good, Well Maintained	Good
Lakewood No. 3	1976	14,000	Good, Well Maintained	Very Good
North Olmsted No. 1	1995	15,000	Very Good	Excellent
North Olmsted No. 2	2007	15,000	Excellent, Well Maintained	Excellent
North Ridgeville No. 1	1957	5,400	Poor	Poor
North Ridgeville No. 2	1975	5,700	Fair, Some Maintenance Issues	Fair
Rocky River	1953	9,751	Poor	Fair
Westlake No. 1	1991	9,252	Excellent, Well Maintained	Very Good
Westlake No. 2	1991	9,252	Excellent, Well Maintained	Very Good

Bay Village Fire Station
28100 Wolf Road

Built in 1973, this 11,265-square foot full-time staffed fire station blends well with surrounding area. This facility consists of five apparatus bays. Very clean and well maintained; could use some reovations.

Any specific problems with this facility can be classified into the following seven categories.

Design	Aesthetically designed to fit the surrounding community structures.
Construction	Block constuction type. A generously proportioned building for the call volume and size of the staff. The station has a training room upstairs and, although not within this facility, exercise equipment is provided at the police depatment adjacent to the station.
Safety	Automatic door stops. Building not sprinklered. No security system in place. Flammable and combustible liquids are in approved storage. Turnout gear located on apparatus floor. There is a back-up generator.
Environment	Has apparatus exhaust removal system – apparatus mounted. Does not have underground storage tanks; all fuel tanks on site and approved. No apparatus floor drain oil separation in use. Turnout gear storage area in ventilated enclosure on the apparatus floor. No turnout gear extractor.
Code Compliance	No problems noted. Building is not ADA compliant. Appears to be in compliance with fire and life safety codes.
Staff Facilities	Kitchen is very small. Day room is small. Locker space is very limited. There is adequate space for working in and around apparatus, also space for working on small equipment. Not designed for two-gender staffing. There is adequate space for safe and rapid response.
Efficiency	Establish a future plan for renovation with NFPA compliance.

Fairview Park Fire Station
20777 Lorain Road

Built in 1968, this 9,800-square foot fire station blends well with surrounding area. This facility consists of five apparatus bays and is very clean and well maintained.

Any specific problems with this facility can be classified into the following seven categories.

Design	Aesthetically designed to fit the surrounding community structures. The structure is adaptable to future needs of the community.
Construction	Block constuction type. Steel doors rusted. Structural problems throughout this building; the exterior walls are cracked and the foundation may also have some major defects. Structural cracks are on the rear of the building. This building should be inspected by a structural engineer.
Safety	No automatic door stops. Building not sprinklered. No security alarm system. Local detection alert only. Flammable and combustible liquids are not in an approved storage. Turnout gear located on apparatus floor with no secured ventilation system. There is a back-up generator.
Environment	Has apparatus exhaust removal system. Does not have underground storage tanks. No apparatus floor drain oil separation in use. Turnout gear storage area is on the apparatus floor.
Code Compliance	No problems noted. Building is not ADA compliant but appears to be in compliance with fire and life safety codes.
Staff Facilities	This facility provides adequate sleeping separation for male/female bathroom and shower facilities to current specifications. The kitchen and dayroom areas are adequate for the staff. An exercise area is combined with the dorm. Plenty of room to work around apparatus, on small equipment, and for a safe and rapid response turnout.
Efficiency	Windows are old and do not close properly. Portable space heaters are needed due to broken windows.

Lakewood Fire Station No. 1
14601 Madison Avenue

Built in 1994 this newer 24,000-square foot fire station blends well with surrounding area. This facility consists of four bays and a rear maintenance bay located on the side of the building.

Any specific problems with this facility can be classified into the following seven categories.

Design	Aesthetically designed to fit the surrounding community structures.
Construction	Block constuction type. The building is adequate for the call volume and size of the staff. Concrete spalling on bay floor.
Safety	Building is sprinklered. Security alarm system needs to be updated. Local detection alert only. Flammable and combustible liquids are in approved storage. Turnout gear located on apparatus floor with no secured ventilation system. Oxygen bottles are not secured.There is a back-up generator. Not fully compliant with NFPA.There are too many vehicles on the apparatus floor.
Environment	No problems noted. All diesel apparatus are equipped with a filtered exhaust system. Underground storage tanks are present as are aparatus floor drains.
Code Compliance	No problems noted. Building is ADA compliant and appears to be in compliance with fire and life safety codes.
Staff Facilities	Fire station does not have enough room for the current staffing. The kitchen and dayroom areas are adequate for the staff. Adequate private cubicals in the dorm for staff. Two-gender staffing considerations. Not enough room to work around apparatus, on small equipment, and for a safe and rapid response turnout.
Efficiency	Fire station meets most of today's standards.

Lakewood Fire Station No. 2
18124 Detroit Avenue

Built in 1918 and remodeled in 1992, this older 9,500-square foot fire station blends well with surrounding area. This facility consists of two apparatus bays. There are some concerns related to maintenance, public access, staff facilities, safety, and efficiency.

Any specific problems with this facility can be classified into the following seven categories.

Design	Aesthetically designed to fit the surrounding community structures. This fire station needs some renovation for the locker room, sleeping quarters, and shower and bathroom areas.
Construction	Block constuction type. A generously proportioned building for the call volume and size of the staff. Current overhead doors may not accomodate future apparatus.
Safety	Building not fully sprinklered. No security alarm system. Local detection alert only. Flammable and combustible liquids are in approved storage. Turnout gear located on apparatus floor with no secured ventilation system. There is a back-up generator. High traffic flow a distraction for emergency responses. Not fully compliant with NFPA.
Environment	All diesel apparatus are equipped with a filtered exhaust system. No underground storage tanks. Turnout gear storage area is on the apparatus floor.
Code Compliance	No problems noted.
Staff Facilities	This facility needs to be remodeled to provide for adequate sleeping separation and provide male/female bathroom and shower facilities to current specifications. The kitchen and dayroom areas are adequate for the staff.
Efficiency	Limited size, cramped facilities. Parking lot is small and congested at shift change. Any future additions to the fire station should include specified storage areas and additional workspace to increase efficiency and safety. Establish a future plan for renovation with NFPA compliance.

Lakewood Fire Station No. 3
12567 Clifton Road

Built in 1976, this 14,000-square foot fire station blends in with surrounding area. This facility consists of two apparatus bays. There are some concerns related to maintenance, public access, staff facilities, safety and efficiency.

Any specific problems with this facility can be classified into the following seven categories.

Design	Design could be more condusive to the surrounding area. The structure is adaptable to future needs of the community.
Construction	This building is brick construction with a shingle roof that has a history of minor leaks. It appears to be well maintained. It was designed to accommodate minimun staffing levels. A generously proportioned building for the call volume and size of the staff. Construction design has led to minimal maintenance costs.
Safety	Building not sprinklered. No security alarm system. Local detection alert only. Turnout gear located off apparatus floor with nonsecured ventilation system. Not fully compliant with NFPA. There is a back-up generator.
Environment	No problems noted. All deisel apparatus are equipped with a filtered exhaust system. No underground storage tanks. There are apparatus floor drains with oil separators in place.
Code Compliance	Building is ADA compliant and appears to be in compliance with fire and life safety codes.
Staff Facilities	The kitchen and dayroom areas are adequate for the staff. Plenty of room to work around apparatus, on small equipment, and for a safe and rapid response turnout.
Efficiency	Relatively efficient building. Good space utilization. Fire station meets most of today's standards.

North Olmsted Fire Station No. 1
24291 Lorain Road

Built in 1995, this 15,000-square foot fire station blends in well with surrounding area. This facility consists of four apparatus bays.

Any specific problems with this facility can be classified into the following seven categories.

Design	There is enough room for the staff and equipment. This facility is adequately designed for its functions and to accomodate two gender staffing.
Construction	Block construction with a shingle roof. A generously proportioned building for the call volume and size of the staff. This fire station is designed to accommadate the current staffing levels.
Safety	Building sprinklered. Security entrance system. Local detection alert only. Flammable and combustible liquids are in approved storage. Turnout gear located in an enclosed room off the apparatus floor. Building appears to be compliant with NFPA. There is a back-up generator.
Environment	No problems noted. There is an exhaust removal system which has evidence of use. No underground storage tanks. Apparatus floor drains appear to have oil seperators.
Code Compliance	No problems noted. Building is ADA compliant and appears to be in compliance with fire and life safety codes.
Staff Facilities	This facility provides adequate sleeping separation for male/female bathroom and shower facilities to current specifications. The kitchen and dayroom areas are adequate for the staff. Plenty of room to work around apparatus, on small equipment, and for a safe and rapid response turnout.
Efficiency	Relatively efficient building. Good space utilization. Fire station meets most of today's standards.

North Olmsted Fire Station No. 2
29592 Lorain Road

Built in 2007, this relatively newer, 15,000-square foot facility consists of three apparatus bays. Fire station is clean and well kept.

Any specific problems with this facility can be classified into the following seven categories.

Design	There is more than enough room for the staff and equipment. This facility is adequately designed for its functions and to accomodate two-gender staffing.
Construction	Block constuction type. A generously proportioned building for the call volume and size of the staff. This fire station is designed to accommodate the current staffing levels.
Safety	Building sprinklered. Security entrance system. Local detection alert only. Flammable and combustible liquids are in a ouside block building. Turnout gear located in an enclosed room off the apparatus floor. Not fully compliant with NFPA. There is a back-up generator.
Environment	No problems noted. There is an exhaust removal system which has evidence of use. No underground storage tanks. Apparatus floor drains have oil separators.
Code Compliance	Kitchen lights not working. Building is ADA compliant and appears to be in compliance with fire and life safety codes.
Staff Facilities	This facility provides adequate sleeping separation for male/female; bathroom and shower facilities to current specifications. The kitchen and dayroom areas are adequate for the staff. Plenty of room to work around apparatus, on small equipment, and for a safe and rapid response turnout.
Efficiency	Efficient building. Good space utilization. Fire station meets today's standards.

North Ridgeville Fire Station No. 1
7090 Avon Beldon Road

Built in 1957, this 5,400-square foot facility blends well with surrounding area. This facility consists of two apparatus bays. There are concerns related to maintenance, public access, staff facilities, safety and efficiency.

Any specific problems with this facility can be classified into the following seven categories.

Design	There is not enough room for the staff and equipment. This facility is not adequately designed for its functions and to accomodate two-gender staffing.
Construction	Block constuction type. Trailer added as a quick fix for a dorm. This fire station is not designed to accommodate the current staffing levels.
Safety	Building not sprinklered. No security alarm system. Local detection alert only. No working automatic door stops or traffice control devices. Flammable and combustible liquids are not in approved storage cabinets. Turnout gear located on apparatus floor with no secured ventilation system. Not fully compliant with NFPA. There is a back-up generator.
Environment	Many enviromental problems noted. There is a no smoke system installed on the vehicles. No underground storage tanks. Apparatus floor drains have oil separators..
Code Compliance	A certified building inspector or architectural engineer should evaluate this facility. Building is not ADA compliant.
Staff Facilities	This facility does not provide adequate sleeping separation for male/female staff; bathroom and shower facilities to current specifications. The kitchen and dayroom areas are in need of major remodeling. Not enough room to work around apparatus, on small equipment.
Efficiency	Heating and air conditioning boiler pipes rotted and OOS. Fire station uses three ineffecient heating systems. Building does not appear to be efficient.

North Ridgeville Fire Station No. 2
35423 Lorain Avenue

Built in 1975, this older 5,700-square foot fire station blends well with surrounding area. This facility consists of two apparatus bays. There are some concerns related to maintenance, public access, staff facilities, safety and efficiency.

Any specific problems with this facility can be classified into the following seven categories.

Design	Aesthetically designed to fit the surrounding community structures. With some remodeling this structure could be adaptable to future needs of the community.
Construction	Block constuction type. A generously proportioned building for the call volume and size of the staff. Steel doors need to be replaced.
Safety	No automatic door stops or traffice control devices. High traffic flow a distraction for emergency responses. Building not sprinklered. No security alarm system. Local detection alert only. Flammable and combustible liquids are in approved storage. Turnout gear located on apparatus floor with no secured ventilation system. There is a back-up generator. Not fully compliant with NFPA.
Environment	There is an exhaust removal system, 'No Smoke', which has evidence of use. No underground storage tanks. There is no apparatus floor drain oil separation in use. Turnout gear storage area is on the apparatus floor.
Code Compliance	No problems noted. Building is not ADA compliant.
Staff Facilities	This facility needs to be remodeled to provide for adequate male/female bathrooms and shower facilities to current specifications. The kitchen and dayroom areas are adequate for the staff.
Efficiency	Limited size, cramped facilities. Establish a future plan for renovation with NFPA compliance.

Rocky River Fire Station
21012 Hilliard Boulevard

Built in 1953, this 9,751-square foot fire station blends in well with surrounding area. This facility consists of four apparatus bays. There are some concerns related to maintenance, public access, staff facilities, safety and efficiency.

Any specific problems with this facility can be classified into the following seven categories.

Design	Aesthetically designed to fit the surrounding community structures. The structure could be adaptable to future needs of the community with some major remodeling.
Construction	Roof leaks over watch office. The building's heating and cooling system is a central air type system. Floor drain grates rotted and dangerous. Found many structural cracks both inside and outside. Concrete is showing signs of spalling.
Safety	Building not sprinklered. Turnout gear located on apparatus floor with no secured ventilation system. There is a back-up generator, but it fails to meet the needs of the fire department.
Environment	There is a direct connect exhaust removal system which has evidence of use. Underground storage tanks for gas and deisel fuel. There are apparatus floor drains but they appear to be in need of repairs.
Code Compliance	Building is ADA compliant and appears to be in compliance with fire and life safety codes.
Staff Facilities	Inadequate space and facilities for bi-gender staffing. The kitchen and dayroom areas are not adequate for the staff. Plenty of room to work around apparatus, on small equipment, and for a safe and rapid response turnout. Exercise area limited to basement hallway or apparatus floor.
Efficiency	Limited size, cramped facilities. Establish a future plan for renovation with NFPA compliance. This old fire station needs a lot of attention to bring it up to current standards. Building does not appear to be efficient.

Westlake Fire Station No. 1
3200 Crocker Road

Built in 1991, this 9,252-square foot, up-to-date fire station blends in well with surrounding area. This facility consists of two drive-through and one back-in apparatus bays. There are some concerns related to maintenance, public access, staff facilities, safety and efficiency.

Any specific problems with this facility can be classified into the following seven categories.

Design	There is enough room for the staff and equipment. This facility is adequately designed for its functions and to accomodate two gender staffing.
Construction	This building is brick construction shingle roof and well maintained. A generously proportioned building for the call volume and size of the staff. This fire station is designed to accommodate the current staffing levels.
Safety	Building not sprinklered. Keyless entry system. No security alarm system. Local detection alert only. Flammable and combustible liquids are in approved storage. Turnout gear located in apparatus floor with no secured ventilation system. Not fully compliant with NFPA. There is a back-up generator.
Environment	No problems noted. There is a exhaust removal system which has evidence of use. No underground storage tanks. Apparatus floor drains have oil separators.
Code Compliance	No problems noted. Building is ADA compliant and appears to be in compliance with fire and life safety codes.
Staff Facilities	This facility provides adequate sleeping separation for male/female; bathroom and shower facilities meet current specifications. The kitchen and dayroom areas are adequate for the staff. Plenty of room to work around apparatus, on small equipment and for a safe and rapid response turnout.
Efficiency	Fire station meets most of today's standards. Too much equipment stored in this fire station.

Westlake Fire Station No. 2
2110 Columbia Road

Built in 1991, this relatively newer, 9,252-square foot facility consists of three apparatus bays. Fire station is clean and well kept. There are no concerns related to maintenance, public access, staff facilities, safety and efficiency.

Any specific problems with this facility can be classified into the following seven categories.

Design	There is enough room for the staff and equipment. This facility is adequately designed for its functions and to accomodate two-gender staffing.
Construction	This building is brick construction shingle roof and well maintained. A generously proportioned building for the call volume and size of the staff. This fire station is designed to accommodate the current staffing levels.
Safety	Building not sprinklered. No security alarm system. Local detection alert only. Keyless entry system to facility. Flammable and combustible liquids are in approved storage. Turnout gear located in apparatus floor with no secured ventilation system. Not fully compliant with NFPA. There is a back-up generator.
Environment	No problems noted. There is a exhaust removal system which has evidence of use. No underground storage tanks. Apparatus floor drains have oil seperators.
Code Compliance	No problems noted. Building is ADA compliant and appears to be in compliance with fire and life safety codes.
Staff Facilities	This facility provides adequate sleeping separation for male/female bathroom and shower facilities to current specifications. The kitchen and dayroom areas are adequate for the staff. Plenty of room to work around apparatus, on small equipment, and for a safe and rapid response turnout.
Efficiency	Fire station meets most of today's standards. Too much equipment stored in this fire station.

Recommendation 21: Develop and fund a long-range facilities management plan for the seven fire departments in accordance with projected service demand.

Recommendation 22: Initiate corrections of deficiencies to existing facilities and continue planned remodeling projects.

Recommendation 23: Improvement in general housekeeping at each of the reviewed facilities.
Recommendation 24: Develop a regional, cooperative long-range facilities management plan to provide for future facilities in locations best suited to serve the entire region; regardless of jurisdiction. Create cooperative agreements to operate from shared facilities.

Fire and EMS Apparatus

The departments involved in this study operate a fleet of response vehicles that is well maintained, with nearly half the fleet under the typical anticipated front-line lifespan for its type. The average age of all major fire apparatus is 9.6 years.

Figure 51: Average Fire Station Age

Westshore Fire Departments	Average Age of Front-line Apparatus
Bay Village	9.4 Years
Fairview Park	8.6 Years
Lakewood	7.6 Years
North Olmsted	10.1 Years
North Ridgeville	9.0 Years
Rocky River	8.6 Years
Westlake	7.2 Years
Overall Average Age	**9.6 Years**

Average condition of all fire apparatus is considered good. The study departments need to make apparatus replacement a priority in both the short and long term to ensure continued reliability for emergency service use. From a regional perspective, apparatus serving the study area consists of the following:

- 21 Ambulances
- 2 Reserve Ambulances
- 12 Engines
- 2 Reserve Engines
- 9 Ladders
- 1 Reserve Ladder
- 3 Special Units (1 Air Unit, 1 Rescue Unit, 1 Hazmat Unit)

The following is a detailed inventory of the vehicles within each fire department evaluated as part of this study.

Bay Village Fire Department

Unit		Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
T-16		*1996*	*Good*	*1,500 Gallons per minute (GPM)*	*200 Gallons*	*4*	*Yes*	***Well equipped, no major problems noted. Unapproved gas can. Rear steer axle has history of problems. There are some significant potential problems with such as tag axle and rotation of platform. No Smoke System installed.*** ***Mileage: 33,700***
E-15		*1996*	*Good*	*1,500*	*750*	*4*	*Yes*	***Well equipped, no major problems noted. Equipment not secured. Unapproved gas can. No Smoke System installed.*** ***Mileage: Unknown***
E-14		*1995*	*Good*	*1,500*	*500*	*4*	*Yes*	***Well equipped, no major problems noted. Equipment not secured. Unapproved gas can. No Smoke System installed.*** ***Mileage: 17,500***
M-12		*2008*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	***Well equipped, no problems noted. No Smoke System installed.*** ***Mileage: 16,070***
M-11		*1997*	*Good*	*N/A*	*N/A*	*2*	*Yes*	***Well equipped, no problems noted. This unit went out of service in November 2009.*** ***Mileage: 57,500***
HAZ-MAT		*2007*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	***No problems noted. This unit serves all Westshore FDs.*** ***Mileage: 3,110***

Fairview Park Fire Department

Unit		Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
E-35		*2008*	*Excellent*	*1,500 GPM*	*750 gallons*	*6*	*Yes*	***Well equipped, no major problems noted.*** ***Mileage: 3,071***
T-31		*1995*	*Good*	*1,500*	*350*	*6*	*Yes*	***Hydraulic leaks, some electrical problems with aerial. Unapproved gas can. Well equipped, no major problems noted.*** ***Mileage: 7,667***
M-31		*2004*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	***Well equipped, no major problems noted.*** ***Mileage: 21,171***
M-33		*1999*	*Good*	*N/A*	*N/A*	*2*	*Yes*	***Well equipped, no major problems noted.*** ***Mileage: 42,601***
E-34		*1993*	*Fair*	*1,500*	*750*	*6*	*Yes*	***No major problems noted. Steering is not the best.*** ***Mileage: 22,454***

Lakewood Fire Department

Unit		Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
S-5		*1995*	*Fair*	*N/A*	*N/A*	*2*	*N/A*	*Well equipped. Drug box not secured.* *Mileage: 64,852*
T-1		*2007*	*Excellent*	*1,500 GPM*	*500 gallons*	*5*	*Yes*	*Well equipped, no major problems noted. No problems noted.* *Mileage: 11,123*
S-1		*2001*	*Excellent*	*N/A*	*N/A*	*2*	*N/A*	*No problems noted. Drug box not secured.* *Mileage: 14,325*
H&L 1 RES		*2001*	*Good*	*0*	*N/A*	*5*	*Yes*	*Reserve Unit* *Well equipped, no major problems noted.* *Mileage: 23,797*
Air Unit		*1995*	*Fair*	*N/A*	*N/A*	*2*	*N/A*	*Reserve Unit* *No problems noted.* *Mileage: 53,994*
S-2		*2003*	*Excellent*	*N/A*	*N/A*	*2*	*N/A*	*No problems noted.* *Drug box not secured.* *Mileage: 48,140*
S-4		*2002*	*Good*	*N/A*	*N/A*	*2*	*N/A*	*No problems noted.* *Drug box not secured.* *Mileage: 41,994*
E-2		*1997*	*Fair*	*1,500*	*500*	*5*	*Yes*	*Some corrosion on cab and body. Well equipped, no major problems noted.* *Mileage: 34,561*

Unit		Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
S-3		***2009***	***Excellent***	***N/A***	***N/a***	***2***	***N/A***	***No problems noted. Drug box not secured.*** ***Mileage: 911***
E-3		***2004***	***Good***	***1,500***	***500***	***5***	***Yes***	***Well equipped, no major problems noted.*** ***Mileage: 34,561***
E-4 RES		***1983***	***Fair***	***1,250***	***500***	***4***	***No***	***Reserve Unit Well equipped, no major problems noted.*** ***Mileage: 34,561***

North Olmsted Fire Department

Unit		Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
E-2		*2002*	*Excellent*	*1,500 GPM*	*750 gallons*	*5*	*Yes*	***Well equipped, no major problems noted.*** ***Mileage: 42,663***
L-1		*1995*	*Fair*	*1,500*	*400*	*4*	*Yes*	***Unit used selectively to prolong lifespan.*** ***Mileage: 63,079***
M-51		*2004*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	***Well equipped, no problems noted.*** ***Mileage: 73,485***
R-57		*1997*	*Fair*	*N/A*	*N/A*	*2*	*Yes*	***Rescue Unit.*** ***No problems noted*** ***Mileage: 66,509***
M-52		*2004*	*Good*	*N/A*	*N/A*	*2*	*Yes*	***Well equipped, no problems noted.*** ***Mileage: 73,631***
M-53		*2000*	*Fair*	*N/A*	*N/A*	*2*	*Yes*	***No problems noted.*** ***Mileage: 77,472***
E-3		*1994*	*Fair*	*1,500*	*750*	*4*	*Yes*	***Well equipped, no problems noted.*** ***Mileage: 42,986***

North Ridgeville Fire Department

Unit		Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
L-23		*2006*	*Excellent*	*1,500 GPM*	*480 gallons*	*3*	*Yes*	*Well equipped, no problems noted. Extinguishers expired.* *Mileage: 9,884*
E-21		*1993*	*Fair*	*1,500*	*750*	*3*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 39,674*
M-25		*2009*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 13,552*
M-26		*2001*	*Fair*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 85,671*
M-28		*2004*	*Good*	*1,000*	*1,000*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 82,166*
M-27 RES		*1997*	*Fair*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 81,700*
L-22		*1998*	*Good*	*1,500*	*500*	*3*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 73,631*

Rocky River Fire Department

Unit		Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
M-63		*2007*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no problems noted.* *Mileage: 13,570*
E-64		*2005*	*Excellent*	*1,500 GPM*	*500 gallons*	*4*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 10,020*
M-67		*2006*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted. Remounted box.* *Mileage: 24,791*
T-66		*1992*	*Fair*	*1,500*	*N/A*	*4*	*Yes*	*Well equipped, no major problems noted. Rebuilt engine. Unapproved gas cans.* *Mileage: 13,064*
E65		*1997*	*Good*	*1,500*	*500*	*4*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 24,875*
M-68		*2003*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 40,362*

Westlake Fire Department

Unit	Westlake	Year	Condition	Pump	Tank Size	Seats	Meets NFPA	Remarks
M-71		*2004*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no problems noted.* *Mileage: 66,532*
E-71		*2008*	*Excellent*	*1,500 GPM*	*750 gallons*	*5*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 7,991*
T-71		*200*	*Excellent*	*1,500*	*400*	*6*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 21,392*
M-73		*1999*	*Good*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 60,231*
T-72		*1990*	*Fair*	*1,500*	*200*	*5*	*Yes*	*Well equipped, engine problems.* *Mileage: 58,730*
M-74		*2007*	*Excellent*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted.* *Drug box not secured.* *Mileage: 40,362*
M-72		*2004*	*Good*	*N/A*	*N/A*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: 68,503*
E-72		*2008*	*Excellent*	*1,500*	*500*	*2*	*Yes*	*Well equipped, no major problems noted.* *Mileage: Unknown*

Vehicle Maintenance and Emergency Vehicle Technicians (EVT)

The emergency service has always ensured that response and rescue personnel are trained and certified to appropriate levels based on *accepted standards*, such as NFPA standards for firefighters and fire officers. A great deal of emphasis is placed on maintaining the condition of the apparatus and equipment used by these personnel, but what about the people who maintain and repair the vehicles and equipment? What level of training have they received to keep a sophisticated piece of machinery in proper operating order? All fire department agencies should take the steps to establish a maintenance program using standards set by the Emergency Vehicle Technician Certification Commission, Inc.

The Emergency Vehicle Technician Certification Commission, Inc., is a nonprofit corporation dedicated to improving the quality of emergency vehicle service and repairs throughout the United States and Canada. This program has shown how important a system like this is - each front line vehicle that was inspected was found to be in excellent or good condition. Apparatus and ambulances serviced by certified technicians will provide more reliable equipment, thus enhancing the safety of the public and emergency personnel.

Vehicle fleet management and the vehicle maintenance programs are handled through all of the Westshore city maintenance departments. The Westshore city maintenance departments are responsible for vehicle procurement, vehicle maintenance, and small equipment maintenance. Most of the mechanics that work on the fire apparatus are not EVT certified. Lakewood Fire Department has a firefighter assigned to handle minor and routine maintenance and repairs, but the firefighter is not EVT certified. The Westshore city maintenance departments maintain the fire departments' fleet of fire and medical apparatus, including support vehicles cars, SUVs, pickup trucks, etc., and many more small equipment items. ESCI reviewed the practices used by the Westshore fire departments in maintaining and repairing its firefighting equipment and found that the fire department performed adequate routine checks of its equipment and supports a preventive maintenance program. ESCI also found that the department's information system was reliable for tracking repair and a maintenance schedules and costs to assist in determining whether maintenance tasks are performed in a timely and cost-effective manner.

The city maintenance departments have implemented a preventive maintenance (PM) program for all the fire departments. The goal of the program is to have all major vehicles in the inventory receive PM service on a regular schedule either based on miles driven or a specific

time schedule depending on the type of vehicle. All service records should be maintained by the fire departments and the city maintenance departments.

Figure 52: Vehicle Maintenance Programs

	EVT City Mechanics	Preventive Maintenance Program Fire & EMS	Preventive Maintenance Program Support Vehicles	Preventive Maintenance Program Small Equipment
Bay Village	No	Yes	Yes	No
Fairview Park	No	Yes	Yes	No
Lakewood	No	Yes	Yes	No
North Olmsted	No	Yes	Yes	No
North Ridgeville	Yes	Yes	Yes	No
Rocky River	Yes	Yes	Yes	No
Westlake	Yes	Yes	Yes	No

Pump Testing and Hose Testing

Two necessary procedures that are required annually and must be documented are pump testing and hose testing. The life expectancy of a section of fire hose is determined by the care it receives. Hose is susceptible to mechanical injury, heat and fire damage, mold and mildew, and damage due to chemical contact and excessive pressures. Also an inventory of all fire hose should be recorded along with a history of each section of hose. After reviewing the hose test procedures of Westshore COG fire departments, it appears that all seven departments have done an excellent job in hose testing and recording keeping. The pump testing program established by each fire department meets NFPA standards and appears to be an adequate program.

Fire pumps are one of the most important and expensive parts of any fire apparatus. The care and routine check of a fire pump is a daily necessity and appears to be done by the assigned driver/operator of all seven departments. Part of the preventative maintenance programs requires that all fire pumps be serviced every six months. These tests should include drain and refill the fluids in the transfer case, grease the bearings, lube all ball valves, linkage, drain valves and pressure relief valves. In addition to the above checks, the booster tank water level gauge is also inspected along with all other gauges, and pump panel lights. This test should be performed every six months and an annual pump test is performed every 12 months.

Figure 53: Equipment Maintenance Programs

	Annual Pump Test	Annual Hose Test	Annual Ladder Test	Annual Aerial Test
Bay Village	Yes	Yes	Yes	Yes
Fairview Park	Yes	Yes	Yes	Yes
Lakewood	Yes	Yes	Yes	Yes
North Olmsted	Yes	Yes	Yes	Yes
North Ridgeville	Yes	Yes	Yes	Yes
Rocky River	Yes	Yes	Yes	Yes
Westlake	Yes	Yes	Yes	Yes

Support and Small Equipment

Small equipment can take a significant bite out of an annual budget. The Westshore COG fire departments have a very good supplement of small tools and equipment. Some of the equipment is duplicated and Westshore COG fire departments should evaluate and consolidate some small tools and equipment.

Small equipment can be quite expensive and has the additional challenge of having its life limited by technology improvements. A small equipment replacement plan should also be established. The Westshore COG fire departments do not have such a plan.

The plan, like facilities and apparatus, should include a schedule of equipment covered, estimated life expectancy, replacement cost, and annual contributions required to replace equipment as needed. It is recommended that all equipment with a value of more than $5,000, as well as groups of equipment with an aggregate value of more than $5,000, be included in the plan. Examples include:

- Heart monitor/defibrillators
- Extrication tools
- Thermo imagining camera's
- Portable and mobile radios
- Computer equipment and systems
- Shop diagnostic and maintenance equipment
- Breathing apparatus
- Computer software (major systems)
- Rescue tools
- Water Rescue equipment

Recommendation 25: Develop a group purchasing program for capital and routine purchases and for services contracts (i.e. ladder testing, self-contained breathing apparatus, turnout gear, and hose).
Recommendation 26: Develop and fund a program for the replacement of small equipment for the seven departments.
Recommendation 27: Mount equipment in compartments.
Recommendation 28: Establish SCBA maintenance and cleaning programs.
Recommendation 29: Continue to annually test ground and aerial ladders in accordance with NFPA standards.[37,38]
Recommendation 30: Continue to annually test fire hose in accordance with NFPA standards.[39]
Recommendation 31: Continue to annually test fire pumps in accordance with NFPA standards.[40]

Turnout Gear Maintenance

Most fire departments think that their most valuable asset is the fleet of apparatus; although the fleet is important, turnout gear should be number one. Statistical data indicates today's firefighters' health and safety are at a much higher risk due to exposure and the buildup of contaminants found in day-to-day fire situations. In the latest revisions to NFPA specifications *1500*, *1581*[41], and *1971*[42], the fire service has addressed the health and safety risks associated with contaminated turnout gear by requiring that protective clothing be cleaned at least once every six months.

With these new requirements put into place by the NFPA, and similar changes being made by OSHA; fire departments across the country are scrambling to find inexpensive ways to effectively comply with new standards. As with any new requirement, funding can be a problem.

Studies have found that having gear professionally cleaned and repaired on a routine basis has added another two years of life to the garment. Obviously, wear life depends on the type of department, number and type of fires fought, and aggressiveness of firefighters. This extended wear life has enabled them to lengthen their replacement cycle for new gear and reduce yearly capital expenditures.

[37] *NFPA 1932: Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders*, 2010 Edition.
[38] *NFPA 1914: Standard for Testing Fire Department Aerial Devices*, 2002 Edition.
[39] *NFPA 1962: Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose*, 2008 Edition.
[40] *NFPA 1901: Standard for Automotive Fire Apparatus*, 2009 Edition.
[41] *NFPA 1581: Fire Department Infection Control Program*, 2005 Edition.
[42] *NFAP 1971: Protective Ensemble for Structural Fire Fighting*, 2000 Edition.

Many departments have realized significant savings by having gear (which previously would have been discarded due to heavy contamination or excessive wear and tear) evaluated and professionally cleaned and repaired. The cost of cleaning and repairing can prove to be a fraction of the replacement cost.

Less sophisticated cleaning methods will remove dirt and perspiration, but will not remove severe contamination or hydrocarbons. This residue will shorten the useful life and cause unnecessary expense of early gear retirement. Also, failing to maintain the integrity of the garment by not performing periodic inspections and not attending to repairs and mending can endanger the firefighter's safety, as well as causing the gear to be replaced prematurely.

The Westshore COG fire departments all appear to have current NFPA-approved turnout gear, and all gear that was inspected was clean and well maintained.

Turnout Gear Replacement

The nature of firefighting and firefighting injuries has changed substantially over the years. Major departments are consistently reporting that less than 2 percent of calls involve structural fires. Concurrently, vehicle extrication and EMS calls are steadily increasing. In addition, NFPA statistics on firefighter fatalities show that stress is the leading cause of death.

These two facts—the low percentage of calls involving structural fires and the high percentage of firefighter deaths and injury resulting from stress—suggest that fire departments should be focusing attention on stress reduction; in other words, on increasing firefighter mobility and comfort.

It is, therefore, important for the department preparing to purchase new bunker gear to first perform a diagnostic of the environment in which its firefighters work. Such a diagnostic should consider the following:

- The number of calls made per year
- The percentage of calls that involve structural fires
- The percentage of calls that are EMS related
- The percentage of calls that involve vehicle extrication
- The distribution of calls between summer and winter
- The local climate (e.g. temperate & wet, cold or hot & dry, etc.)
- The department's fire attack procedures
- The physical conditioning and age of its firefighters

Materials Performance Requirements

The department should define the performance requirements of the materials it wants in its bunker gear in relation to the environmental diagnostic. These requirements can be grouped as follows:

Requirements affecting garment life:

- Tear and abrasion resistance
- Resistance to ultra-violet (UV) degradation (strength and appearance)
- Resistance to molten metal splatter or burning embers
- Ability to be reused after exposure to high temperature
- Ability to be cleaned

Requirements affecting firefighter safety:

- Ice-shedding ability
- Water absorption on the fire ground
- Weight and increased mobility
- Visibility
- Thermal protective performance (TPP) of all the layers together in the garment
- Breathe-ability of the moisture barrier

It is important to remember that there is often a trade-off between performance requirements and characteristics. For example, the fabric with the best thermal damage tolerance may have relatively poor UV degradation performance. And there is always a trade-off between price and performance—the higher the performance, the higher the cost.

Garment design is no less important than the fabrics that go into bunker gear. And like the materials performance requirements, garment design requirements (or criteria) flow from the needs of the particular fire department's environment. The study departments all appear to have current NFPA approved turnout gear.

Figure 54: Turnout Gear Compliance and Maintenance

	NFPA Compliant	In-house Cleaning w/Extractor	Semi-Annual Inspection	Routine Cleaning
Bay Village	Yes	No	Yes	Yes
Fairview Park	Yes	Yes	No	Yes
Lakewood	Yes	Yes	Yes	Yes
North Olmsted	Yes	Yes	Yes	Yes
North Ridgeville	Yes	Yes	Yes	Yes
Rocky River	Yes	No	Yes	Yes
Westlake	Yes	Yes	Yes	Yes

Recommendation 25: Develop a group purchasing program for capital and routine purchases and for services contracts (i.e. ladder testing, self-contained breathing apparatus, turnout gear, and hose).
Recommendation 32: Develop and fund a replacement program for personal protective equipment (PPE) for the seven fire departments.
Recommendation 33: Establish an inspection and maintenance program for PPE.

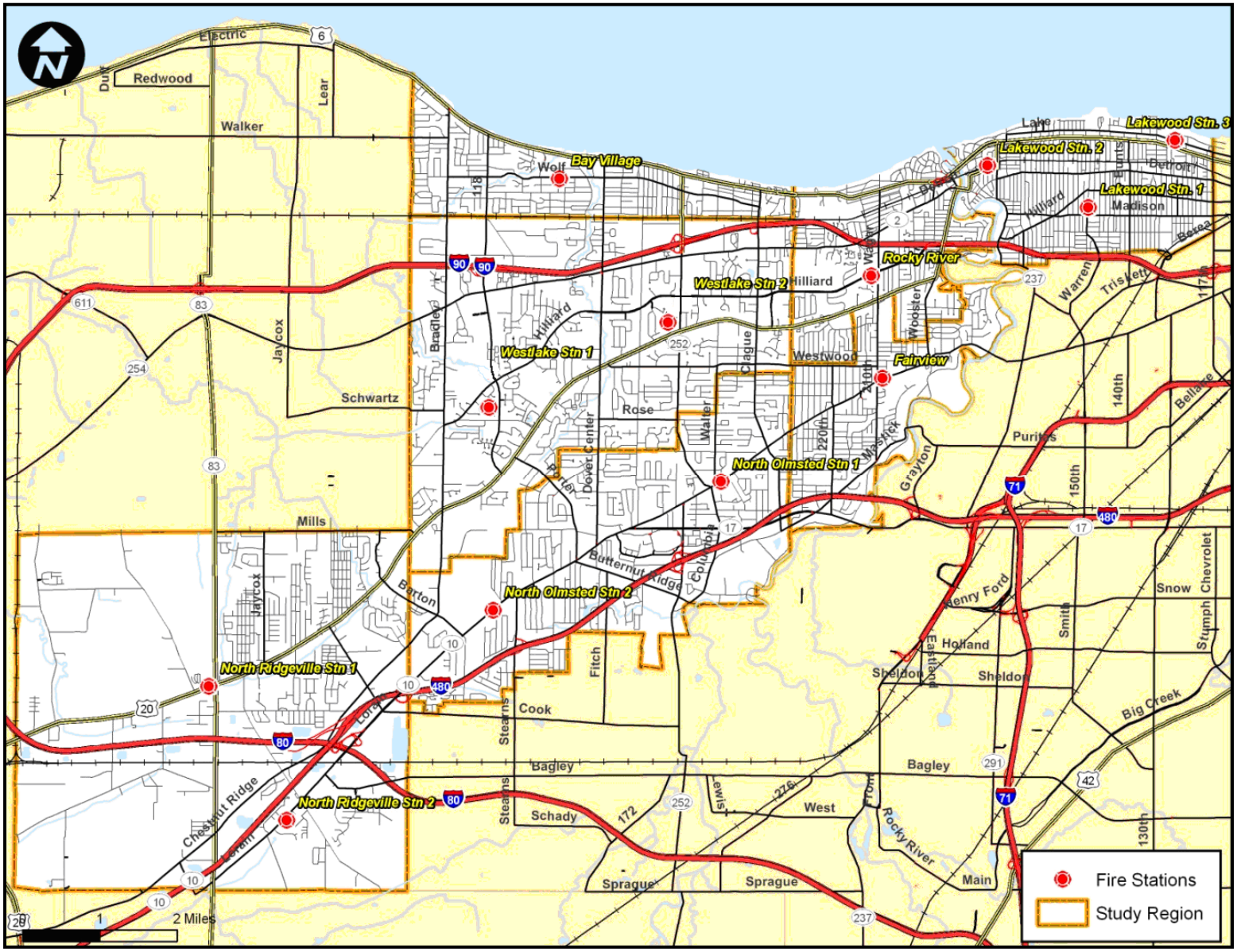
Service Delivery and Performance

The delivery of fire suppression and rescue services is no more effective than the sum of its parts. It requires efficient notification of an emergency, rapid response from well-located facilities in appropriate apparatus, and sufficient staffing following a well-practiced plan of action. This section of the study evaluates these various components and provides observations of the elements that make up the delivery of the most critical core services provided by the fire departments in the study area.

Distribution

The seven agencies within this study are geographically located on the western edge of the City of Cleveland, Ohio. The following figure illustrates the participating fire agencies within this study, their fire station locations, and respective response areas.

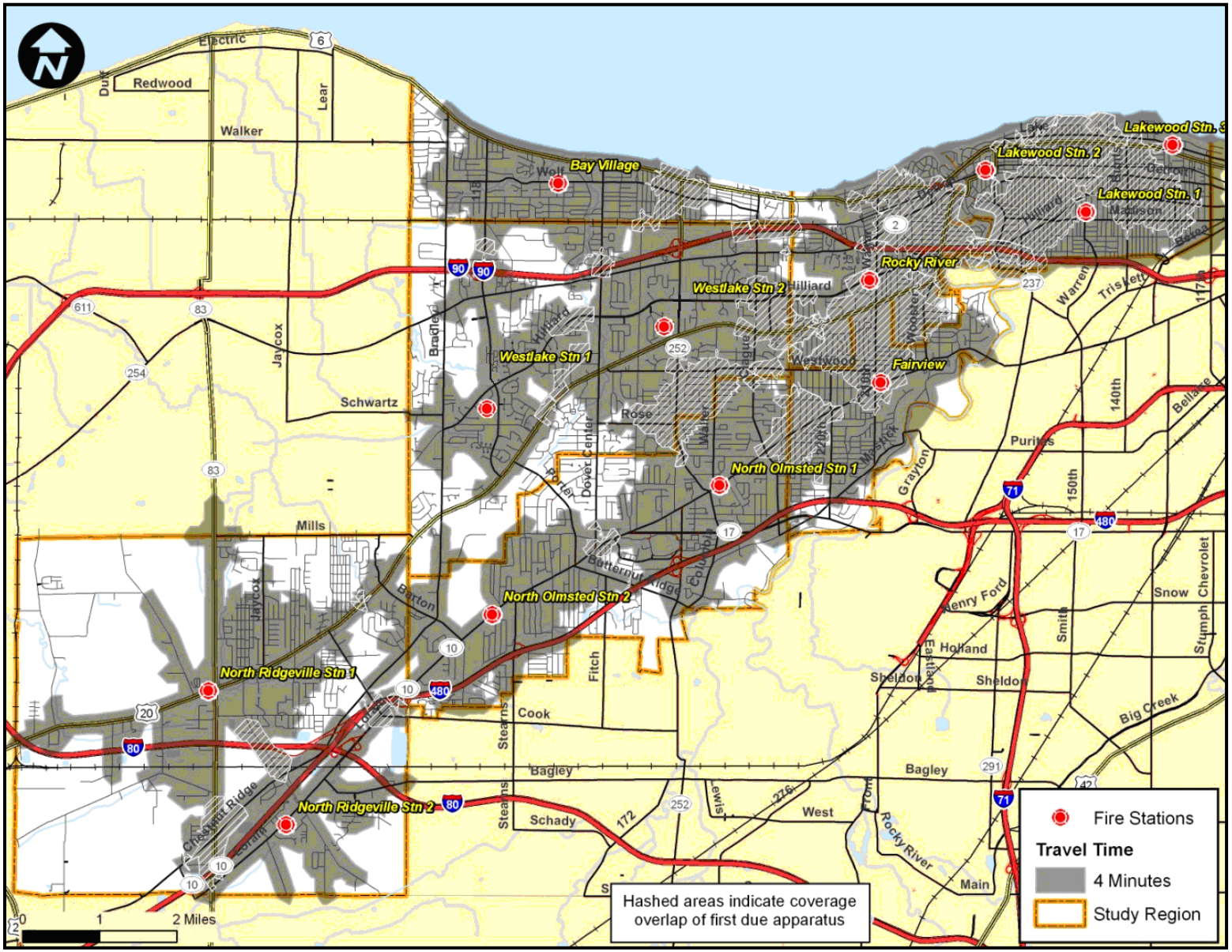
Figure 55: Facility Deployment & Fire District Areas



Four of the fire departments have multiple fire stations (Lakewood, North Olmsted, North Ridgeville, and Westlake) while the remaining three departments (Bay Village, Fairview Park, and Rocky River) operate from single facilities.

The following map demonstrates a modeled four-minute travel time capability from fire stations for each department in this study. The time is calculated by modeling travel time on the actual roadway network. Reduction of speed has been utilized to account for negotiating turns and intersections with a multi-ton apparatus.

Figure 56: Current Travel Time Capability



There are areas of coverage overlap and areas of coverage gap within the study area. Gaps and redundancy in coverage will be addressed later in this report.

Insurance Credentialing Criteria

The next set of maps examines each fire department's coverage based upon credentialing criteria for the Insurance Services Office (ISO). The ISO reviews the fire protection resources within communities and provides a Public Protection Classification™ (PPC) rating system from which insurance rates are often based. The rating system evaluates three primary areas: the emergency communication and dispatch system, the fire district, and the community's pressurized hydrant or tanker-based water supply. The overall rating is then expressed as a number between 1 and 10, with 1 being the highest level of protection and 10 being unprotected or nearly so. It is also important to note that, according to the Insurance Services Office website information on the PPC™ minimum criteria, "the ISO generally assigns Class 10 to properties beyond five road miles" from a fire station.[43]

A community's PPC™ can affect decisions insurers make regarding the availability and price of property insurance. Many insurance companies make at least some use of the classification to price their policies, determine which types of coverage to offer, or to determine deductibles for individual homes and businesses. Notwithstanding the community's classification, individual insurance companies establish their premiums, not the Insurance Services Office. The particular system that any given company uses when calculating premiums for property insurance may be affected by that company's fire-loss experience, underwriting guidelines, and marketing strategy. This makes it extremely difficult to generalize how any improvement or decline in the PPC™ rating will affect specific insurance policies or premiums.

The following figure shows how insurance premiums might vary for two typical structures under a couple of insurance companies' current rating schedules. While these figures are reasonable examples of the impact the PPC™ can make on insurance premiums, the value of the premium credits for the different PPC™ ratings will vary among insurance companies. This chart was obtained from a report published by the League of Minnesota Cities entitled *The ISO Fire Protection Rating System*.

[43] Information obtained from the Insurance Services Office website, www.isomitigation.com.

Figure 57: Representative Insurance Premiums by Public Protection Class

Fire Class	$150,000 Residence	$1,000,000 Office Building
1	$670	$2,950
2	$670	$2,980
3	$670	$3,020
4	$670	$3,040
5	$670	$3,060
6	$670	$3,120
7	$670	$3,230
8	$777	$3,330
9	$972	$3,440
10	$1,072	$3,710

According to the report, there are some points to note regarding the chart:

- In this schedule, no additional credit is given on residential property for a fire class better than 7. The reason has largely to do with the role that water supply plays in the ratings. Having a better water supply helps in fighting fires in larger commercial structures, and therefore is reflected in a better rating. But for most residential fires a lesser water supply is actually needed, and having more than that available really doesn't help the fire district fight that particular residential fire any better. There's some variation among insurance companies (e.g., some might allow additional credit for class 6, others might lump classes 7 and 8 together for rating purposes, etc.) but this general pattern is fairly typical for residential premium structures.
- Not all insurance companies use the ISO classifications. This is especially true for residential coverage. Some companies have their own rating systems based on their own historical loss data for the area rather than on an evaluation of the fire protection in the area. Other insurance companies use their own systems for rating the fire protection for a particular property; a company might classify properties based on the individual property's distance from a fire station and water supply, for example.

Fire station distribution has a rating impact through engine and ladder company distribution credits found in Section 561 of the PPC™ schedule. This section accounts for a four-point maximum of 50 possible points for fire district credit and is rarely the most effective means to pursue for PPC™ improvement. As an example, the number of personnel available (Section 570) is worth 15 out of 50 points and firefighter training (Section 580) is worth nine out of 50 points. In a typical fire district, significant improvements in the quality, quantity, and documentation of training can result in greater credit improvements at much less cost than the addition of fire stations to improve credit under the distribution section.

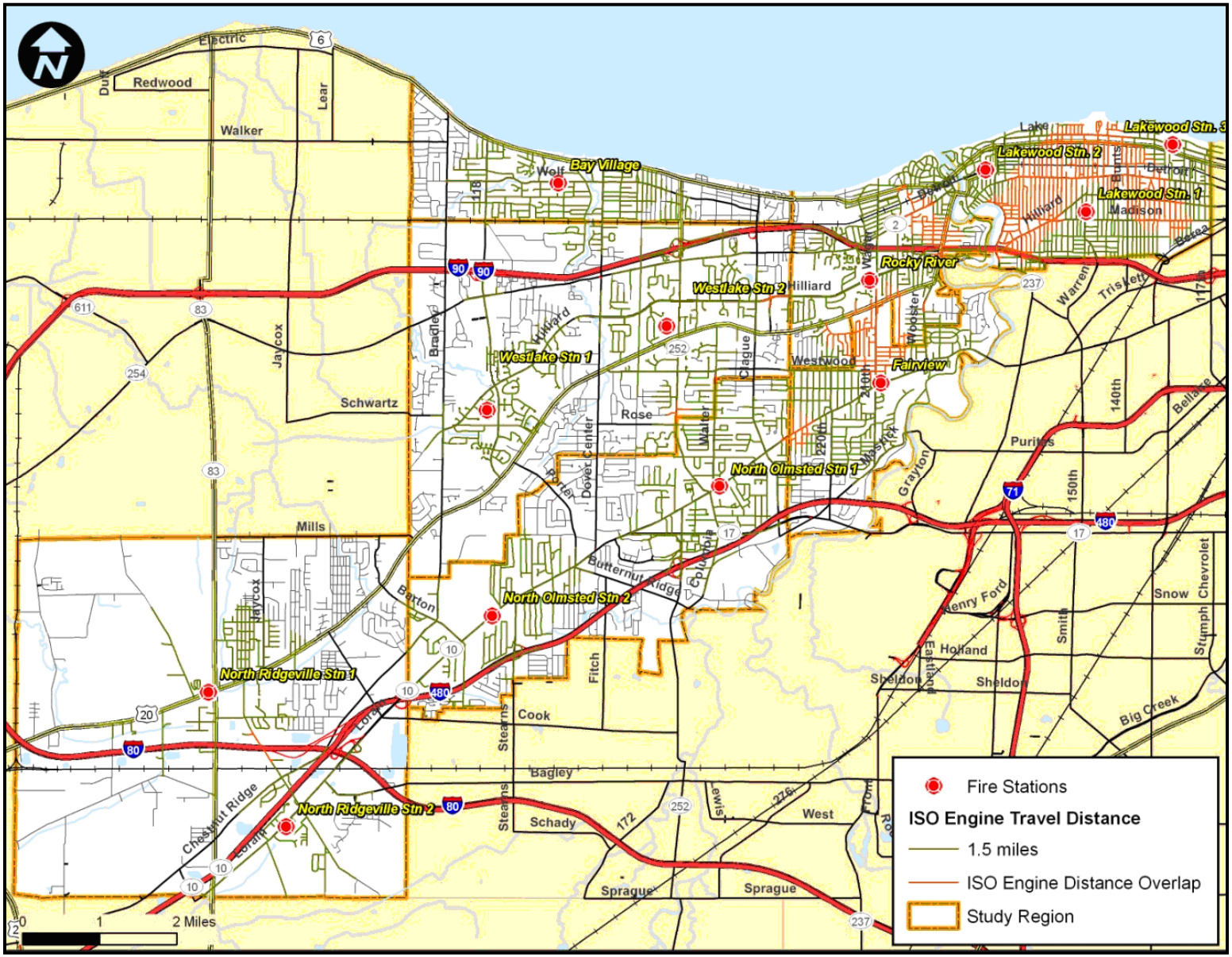
Figure 58: Latest Available ISO Ratings by Department

Jurisdiction	Fire Department 50 Possible	Water System 40 Possible	PPC Score
Bay Village	23.49	33.39	5
Fairview Park	25.07	32.83	4
Lakewood	38.39	35.28	3
North Olmsted	24.83	35.52	4
North Ridgeville	20.61	27.94	5
Rocky River	25.64	32.96	4
Westlake	29.29	34.59	4

While distribution credits in the PPC™ may not be the most important factor in the decision to add facilities, it is acknowledged that this issue does affect the community's rating classification and should be considered. The next few paragraphs of the report examine the travel coverage based upon the PPC credentialing criteria by the Insurance Services Office.

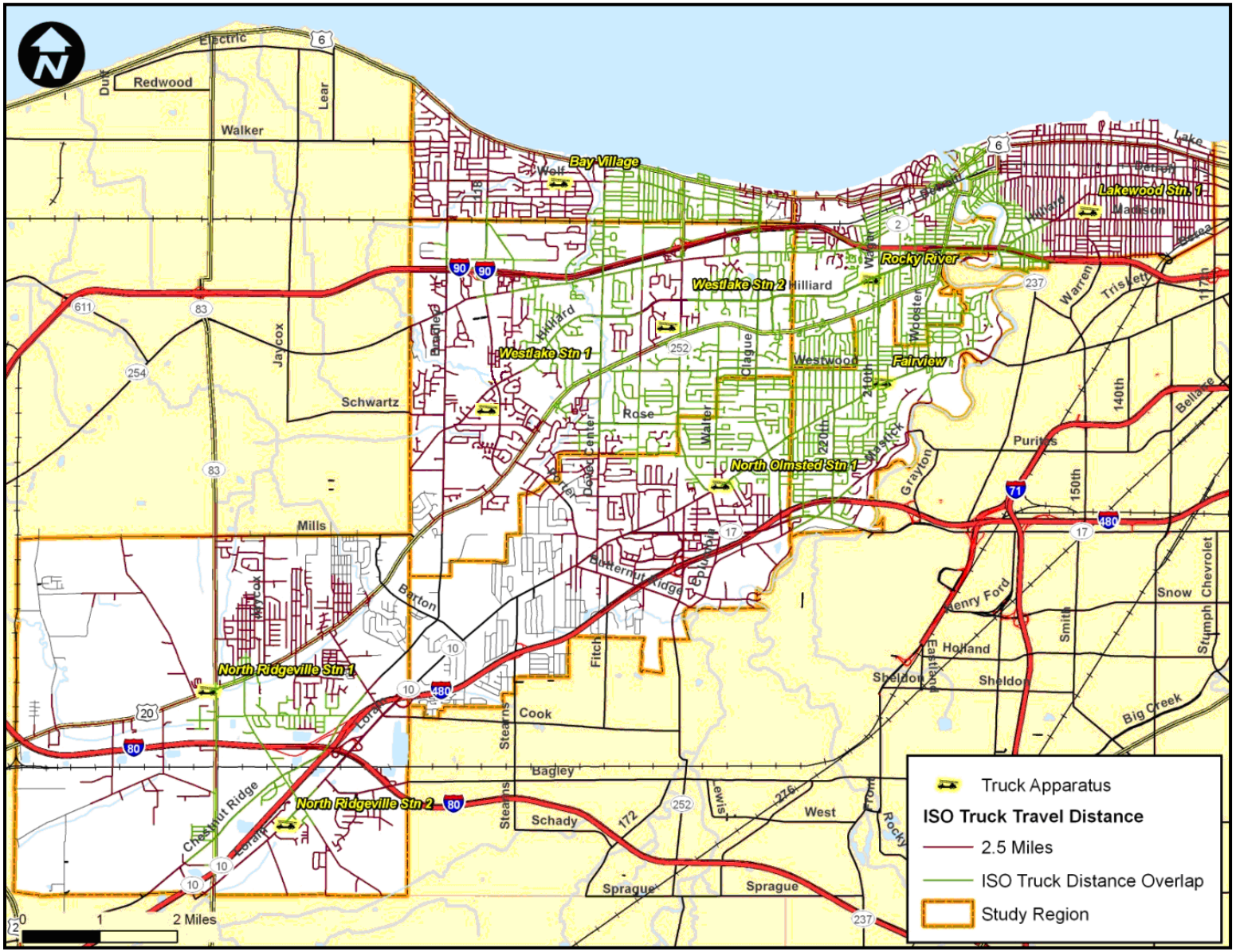
To receive maximum credit in this section, all "built-upon" portions of a community would need to be within 1.5 road miles of an engine company and 2.5 road miles of a ladder or service company. In order to determine the distribution of engine companies across "built upon" areas, ISO reviews the response area of each existing engine and identifies the number of fire hydrants within those response areas. ISO analyzes whether there are additional geographic areas of the district outside of the existing engine company response where at least 50 percent of the number of hydrants served by the largest existing response area could be served by a new engine. For ISO purposes, the response area is measured at 1.5 miles of travel distance from each engine company on existing roadways. In order for a structure to be in a protected rating for insurance purposes, it should be within five miles of a fire station, although there were no areas in the fire district that would be affected by this.

Figure 59: ISO Engine Distance



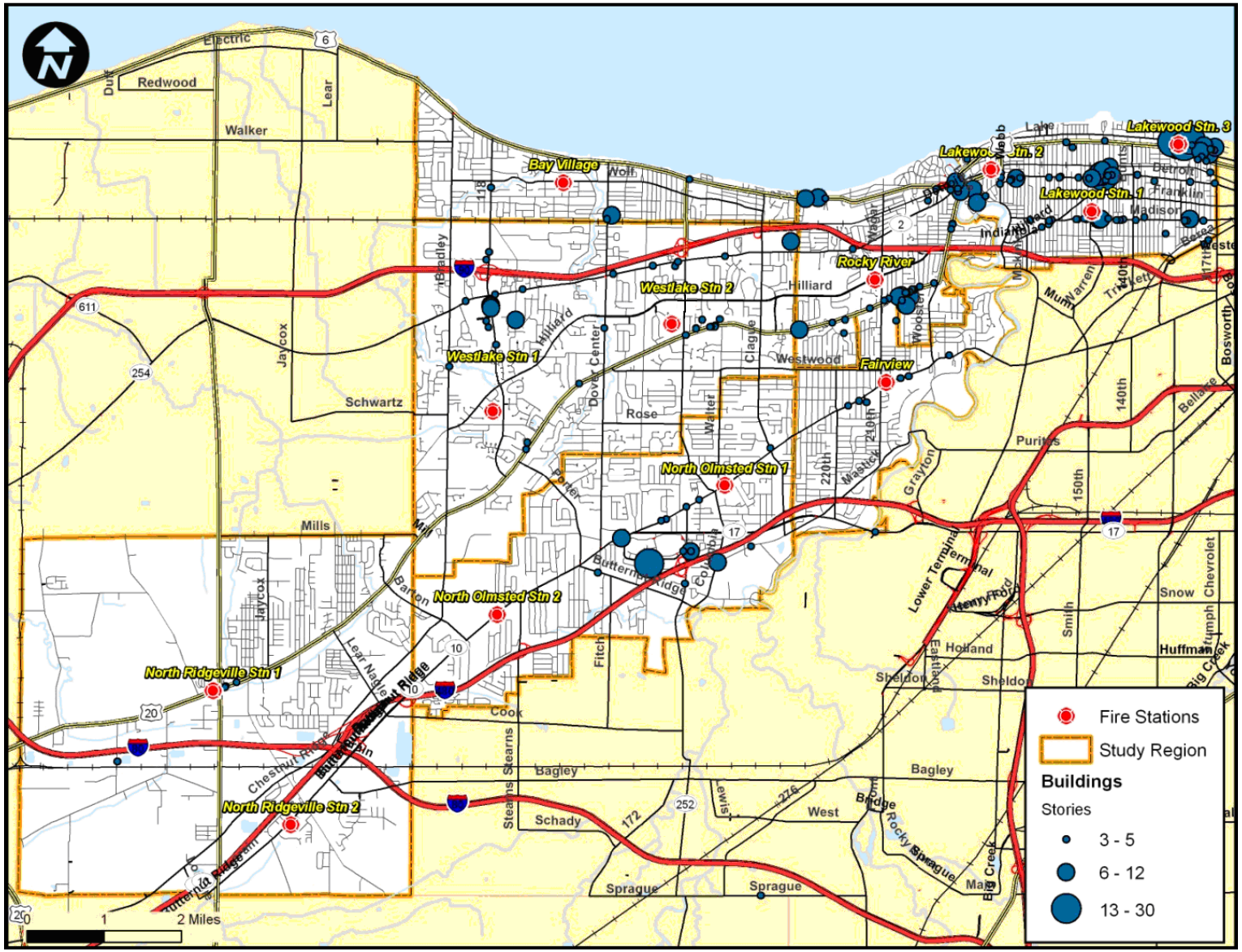
In similar fashion, to achieve optimum credit for the number of truck companies, ISO reviews the response area of each existing ladder company and identifies the number of fire hydrants within those response areas. ISO analyzes whether there are additional geographic areas of the district outside of the existing ladder response areas where at least 50 percent of the number of hydrants served by the largest existing response area could be served by a new truck, were one to be added. For ISO purposes, the response area is measured at 2.5 miles of travel distance from each ladder company on existing roadways.

Figure 60: ISO Truck Distances



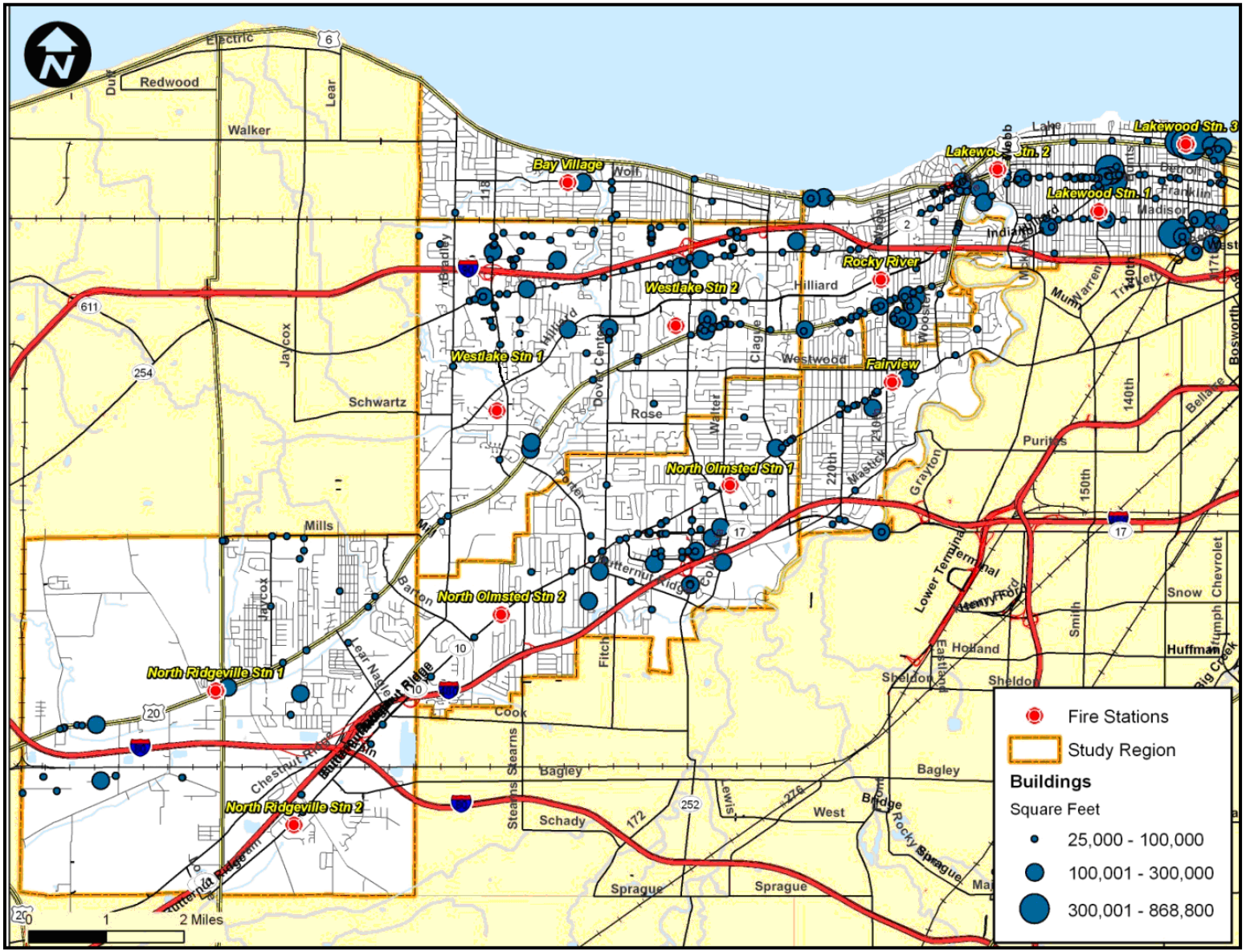
Ladder apparatus are essential for firefighting tactics, especially within multi-storied buildings and large square footage structures. The following map locates the multi-storied buildings in the region that are part of the Insurance Service Office (ISO) occupancy database. It should be noted that not every multi-storied building is shown on the map, only those available in the latest ISO data. While this would include the majority of such occupancies, some structures are not insured by an ISO participating insurer and may be omitted from the dataset. For instance, the Westbury apartment building in North Olmsted does not appear in the ISO mapped data.

Figure 61: Multi-Story Buildings



The highest concentration of multi-story buildings is located in Lakewood near the fire stations equipped with ladder apparatus. The following map compares the ladder apparatus locations and their ISO-recommended distance against structures surveyed to be in excess of 25,000 square feet in area that are part of the Insurance Service Office (ISO) occupancy database. It should be noted that not every large square footage building is shown on the map, only those available in the latest ISO data. While this would include the majority of such occupancies, some structures are not insured by an ISO participating insurer and may be omitted from the dataset. For instance, the Great Northern Mall and the Bay Village High School are not included in the ISO mapped data.

Figure 62: Large Square Footage Structures

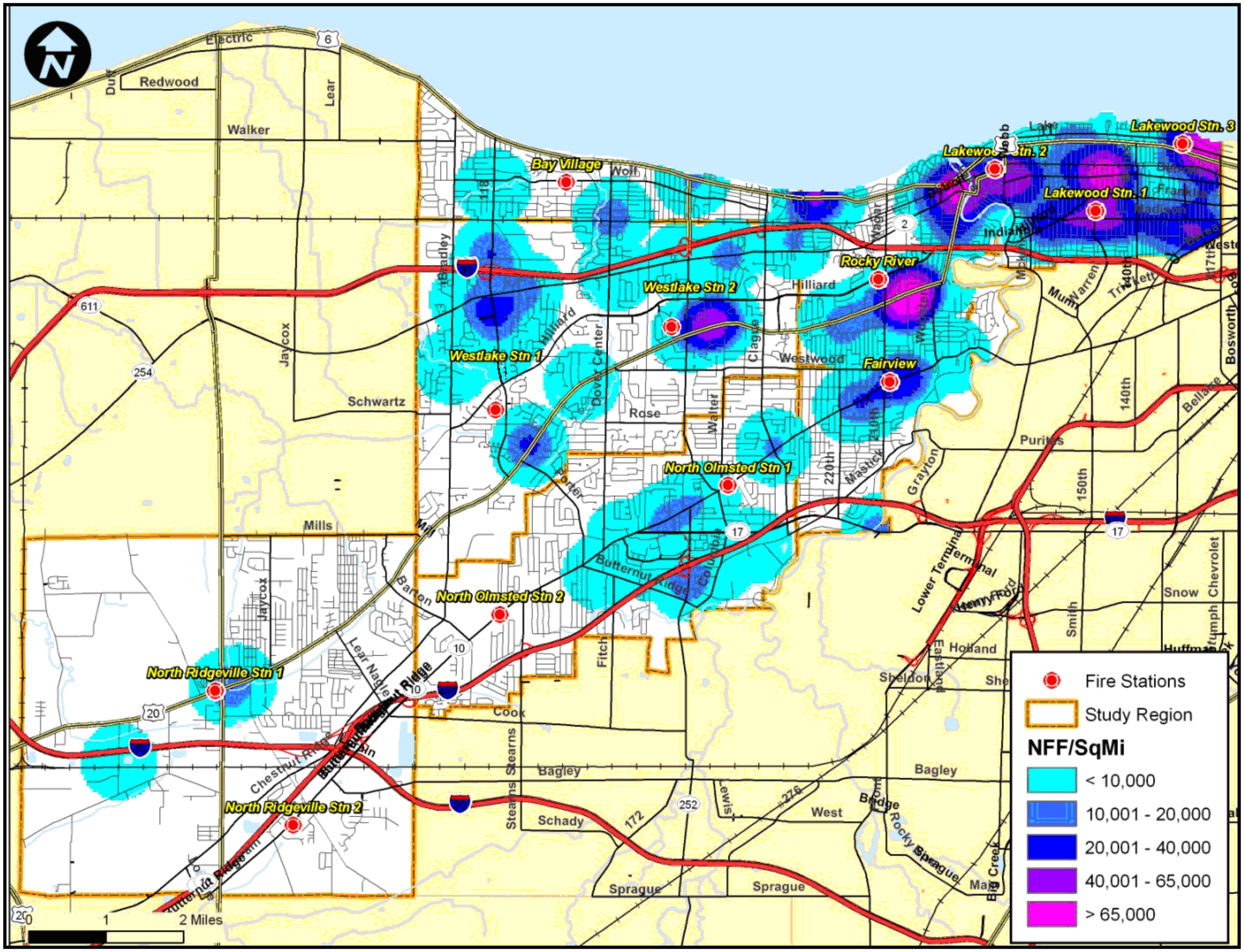


While the highest concentration of large buildings is clustered in Lakewood, a closer look reveals other structures throughout the service area that would require such an apparatus for specialized services in the event of a fire.

A ladder company is not required to have an elevating ladder or aerial device unless there are a sufficient number of buildings that would meet the three-story height and square footage limits. Other areas can receive similar credit for a service company without the requirement of an elevated device and can even receive partial credit for a service company if other apparatus, such as an engine, carries a complement of service company equipment.

Aside from the larger structures, the ISO surveyed other buildings within the study area and determined a Needed Fire Flow (NFF), or the amount of water in gallons per minute (gpm), that a structure would require in the event of a fire based upon its size, roof type, constructive materials, and other factors. The following map illustrates the concentration of NFFs within the study area when all surveyed buildings are taken into consideration on a per-square-mile basis.

Figure 63: Needed Fire Flow Concentration



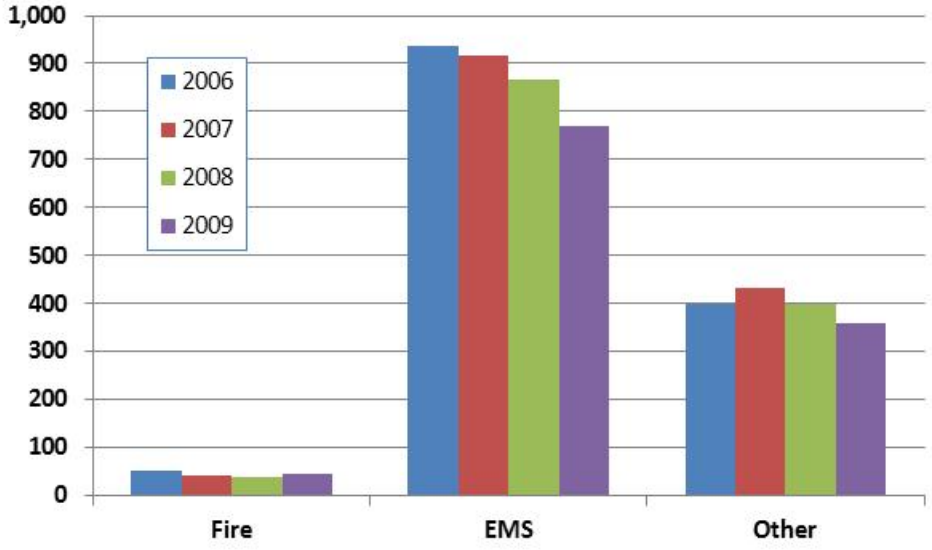
Service Demand Analysis

Before the response time analysis is discussed, it is important to first examine the level of workload, or service demand, upon the fire departments.[44] Higher service demands can strain the resources of a department and may result in poor response time performance. The departments within this study provided incident data in various formats for analysis of workload levels.[45] This analysis includes calls a department handled within and outside its response area as this reflects total workload. Each agency is evaluated separately and followed by a summary chart for overall comparison. Call types were combined into three general categories: fire, medical or rescue, and other types of calls (such as a fire alarm). To begin, workload is examined on a yearly basis by call type and by agency.

Bay Village Fire Department

Figure 64 illustrates that BVFD has experienced a slight decrease in EMS and other call types over the last four years.

Figure 64: BVFD Workload History by Call Type, 2006 – 2009



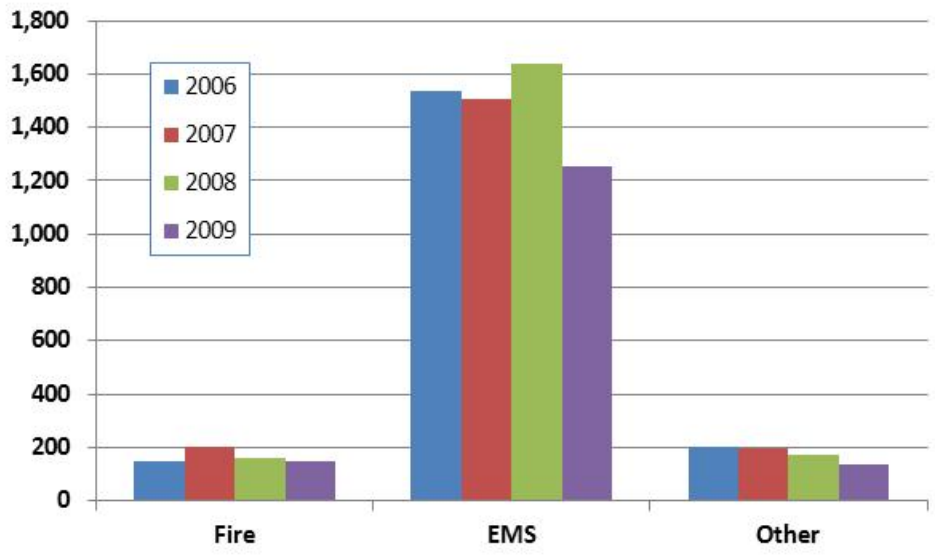
The number of fire responses by BVFD decreased approximately 11 percent between 2006 and 2009 (52 versus 47).

[44] Note: Value increments on the vertical axis vary between fire departments.
[45] 2009 data is partial due to data collection in November of 2009.

Fairview Park Fire Department

FPFD has responded to a similar amount of fire calls year to year. A reduction in medical/rescue calls and other non-fire related incidents yields a decrease in overall service demand as illustrated in the following chart (Figure 65).

Figure 65: FPFD Workload History by Call Type, 2006 – 2009

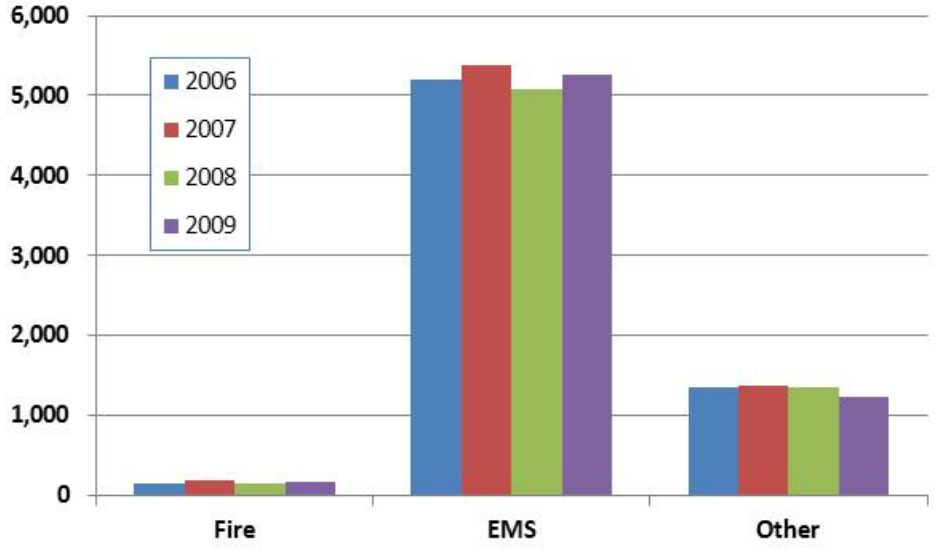


Between 2006 and 2009, responses by the FPFD decreased approximately 18 percent.

Lakewood Fire Department

Calendar year 2007 was a busier than average year for LFD in terms of overall workload. Generally speaking, during the four years service demand for LFD has been relatively stable.

Figure 66: LFD Workload History by Call Type, 2006 – 2009

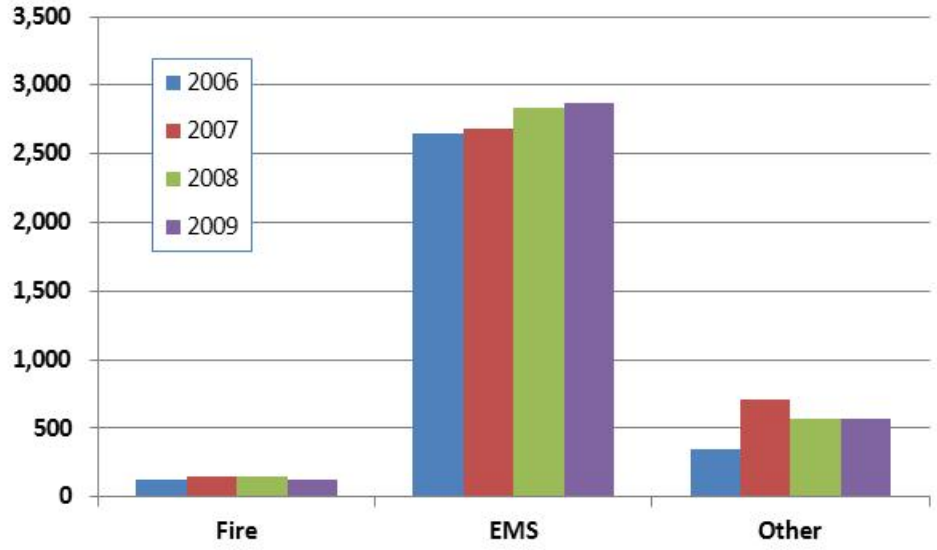


The total number of calls for service for LFD in 2006 was 6,721 and 6,662 in 2009, a variation of only 59 responses.

North Olmsted Fire Department

Total service demand has been increased slightly for the NOFD over the last four years.

Figure 67: NOFD Workload by Call Type, 2006 – 2009

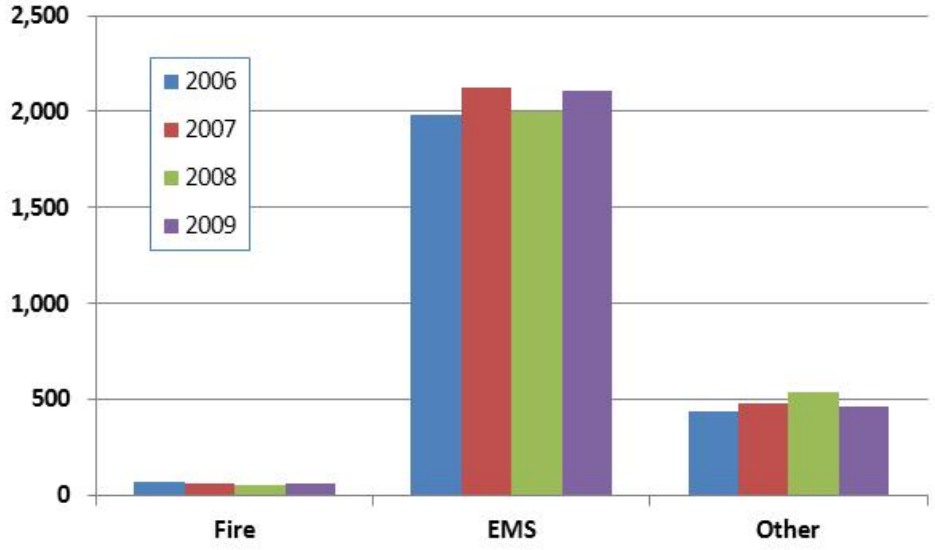


Between 2006 and 2009 the number of responses by the NOFD increased approximately 14 percent.

North Ridgeville Fire Department

A rise in medical/rescue calls and other non-fire type incidents increased the overall workload for NRFD, as seen in the following figure (Figure 68).

Figure 68: NRFD Workload by Call Type, 2006 – 2009

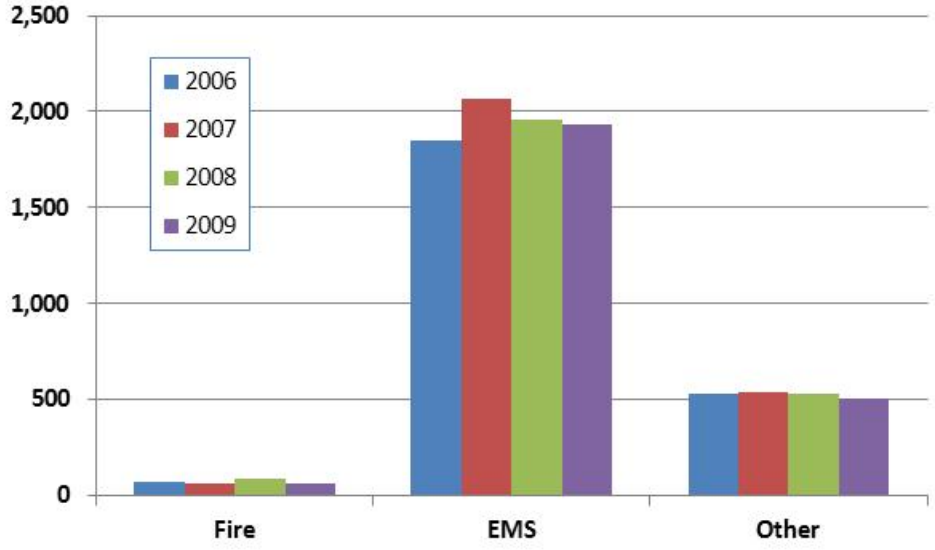


Total calls for service increased approximately 6 percent between 2006 and 2009.

Rocky River Fire Department

Rocky River Fire Department has had a net increase in medical/rescue calls for the last four years, resulting in 1,936 EMS responses in 2009.

Figure 69: RRFD Workload by Call Type, 2006 – 2009

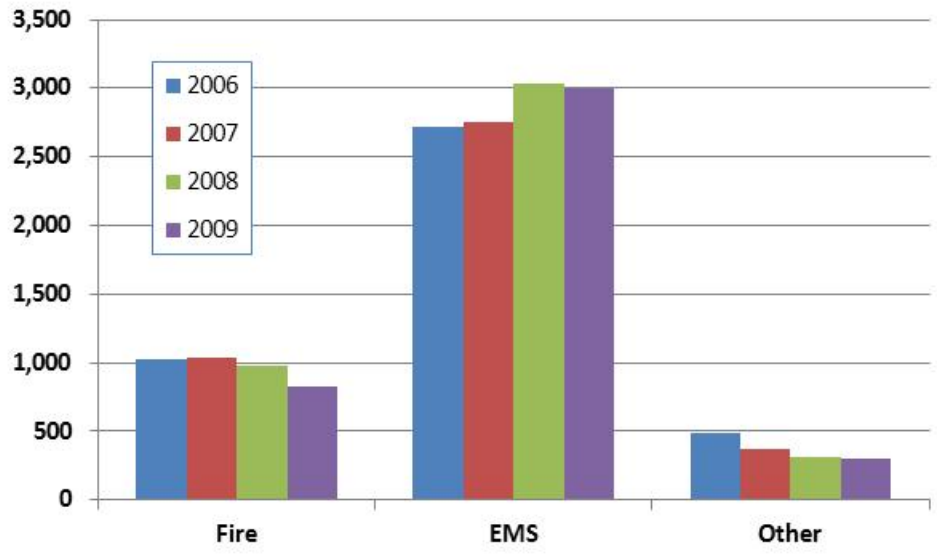


Between 2006 and 2009, fire responses for RRFD have decreased approximately 17 percent; total call volume increased 2 percent.

Westlake Fire Department

WFD experienced a decline in fire and other call types from 2006 to 2009, but has recorded an increase in medical/rescue calls as seen below.

Figure 70: WFD Workload by Call Type, 2006 – 2009



Interestingly, while fire responses decreased approximately 10 percent in 2009 from 2006, total responses increased 2 percent.

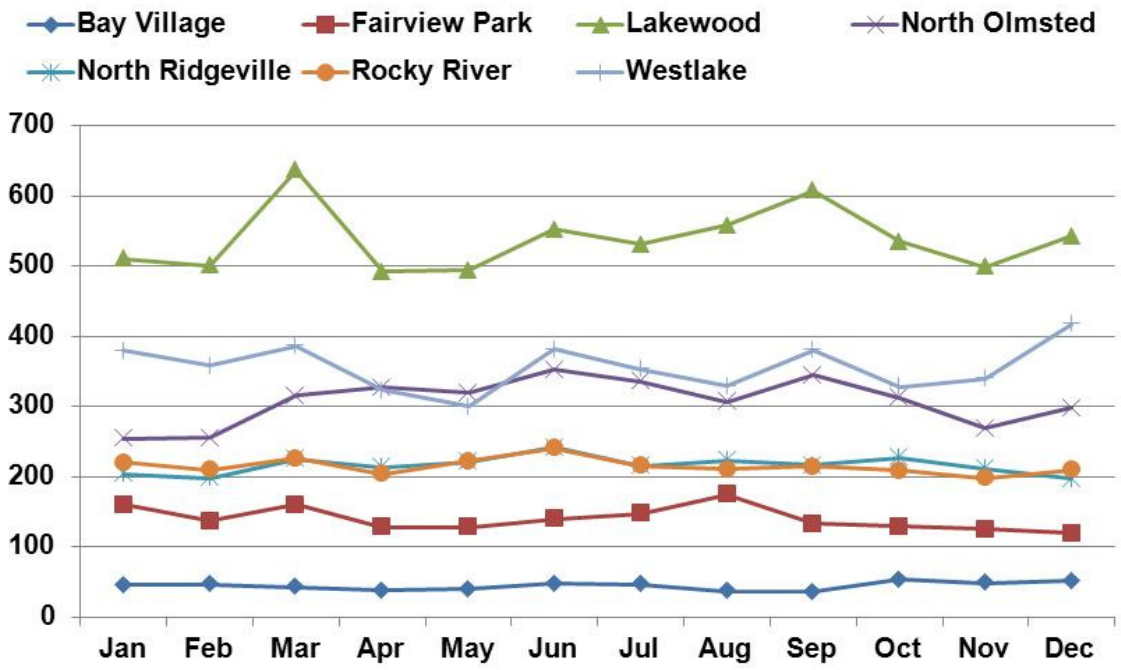
For all of the departments, the majority of their workload is related to medical/rescue responses. In evaluating the region as a whole, over 75 percent of the calls for services are medical/rescue incidents. Individually, the percentage of medical/rescue responses compared to total workload is varied, as shown in the following table that details information from the 2009 calendar year.

Figure 71: Percentage of Medical/Rescue Responses to Total Workload, 2009

Department	Percent EMS
Bay Village	65.50%
Fairview Park	81.52%
Lakewood	78.82%
North Olmsted	80.40%
North Ridgeville	79.78%
Rocky River	77.22%
Westlake	72.62%
Overall	**77.34%**

A review of incidents by time of occurrence also reveals when the greatest response demand is occurring. The following charts show how activity and demand changes for the fire departments within the study area based on various measures of time. ESCI began by breaking down yearly workload into monthly increments for the last full year of data (2009).

Figure 72: Monthly Workload



Historically, workload for all the fire departments is relatively stable throughout the year. Spikes in activity are notable in March and September for several agencies.

The next figure (Figure 73) examines the workload by day of the week to determine variations and when or if the fire departments experience higher demand.

Figure 73: Workload by Day of Week

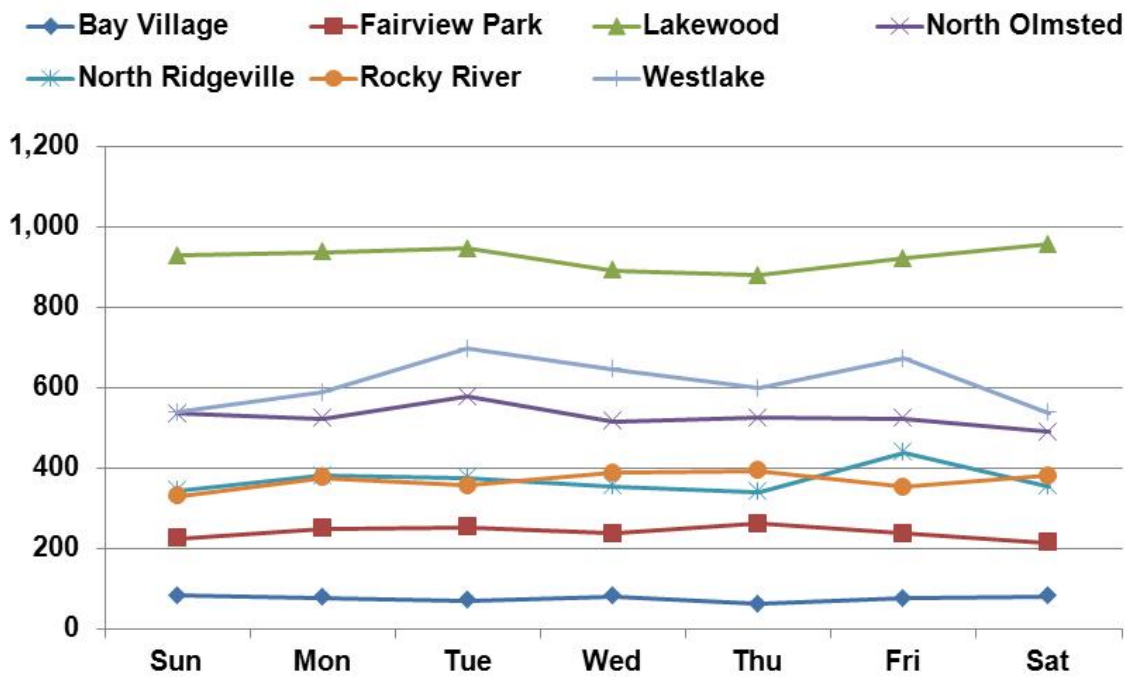
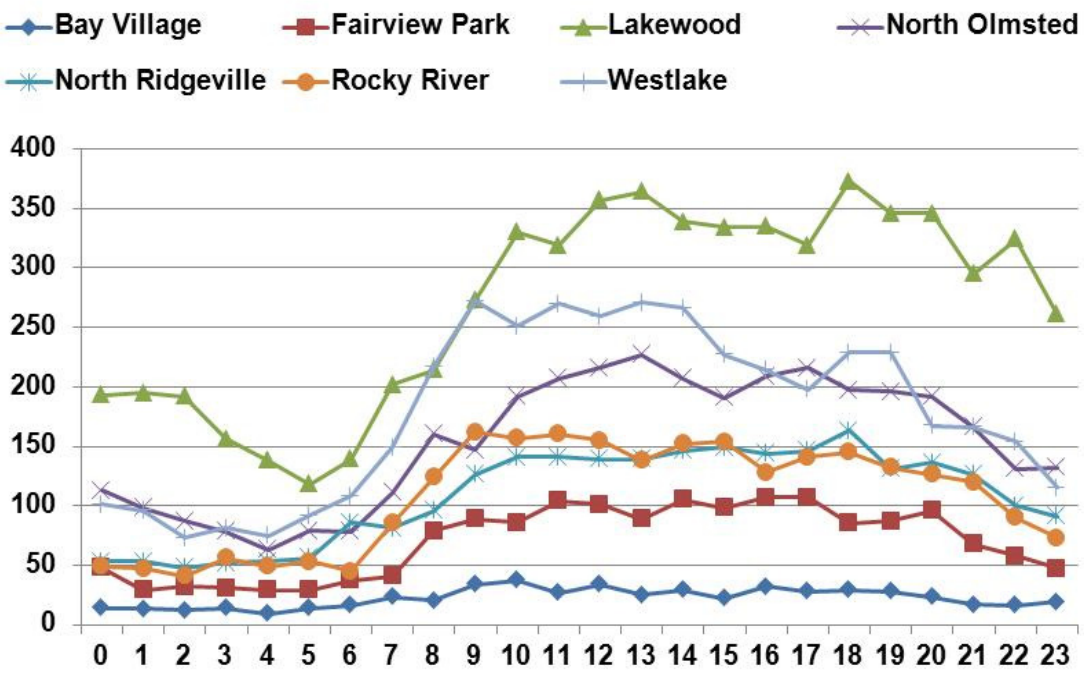


Figure 73 illustrates that while there are slight variations in the day of week workload; while Tuesday is a little higher, no one day is significantly greater than another.

The final analysis of historical workload is the examination of call by hour of day. The hours of peak activity can strain an under-equipped or under-staffed fire department.

Figure 74: Hourly Workload



A similar pattern of daytime workload is exhibited by the hourly workload analysis for all the fire departments and is reflective of the level of human activity during these times. Fire department activity begins to increase around 6:00 a.m. and increases for most departments until mid-afternoon. A very gradual decline in response activity occurs in the evening. Lakewood Fire Department experiences a higher spike in activity in the late morning and stays busier through the evening hours compared to the other study departments.

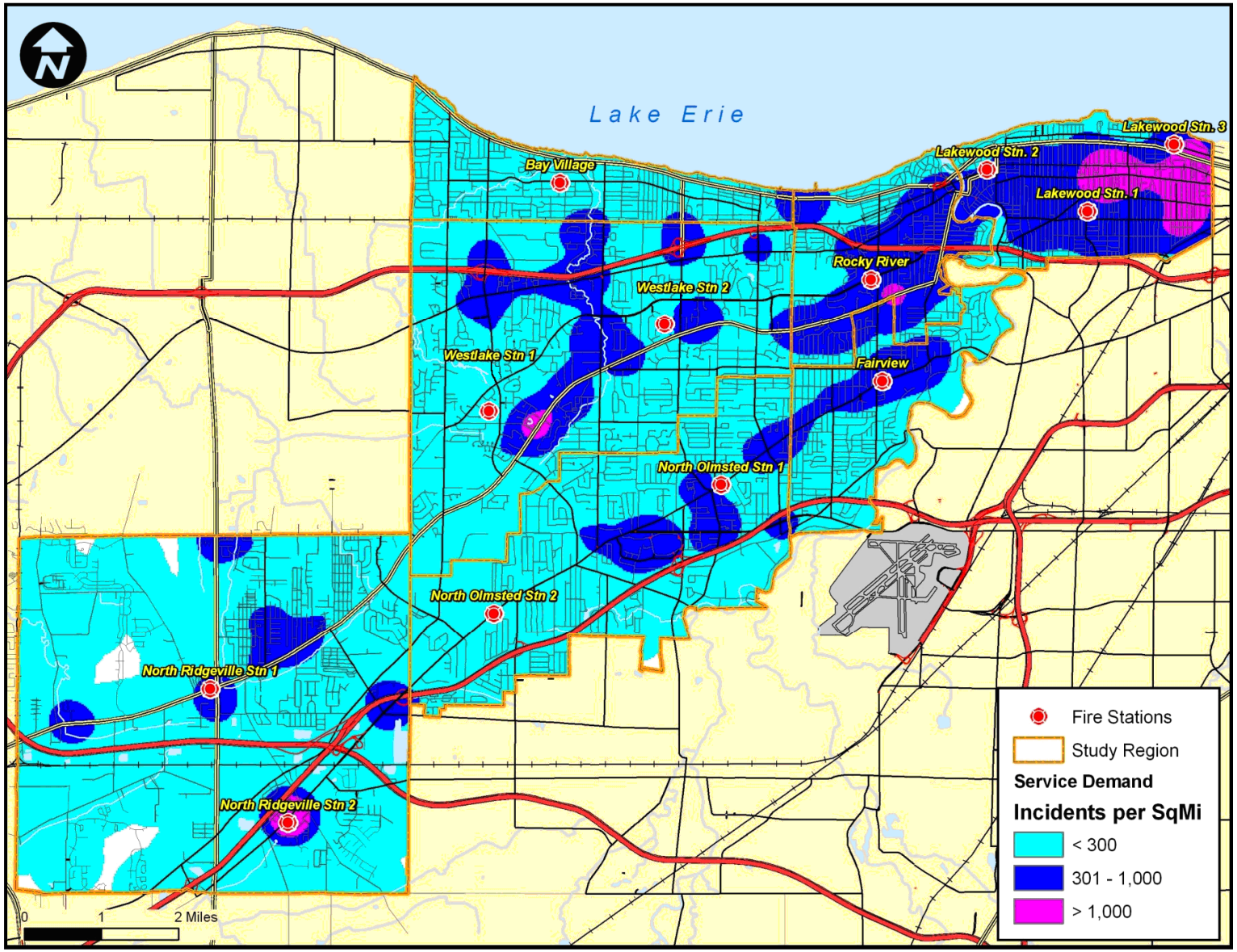
Peak activity times can be reflected in response time performance in certain cases. The impact of response time on the outcome of emergency incidents has been exhaustively studied, both in the laboratory and in historical data, with predictable correlation between the two. Though seemingly intuitive, it is still useful to review how longer response times can have a negative effect on the ability to suppress fires, particularly in structures, or to successfully intervene in a life-threatening medical emergency. Response time performance is examined in a separate section.

In addition to the temporal analysis of the current service demand, it is useful to examine geographic distribution of that demand. Later in this study, this geographic evaluation will allow for assessing the location of fire stations in comparison to the actual service demand within the

area. The following map series indicates the distribution of emergency incidents responded to by each fire department during the last year's worth of data.[46]

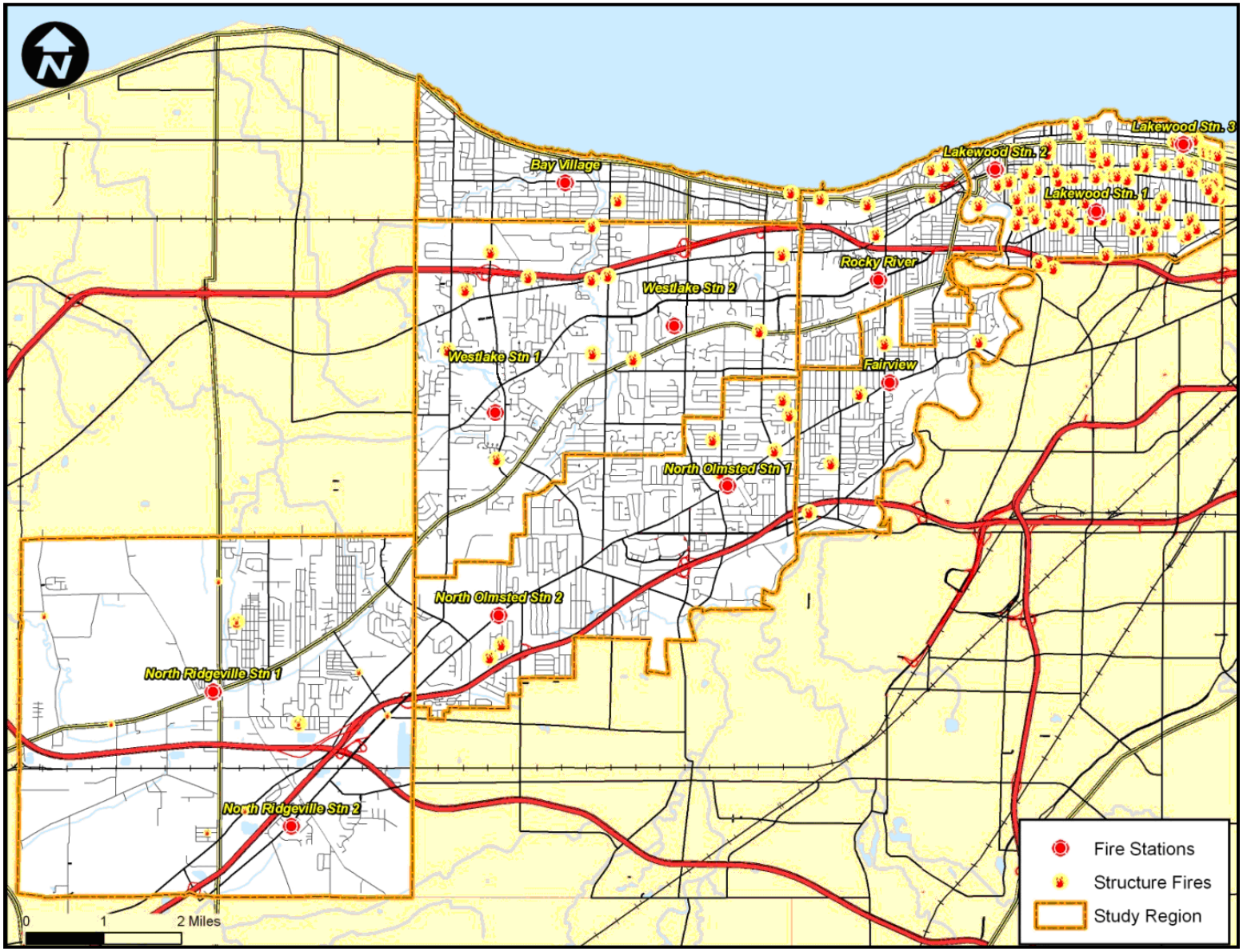
[46] 90 percent or greater of incidents were plotted geographically.

Figure 75: Regional Service Demand Density



While the preceding map reflects all calls for service for the region, it can be influenced by the prevalence of medical requests. The following map illustrates the location of structure fires that were handled by the departments within the study area over the same time period. It illustrates that the majority of reported fire incidents were within the City of Lakewood.

Figure 76: Service Demand – Structure Fires

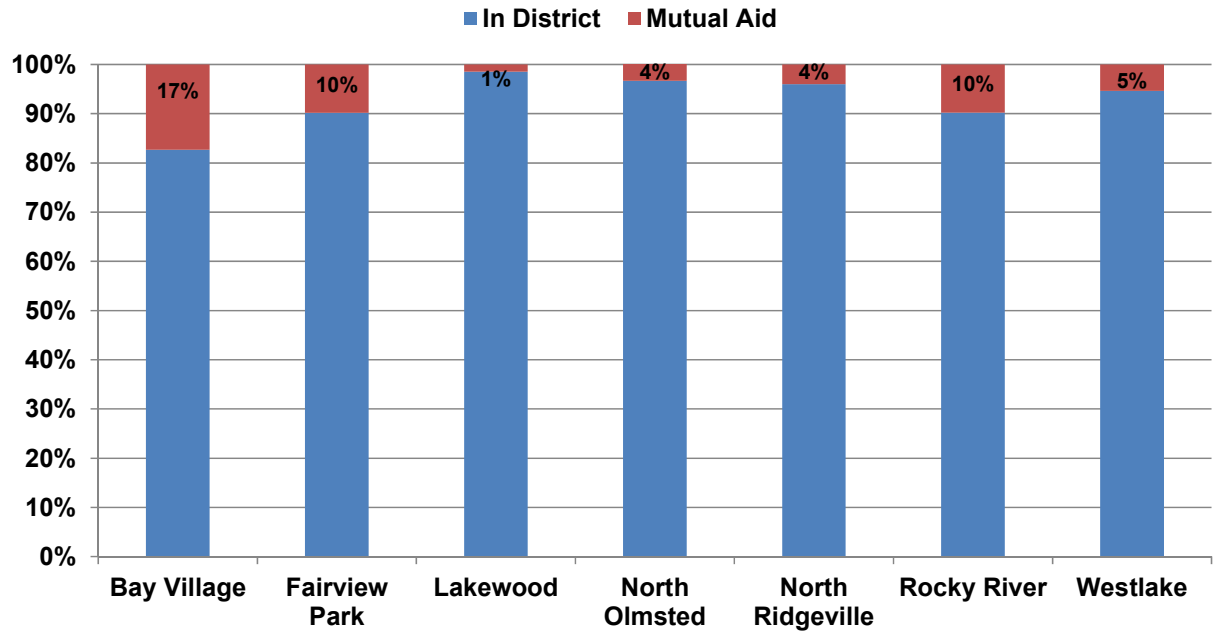


Reliability Analysis

The workload on emergency response units can also be a factor in response time performance. The busier a given unit, the less available it is for the next emergency. If a response unit is unavailable, then a unit from a more distant fire station must respond, increasing overall response time. A cushion of surplus response capacity above average values must be maintained due to less frequent, but very critical times, when atypical demand patterns appear in the system. Multiple medical calls, simultaneous fires, multi-casualty events, or multiple alarm fires are all examples.

Many times, multiple agencies are dispatched to a single alarm and this is reflected in the preceding analysis as it is part of a department's total workload. This total workload for each department is summarized for the last year in the following chart (Figure 77). Additionally, calls that were located outside of a department's response area were calculated for comparison with calls that occurred within the department's own area.

Figure 77: Total Workload History Comparison & Mutual Aid Workload



The fire departments have differing levels of workload, both within and away from their primary response area. LFD had little discernable mutual aid data in its incident database for 2008. While mutual aid between departments is common, this practice reduces resources otherwise

available for an agency. To the degree that this occurs, the reliability of a department can be negatively affected.

Call Concurrency and Resource Drawdown

One way to look at resource workload is to examine the amount of time multiple calls occur within the same time frame on the same day. ESCI examined the calls during the last year's worth of data to find the frequency that a fire department is handling multiple calls within any given time frame. This is important because the more calls occurring at one time can stretch available resources and extend response times from distant responding available apparatus.

Figure 78: Call Concurrency Rates

	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Single	97%	90%	62%	84%	74%	82%	76%
2	3%	9%	26%	13%	20%	15%	20%
3		1%	8%	2%	5%	2%	4%
4		<1%	3%	<1%	1%	<1%	1%
5			1%	<1%	<1%		<1%
6			<1%	<1%	<1%		
7			<1%	<1%			
8			<1%	<1%			
9			<1%				
10			<1%				
11			<1%				

For the study fire departments, calls for service occur singularly most of the time. However, as communities grow, the propensity for concurrent calls increases. When the concurrency reaches a level to which it stretches resources to near capacity, response times begin to extend. Although multiple medical calls will cause drawdown, especially as concurrency increases, they usually occupy only one unit at a time. Concurrent fire calls, however, are of more concern as they may require multiple unit responses for each call depending upon the dispatch criteria. Typically, "other" calls that are not actual fires or medical calls have higher rates of concurrency than fires and depending on the dispatch criteria, may create periods of extensive resource drawdown. To measure the extent of resource drawdown, calls were examined for the amount of apparatus that responded. The following table details the instances and the depth of multiple apparatus responding to calls for each fire department within the study area.

Figure 79: Resource Drawdown

Apparatus per Call	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
1	85%	83%	85%	93%	79%	83%	70%
2	13%	14%	13%	3%	14%	13%	17%
3	2%	2%	2%	3%	5%	3%	9%
4	<1%	<1%	<1%	2%	1%	<1%	4%
5	<1%	0%	<1%	<1%	<1%	<1%	1%
6		<1%			<1%		<1%
7					<1%		<1%
8					0%		
9					<1%		

It is important to note that an area with the highest workload will typically have the highest rate of concurrent calls and resource drawdown. This requires response units from other fire stations, to respond into this area. The impact on fire station area reliability can be affected by several factors such as:

- Out of service for mechanical reasons
- Out of service for training exercises
- Out of area on move-up deployment
- Lack of staffing
- Concurrent calls

When any of the above factors impact the reliability of a fire station to respond within its prescribed territory, response time performance for back-up fire station/apparatus can be negatively affected.

Concentration Analysis

Standard firefighting procedures call for the arrival of the entire initial assignment (sufficient apparatus and personnel to effectively combat a fire based on its level of risk) within a certain amount of time. This is to ensure that enough people and equipment arrive soon enough to be effective in controlling a fire before substantial damage occurs.[47] Because of the cross-staffing of apparatus, scene commanders may make requests for various apparatus from the mutual aid companies depending upon the needs of the incident. The number of firefighters recommended for a structure depends greatly and is discussed in length in another section of this report. For the concentration analysis, typical staffing amounts were utilized as reported to ESCI to illustrate the normal capacity of firefighters available to combat a fire. For each jurisdiction, the

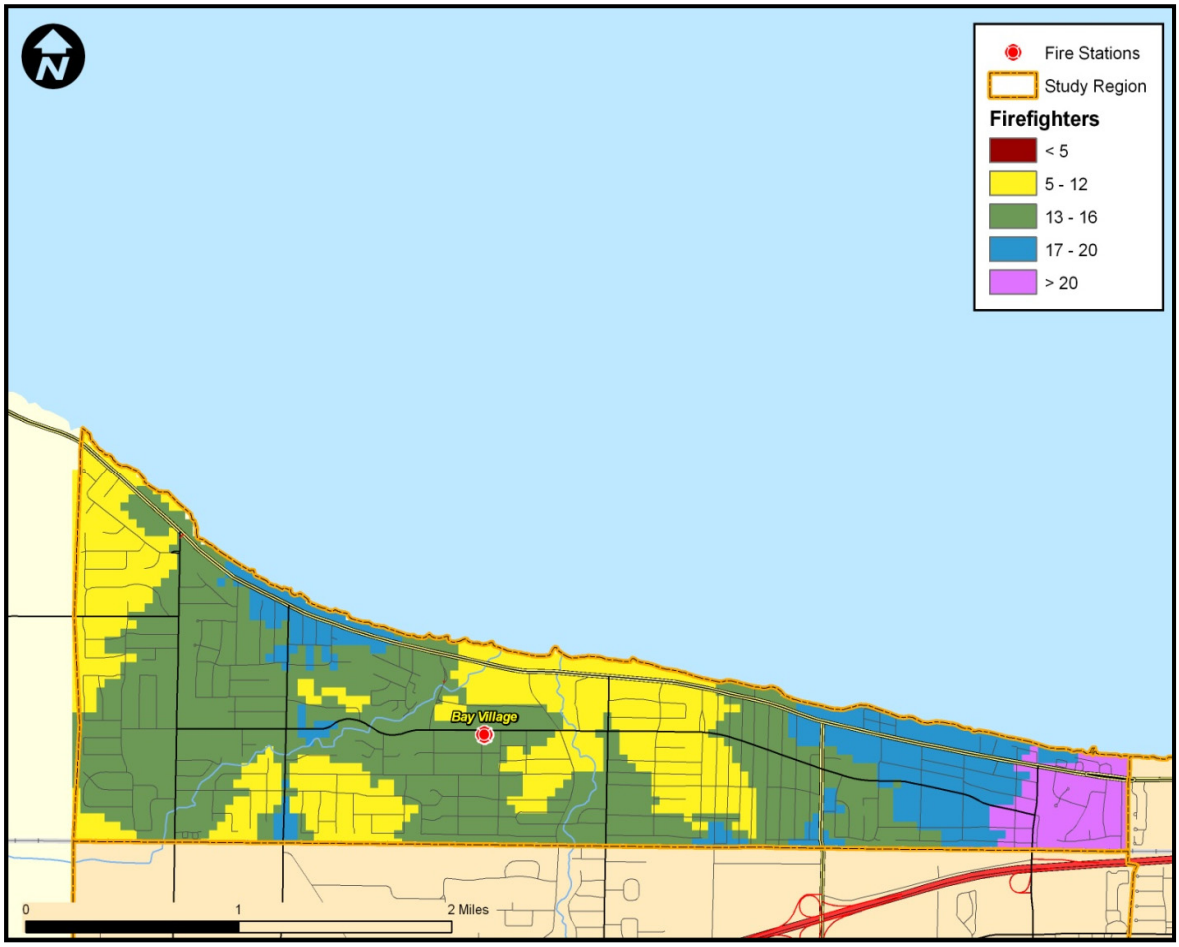
[47] See supplemental discussion about time/temperature curve and the effects of flashover.

full available staff of the host fire department was counted along with four firefighters from each surrounding department.[48] For the departments within the study area, the following map series illustrates the depth of resources and the geographic concentration within an eight-minute travel time, including mutual aid fire station resources.

Bay Village Fire Department

The greatest number of available firefighters can reach the east side of the village due to the arterial roadways that lead into town (Figure 80).

Figure 80: BVFD Effective Response Force – Staffing



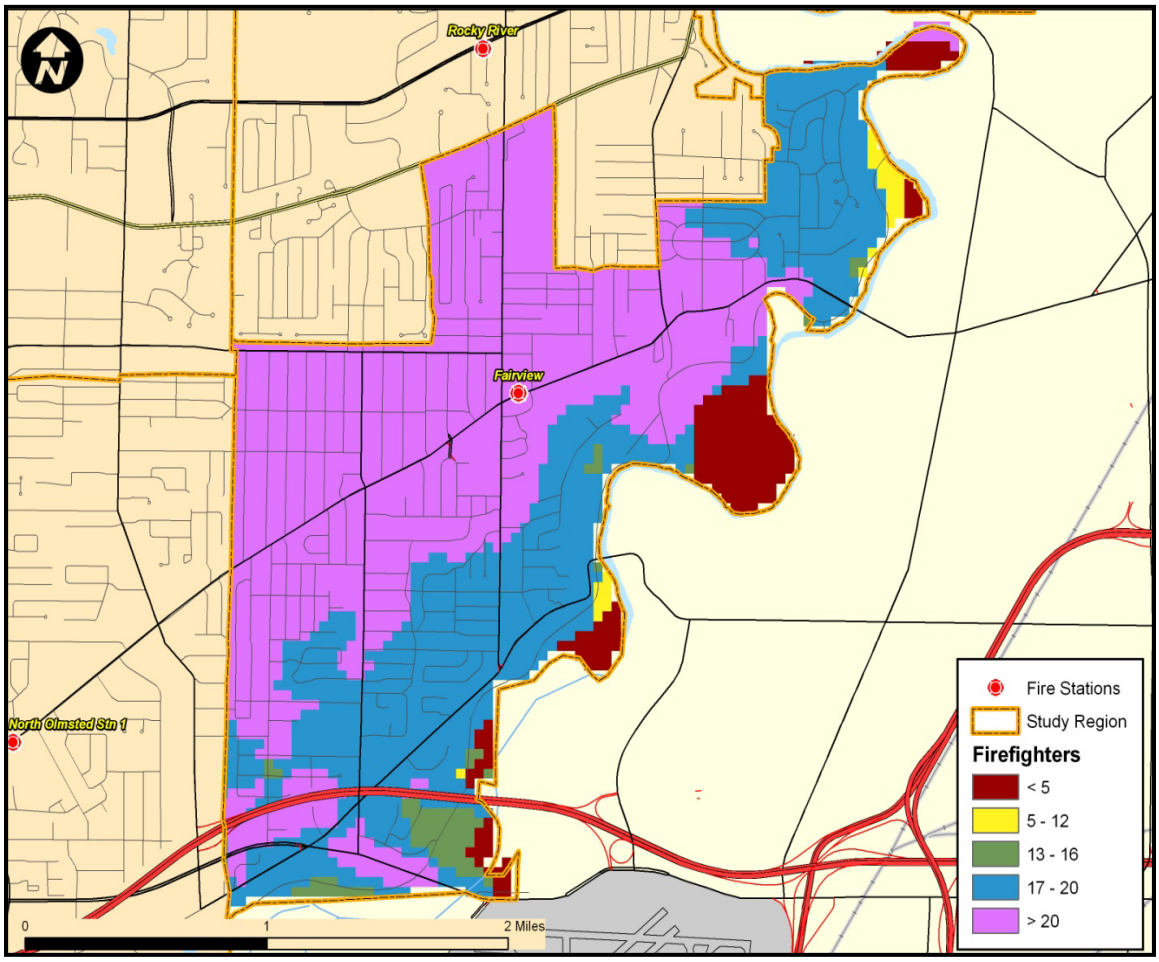
The available response force in portions of the north central, northwest, and southwest section of Bay Village is between 5 and 12 personnel.

[48] Includes departments outside the study area except for the City of Cleveland. Closest station to modeled jurisdiction area used.

Fairview Park Fire Department

The majority of the town can be reached by more than 20 firefighters within eight minutes of travel (Figure 81).

Figure 81: FPFD Effective Response Force – Staffing

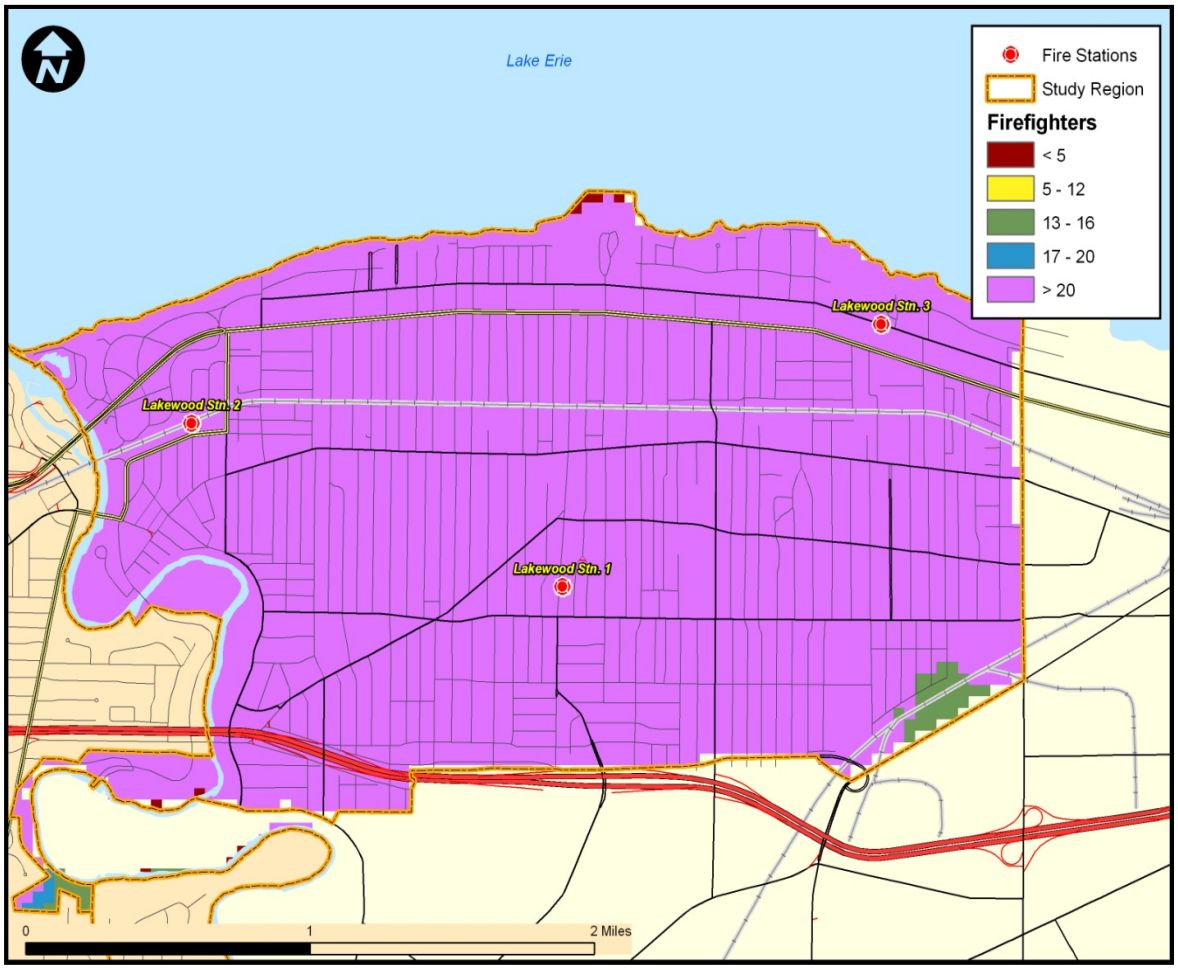


Limited pockets of Fairview Park along the eastern fringe have an available response force of less than 17, and an even smaller area fewer than 13 personnel.

Lakewood Fire Department

The typical staffing in Lakewood's three fire stations alone provides for than 20 available personnel throughout the city (Figure 82).

Figure 82: LFD Effective Response Force – Staffing

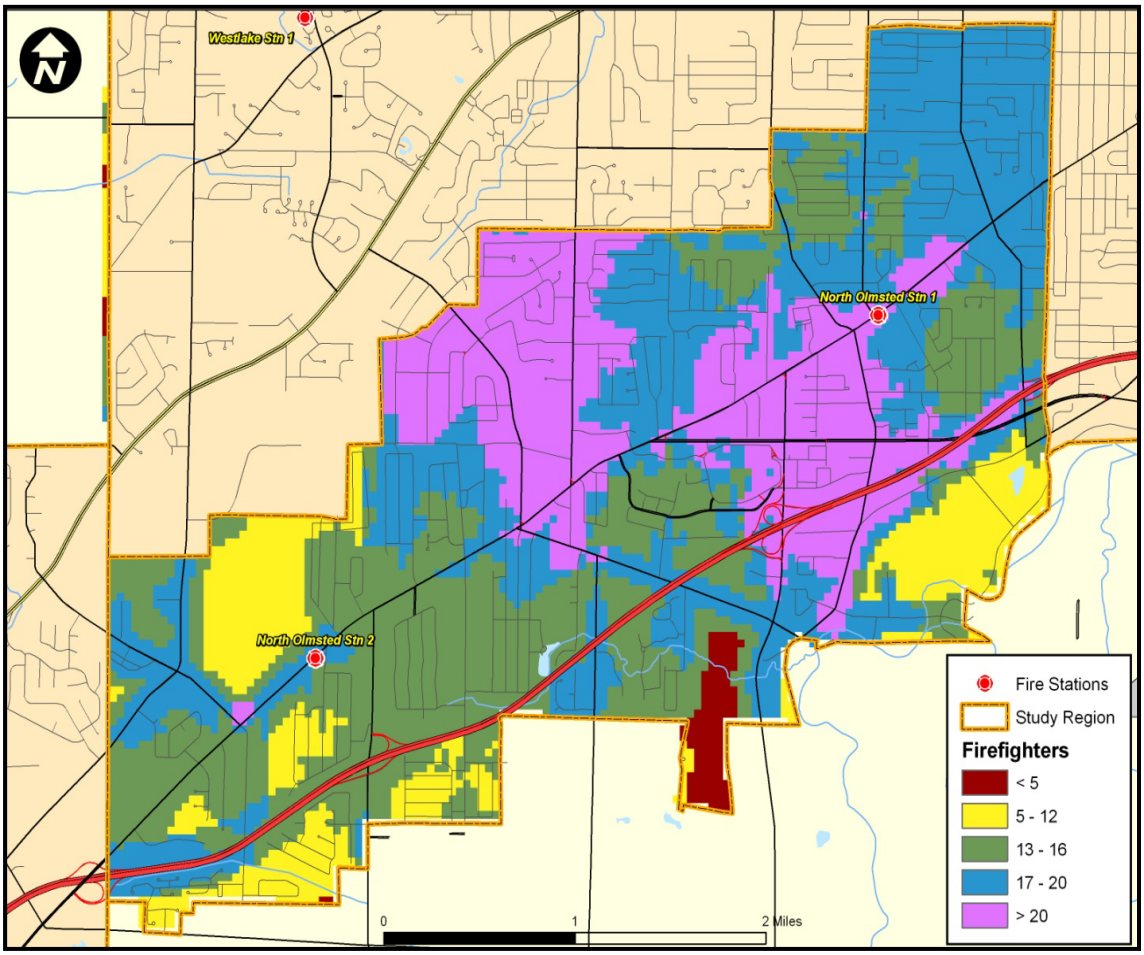


A single section in the southeast corner of Lakewood has an available response force of fewer than 20 personnel.

North Olmsted Fire Department

NOFD benefits from a series of arterial roadways to have the highest number of available firefighters in the center of town (Figure 83).

Figure 83: NOFD Effective Response Force – Staffing



A southeast pocket of NOFD and several areas around Fire Station No. 2 have effective response forces of fewer than 13 personnel.

North Ridgeville Fire Department

Mutual aid resources from the east provide more available firefighters than on the west side of town (Figure 84).

Figure 84: NRFD Effective Response Force – Staffing

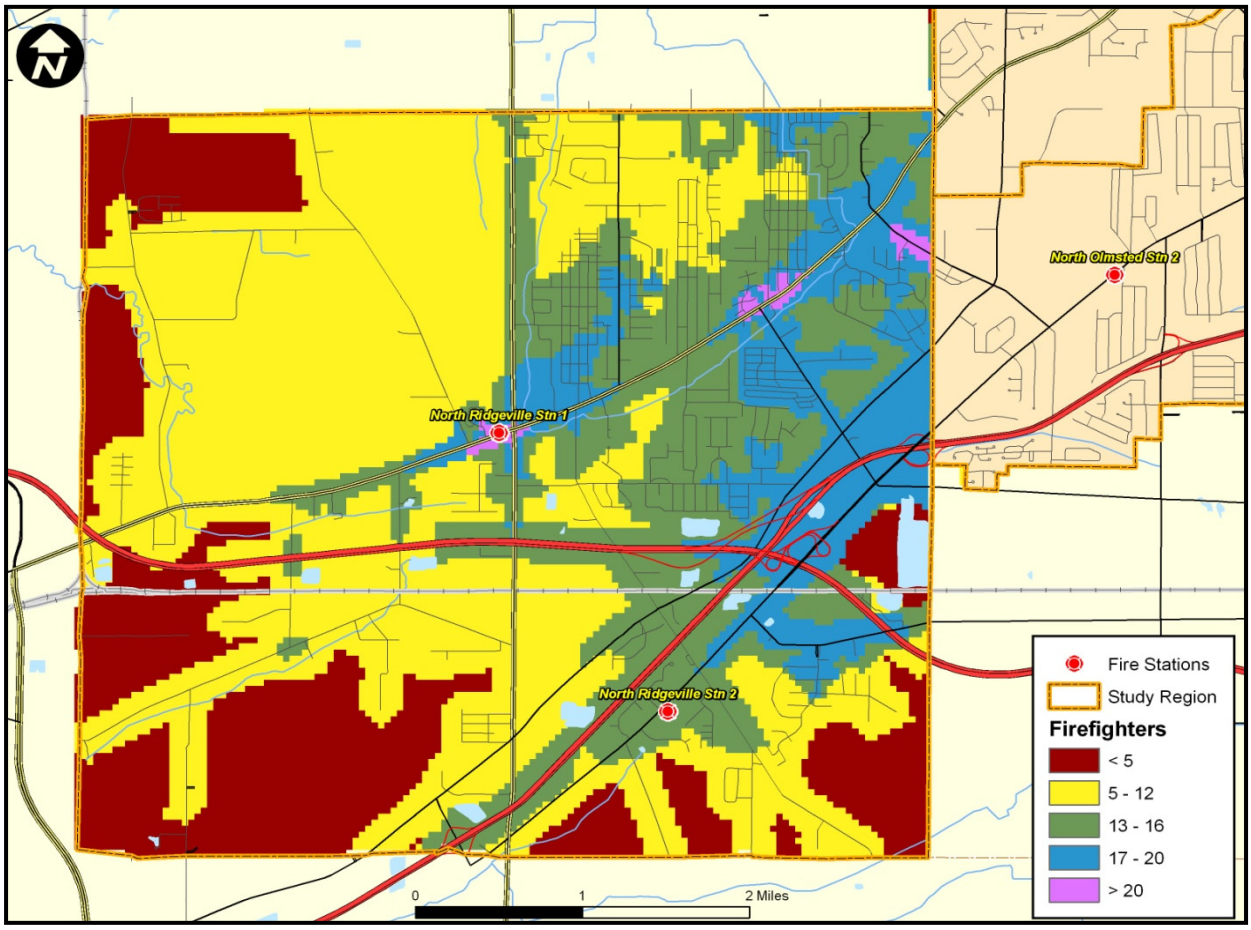
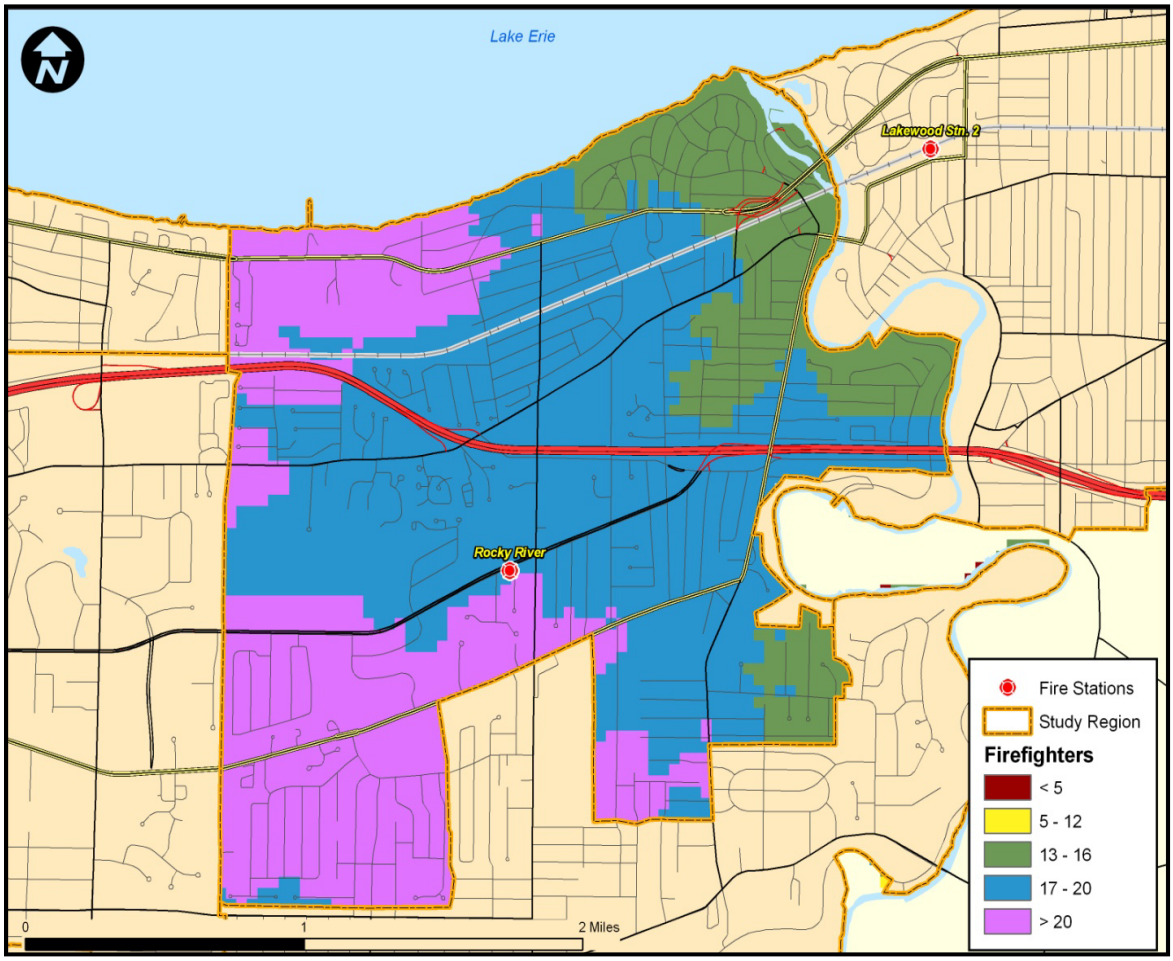


Figure 84 shows that the bulk of North Ridgeville has an effective response force of fewer than 13 personnel.

Rocky River Fire Department

RRFD can assemble a higher concentration of firefighters on the west side of town. The east side has less available firefighters within eight minutes due to distance from the single fire station (Figure 85).

Figure 85: RRFD Effective Response Force – Staffing

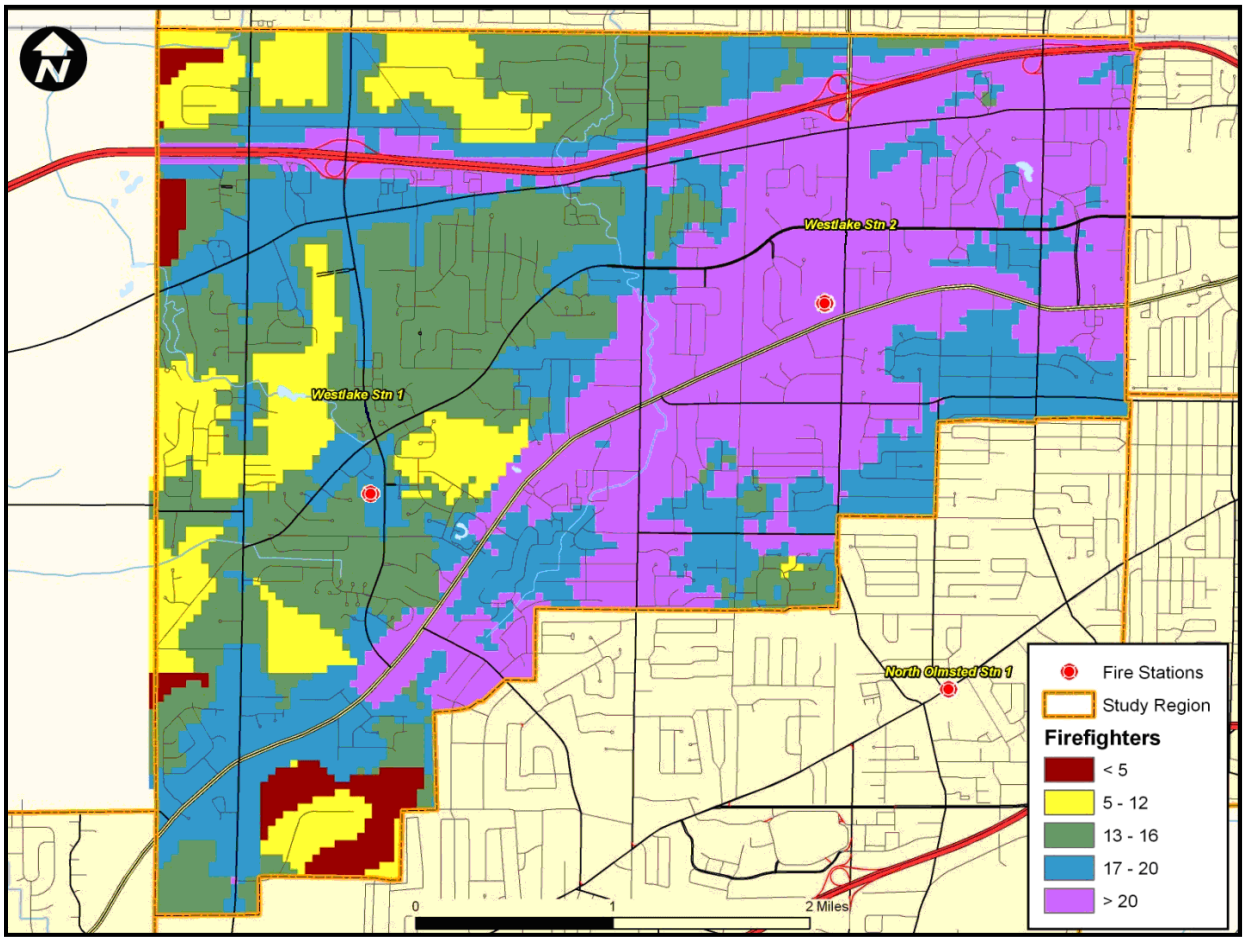


The principal portions of Rocky River have an effective personnel force availability of greater than 16.

Westlake Fire Department

Figure 86 illustrates that a larger concentration of firefighters can reach the Fire Station No. 2 area of Westlake than on the west side of town

Figure 86: WFD Effective Response Force – Staffing



Pockets of the western side of Westlake have a response force of fewer than 13 personnel.

Recorded System Response Performance

Throughout this document, certain descriptive statistical measures are utilized that may not be familiar to all readers. In an effort to reduce confusion, or the drawing of inaccurate conclusions, this section seeks to provide a brief explanation of these measures. The measures most often used that require clarification are the use of “average” and “percentile” measures.

Average

The ‘average’ measure is a commonly used descriptive statistic also called the mean of a data

set. It is a measure which is a way to describe the central tendency, or the center of a data set. The average is the sum of all the points of data in a set divided by the total number of data points. In this measurement, each data point is counted and the value of each data point has an impact on the overall performance. Averages should be viewed with a certain amount of caution because the average measure can be skewed if an unusual data point, known as an outlier, is present within the data set. Depending on the sample size of the data set, the magnitude of skew can be either very large or very small.

As an example, assume that a particular fire station with a response time objective of six minutes or less had five calls on a particular day. If four of the calls had a response time of eight minutes while the other call was across the street and only a few seconds away, the average would indicate the station was achieving its performance goal. However, four of the five calls, or 80 percent, were beyond the stated response time performance objective.

The opposite can also be true where one call with an unusually long response time can make otherwise satisfactory performance appear unacceptable. These calls with unusually short or long response time have a direct impact on the total performance measurements and the farther they are from the desired performance, the greater the impact.

The reason we do compute the average is because of its common use and ease of understanding that is associated with it. The most important reason for not using averages for performance standards is that it does not accurately reflect the performance for the entire data set. As illustrated above, one extremely good or bad call skewed the entire average. While it does reflect all values, it does not really speak to the level of accomplishment in a strong manner.

Percentile

With the average measure, it is recognized that some data points are below the average and some are above the average. The same is true for a median measure which simply arranges the data set in order and finds the value in which 50 percent of the data points are below the median and the other half are above the median value. This is also called the 50th percentile.

When you deal with fractile or percentages, the actual value of the individual data does not have the same impact as it did in the average. The reason for this is that the fractile is nothing more than the ranking of the data set. The 90th percentile means that 10 percent of the data is greater than the value stated and all other data is at or below this level.

Higher fractile measurements are normally used for performance objectives and performance measurement because they show that the large majority of the data set has achieved a particular level of performance. This can then be compared to the desired performance objective to determine the degree of success in achieving the goal.

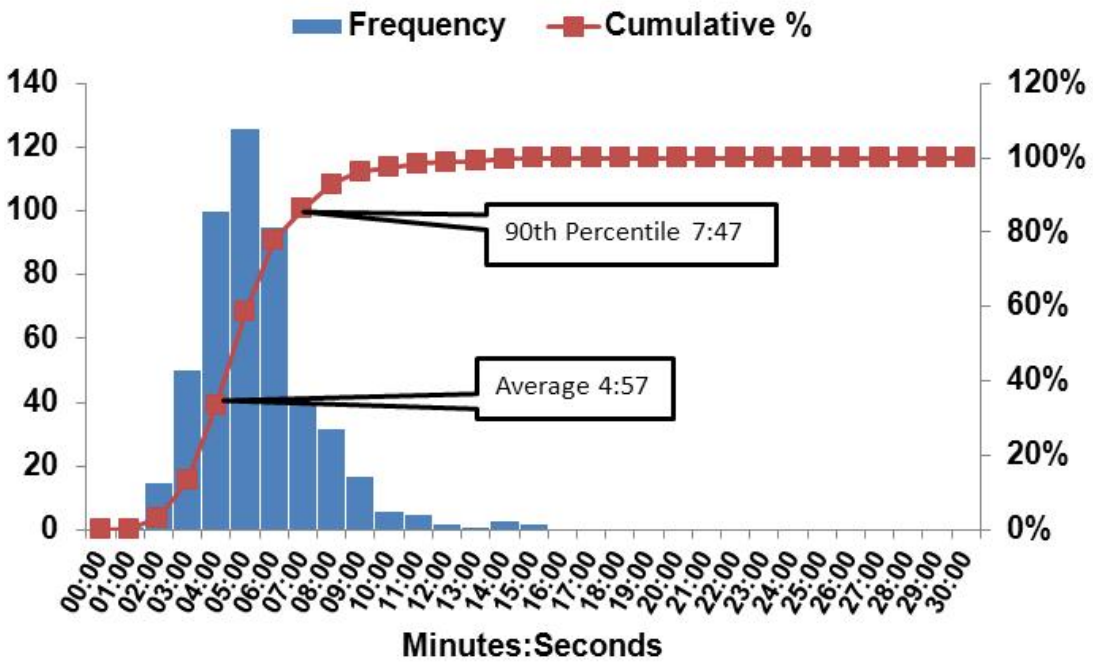
Total response time is the amount of time a resident or business waited until an apparatus arrived at the scene of emergency beginning when they first called the designated emergency number, often 911 and is made up of several elements: call processing, turnout, and travel times. Each of these elements is discussed at length in the appendix of this report. Since the fire department has no influence on call processing time, fire departments are measured on response time from the time of dispatch to the arrival on scene. The following series of figures examine the response time performance for the fire agencies within the study area over the last full year of data provided.[49]

[49] Mutual aid calls and non-emergent calls were removed from response time analyses as they were found.

Bay Village Fire Department

The most frequently recorded response time for BVFD was between four and five minutes. On the average, all emergent and in-district calls were answered in an average of 4 minutes 57 seconds.

Figure 87: BVFD Response Time Performance

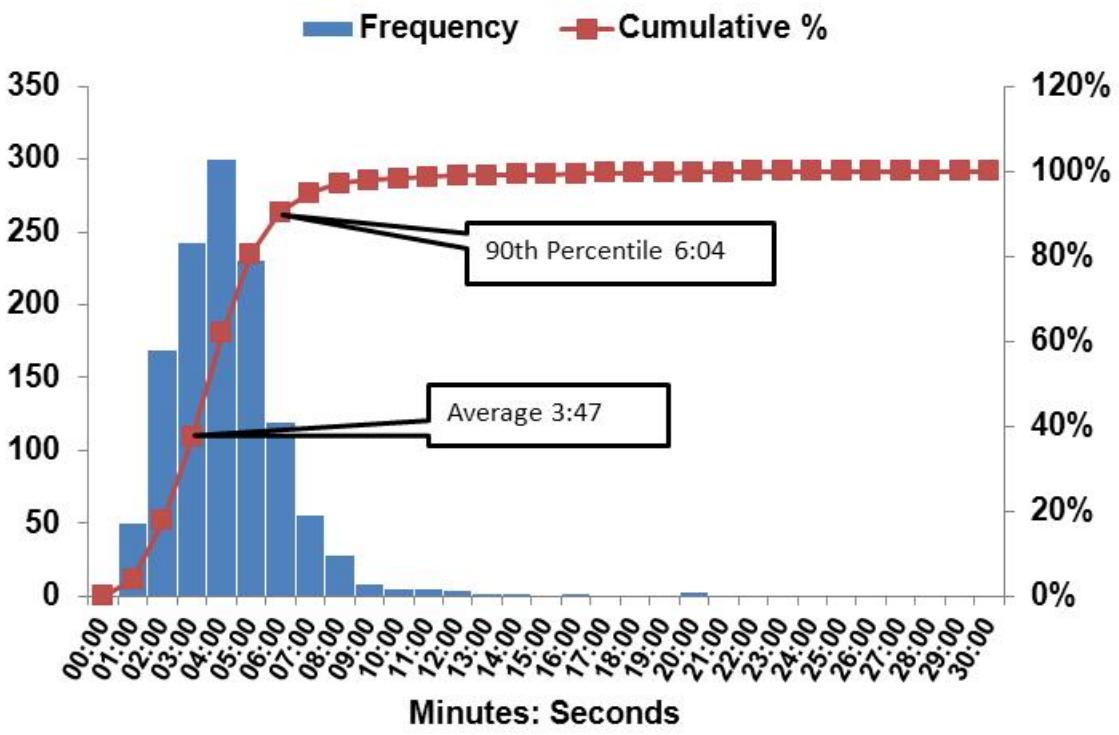


BVFD answered 90 percent of all calls in less than 7 minutes 47 seconds from time of dispatch.

Fairview Park Fire Department

As illustrated in the following chart (Figure 88), a four to five-minute response time interval was the most frequently recorded timeframe in the FPFD incident data set. The average was less, measuring at 3 minutes 47 seconds. Ninety percent of the calls were answered in less than 6 minutes 4 seconds from the sounding of the alarm in the fire station.

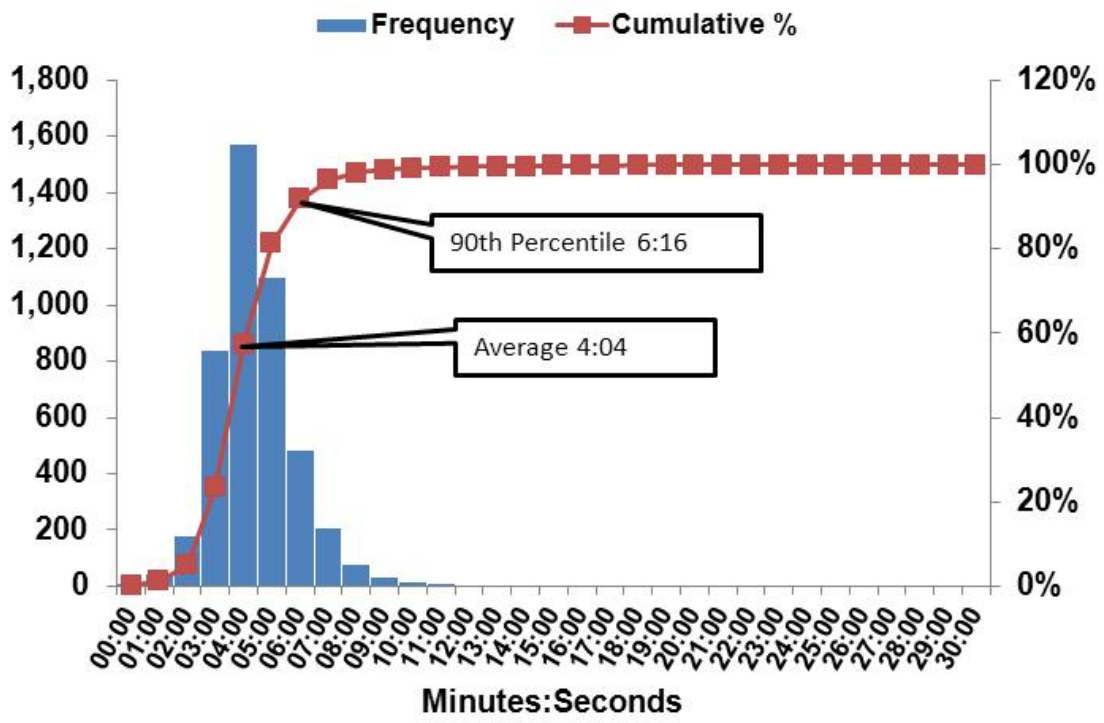
Figure 88: FPFD Response Time Performance



Lakewood Fire Department

LFD responded to calls within a four to five-minute time frame most frequently. The average response time was 4 minutes 4 seconds. Response time performance measured at the 90th percentile calculated to just over six minutes, as seen in Figure 89.

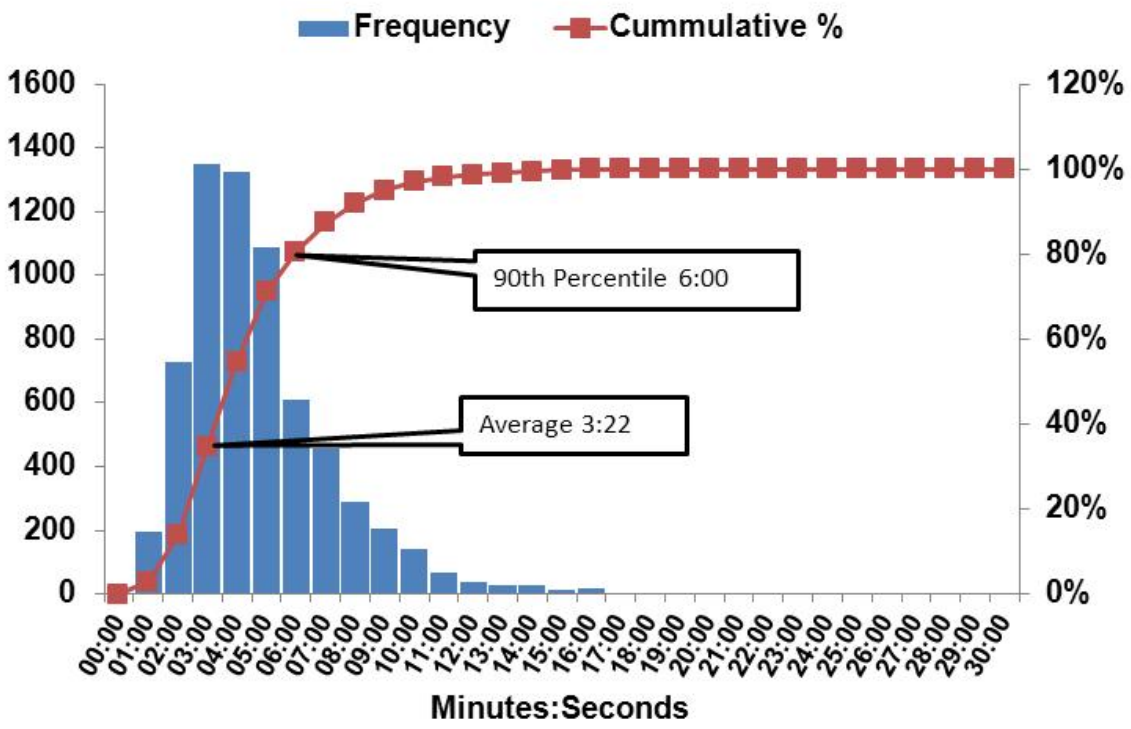
Figure 89: LFD Response Time Performance



North Olmsted Fire Department

NOFD most frequently responded to calls within a three to four-minute time frame. However, a number of calls were answered in the five-minute time interval, causing the average of calls within the database to measure close to three minutes. Response time performance measured at the 90th percentile calculated at six minutes from dispatch.

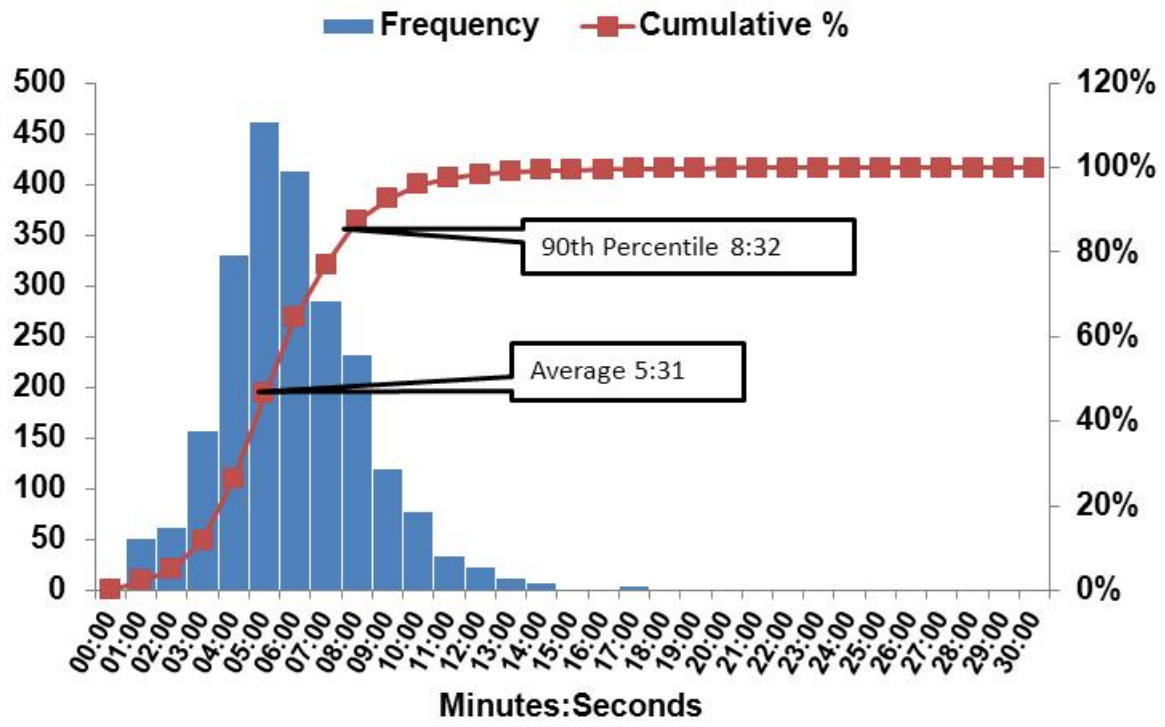
Figure 90: NOFD Response Time Performance



North Ridgeville Fire Department

The average response time performance measured squarely within the most frequently reported response time interval of five to six minutes. Ninety percent of all calls were answered in less than 8 minutes 32 seconds.

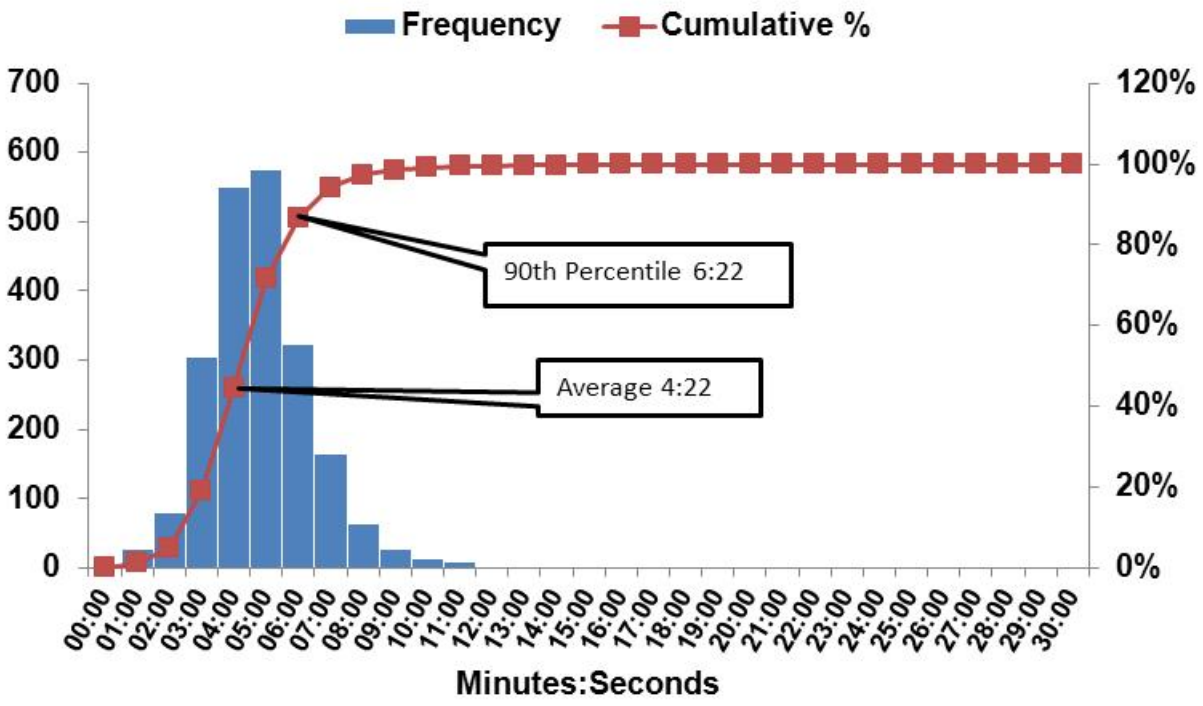
Figure 91: NRFD Response Time Performance



Rocky River Fire Department

While the most frequently recorded response time for RRFD was within the five-minute timeframe, the average was slightly less at 4 minutes 22 seconds. Ninety percent of all calls were answered in less than 6 minutes 22 seconds.

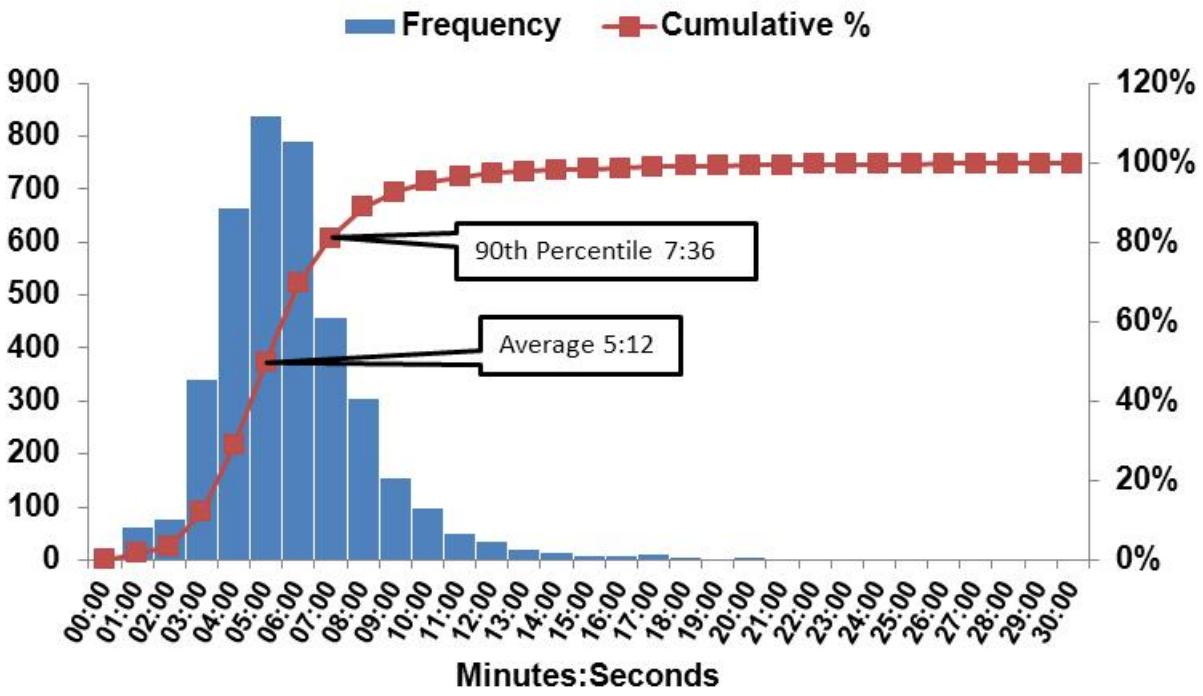
Figure 92: RRFD Response Time Performance



Westlake Fire Department

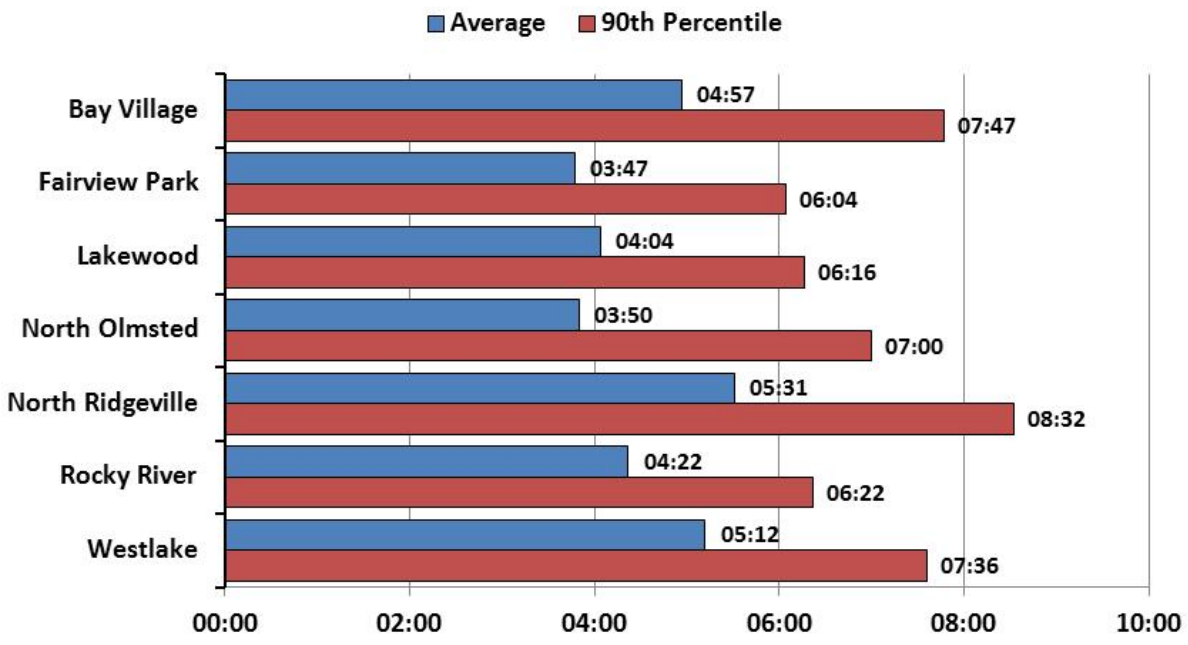
The most frequently recorded response time was within the five-minute timeframe for WFD. The average was just over five minutes. Ninety percent of all calls were answered in less than 7 minutes 36 seconds.

Figure 93: WFD Response Time Performance



The following figure summarizes the average and 90th percentile response time performance for each department. FPFD has the best overall response time performance, just missing the *NFPA 1710* guideline of five minutes at the 90th percentile.

Figure 94: Response Time Performance Summary by Agency

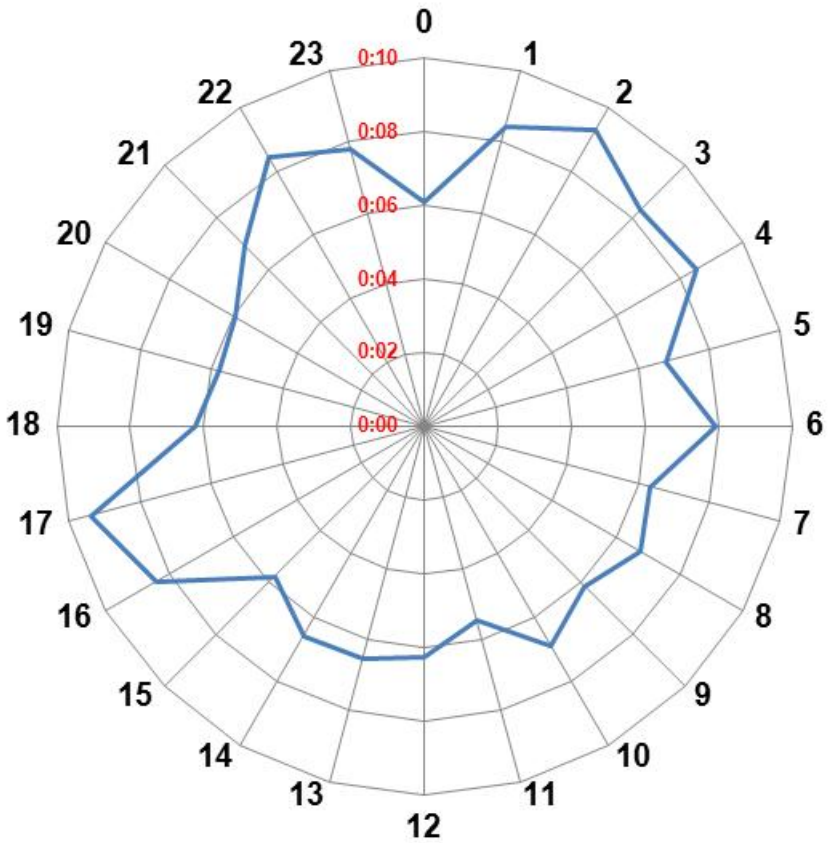


Response time performance can vary by time of day due to traffic patterns, weather, and distance to the call, among other factors. Therefore it is useful to examine response time performance by the time of day in order to develop strategies that may reduce response times during hours when performance does not meet adopted objectives. The following subsections examine each agency's 90th percentile response time performance by hour of day for the last full year of data.

Bay Village Fire Department

At the 2:00 a.m. hour, BVFD has the longest response time interval at 9 minutes 17 seconds while 5:00 p.m. is nearly equal, and the shortest is recorded in the 11:00 a.m. hour, 5 minutes 27 seconds.

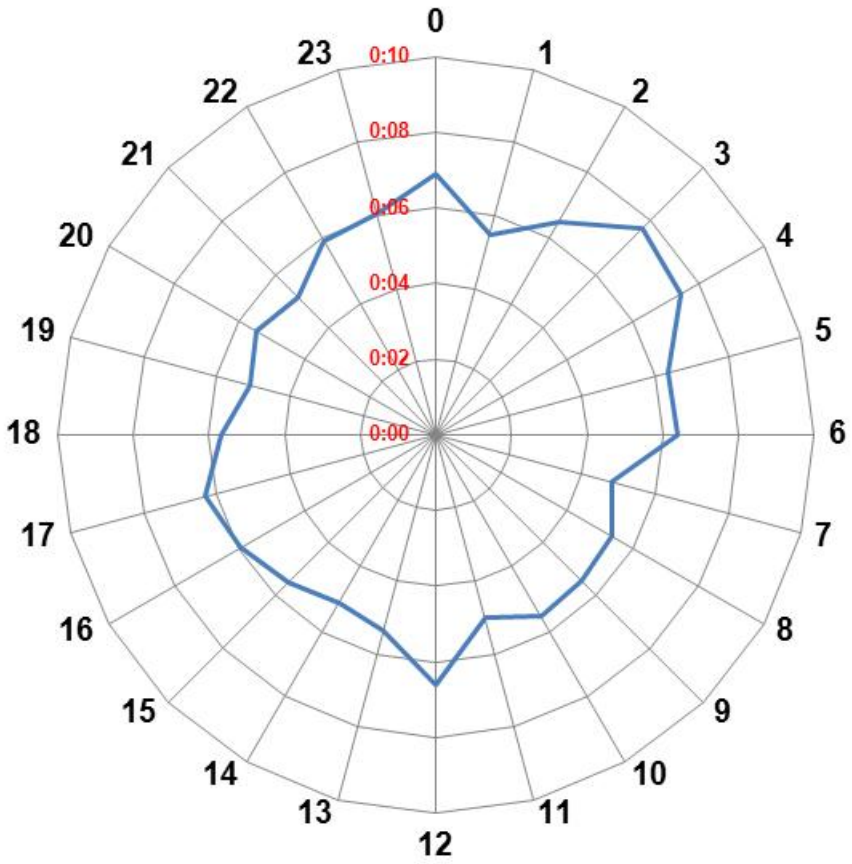
Figure 95: BVFD Hourly Response Time Performance – 90th Percentile



Fairview Park Fire Department

The 3:00 a.m. hour proves to be the time when FPFD experiences its longest response time intervals, 7 minutes 44 seconds, while the 7:00 a.m. hour has been determined to be the shortest at 4 minutes 49 seconds.

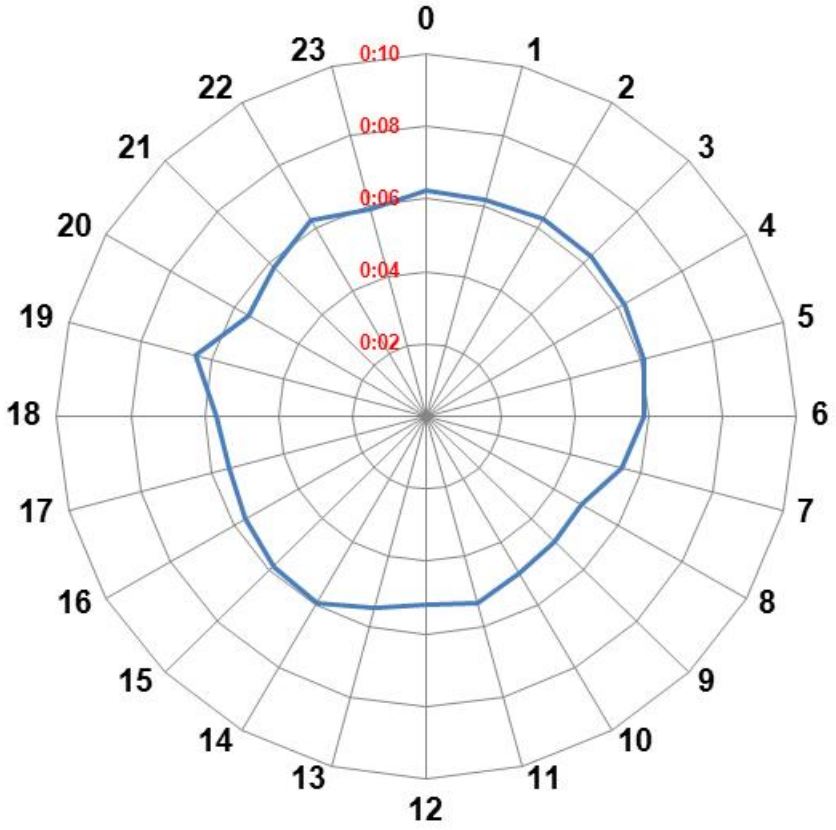
Figure 96: FPFD Hourly Response Time Performance – 90th Percentile



Lakewood Fire Department

LFD has fairly consistent response time performance hour to hour. The longest response time is evident at the 7:00 p.m. hour calculated to be 6 minutes 28 seconds. The best response times are primarily in the late morning hours when the best hourly response time was recorded at the 12:00 p.m. hour at 4 minutes 49 seconds.

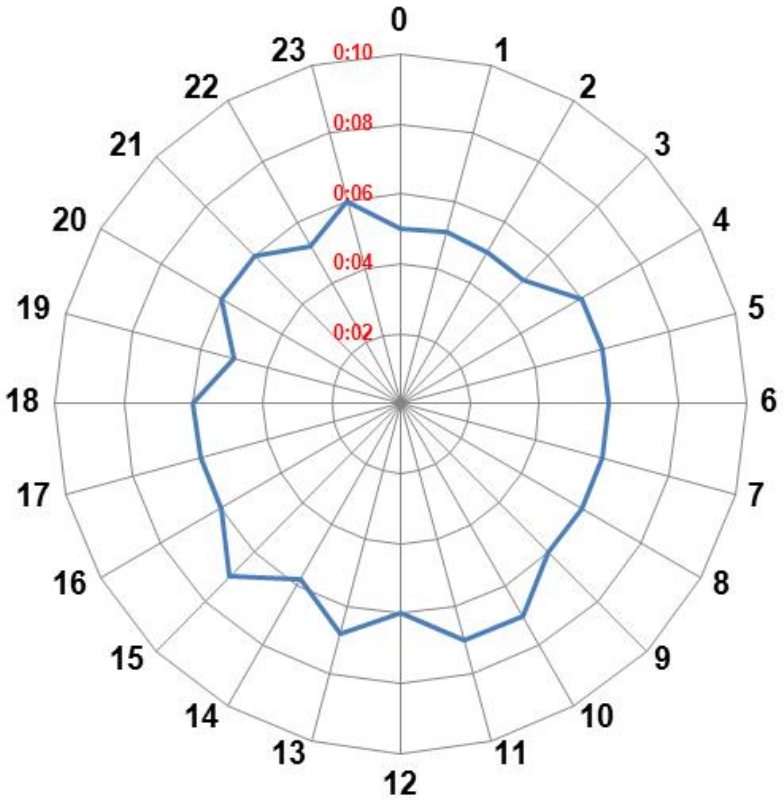
Figure 97: LFD Hourly Response Time Performance – 90th Percentile



North Olmsted Fire Department

NOFD has its best response time performance during the 11:00 p.m. and 7:00 a.m. hours. This is an atypical pattern for career fire crews. The best average hourly response time was recorded at the 2:00 a.m. hour at five minutes. Response time performance in the 10:00 a.m. hour is the longest at 9 minutes 24 seconds.

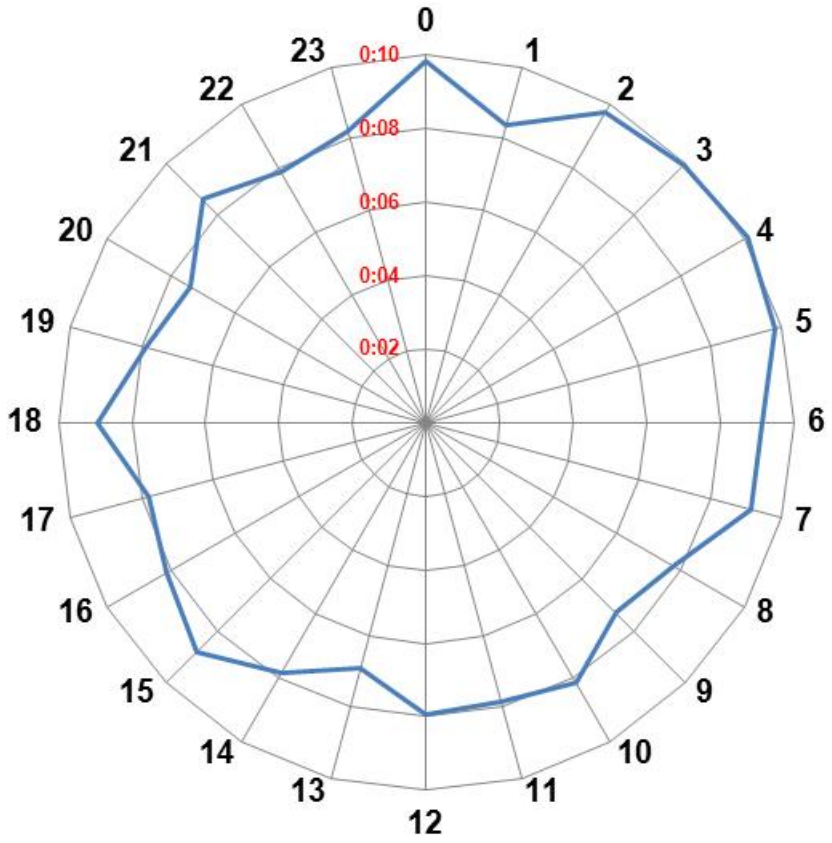
Figure 98: NOFD Hourly Response Time Performance – 90th Percentile



North Ridgeville Fire Department

For NRFD, the fastest response times occurred during the 1:00 p.m. hour at 6 minutes 54 seconds, while responses during the 3:00 to 4:00 a.m. hours took the most amount of time at 10 minutes 6 seconds.

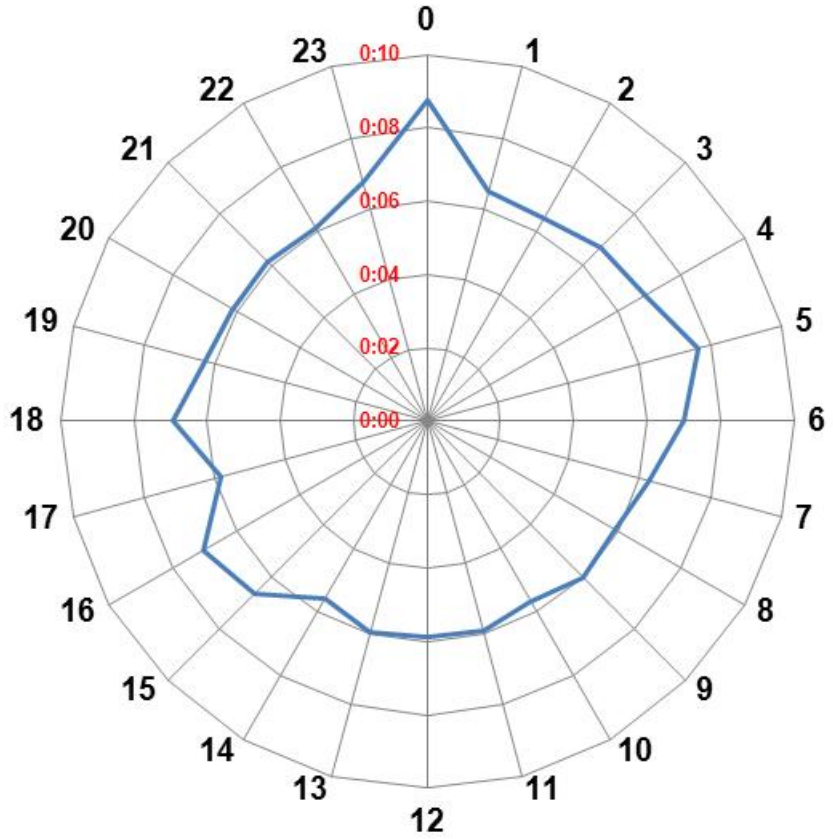
Figure 99: NRFD Hourly Response Time Performance – 90th Percentile



Rocky River Fire Department

RRFD has longer response times at midnight, measuring nearly nine minutes. The fastest response times occur mid-morning at the 10:00 a.m. hour calculated at 5 minutes 39 seconds.

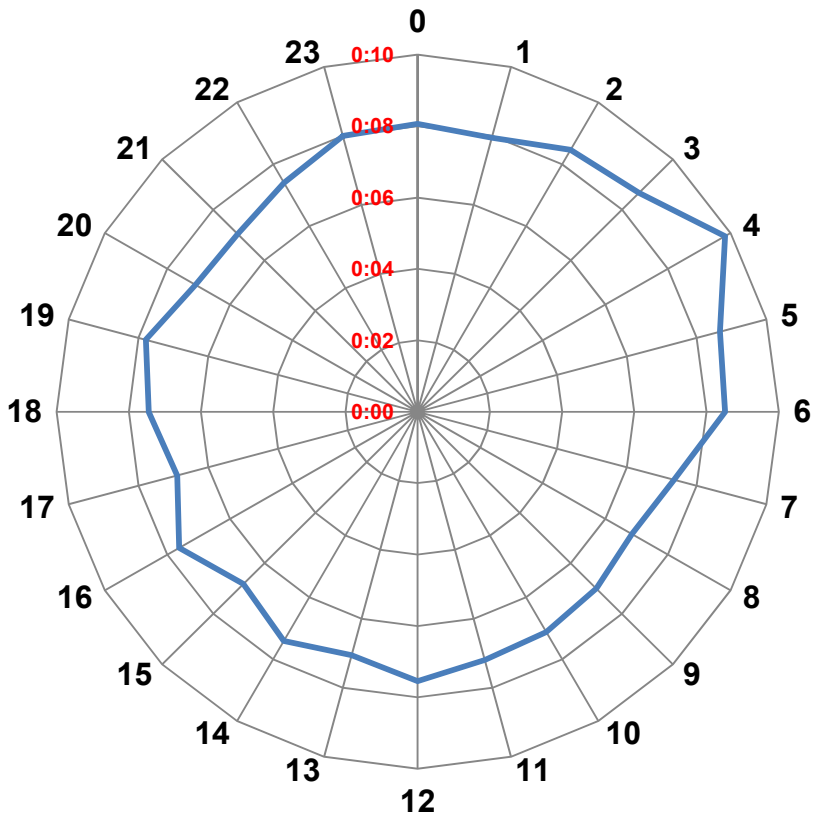
Figure 100: RRFD Hourly Response Time Performance – 90th Percentile



Westlake Fire Department

The fastest WFD response time performance occurred during the 3:00 p.m. hour at 6 minutes 50 seconds, while the 4:00 a.m. timeframe took the most amount of time at 9 minutes 50 seconds.

Figure 101: WFD Hourly Response Time Performance – 90th Percentile



Turnout Time Interval

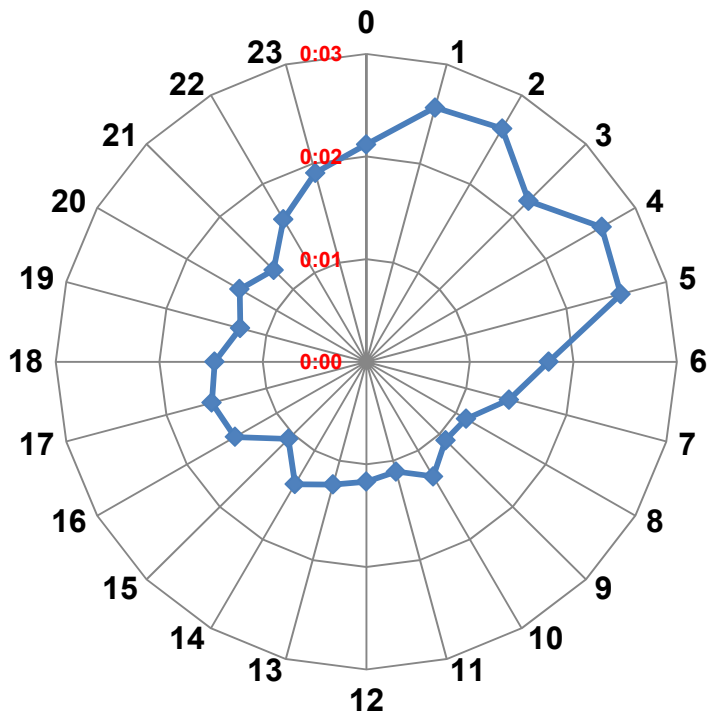
While reduced visibility at night may contribute to a longer response time for firefighters, the reduced traffic level should counteract this effect. Elements such as traffic, weather, construction, etc. are out of the control of firefighters to reduce response time performance but one element, turnout time, is not. Turnout time is the amount of time from when the firefighters are notified of an alarm to when they report that they are assembled on an apparatus and en route to the scene. This is most affected by the time of day when firefighters are engaged in other activities during the day and evening hours.

While the *NFPA 1710* guideline recommends an 80-second measure for suppression incidents and a one-minute measure for EMS incidents, the practicality of this time has been debated considering the activities involved before rolling an apparatus. There has been discussion within the industry to complete time-studies and to suggest longer times as practicably acceptable during different times of the day. The following subsections portray the analysis of the ***average*** turnout time by hour of day for each agency in the emergent incident database for primary apparatus during the last full year of data.

Bay Village Fire Department

The overall average turnout time for BVFD is 1 minute 28 seconds. Longer turnout times start occurring at the 11:00 p.m. hour and begin to improve at 6:00 a.m.

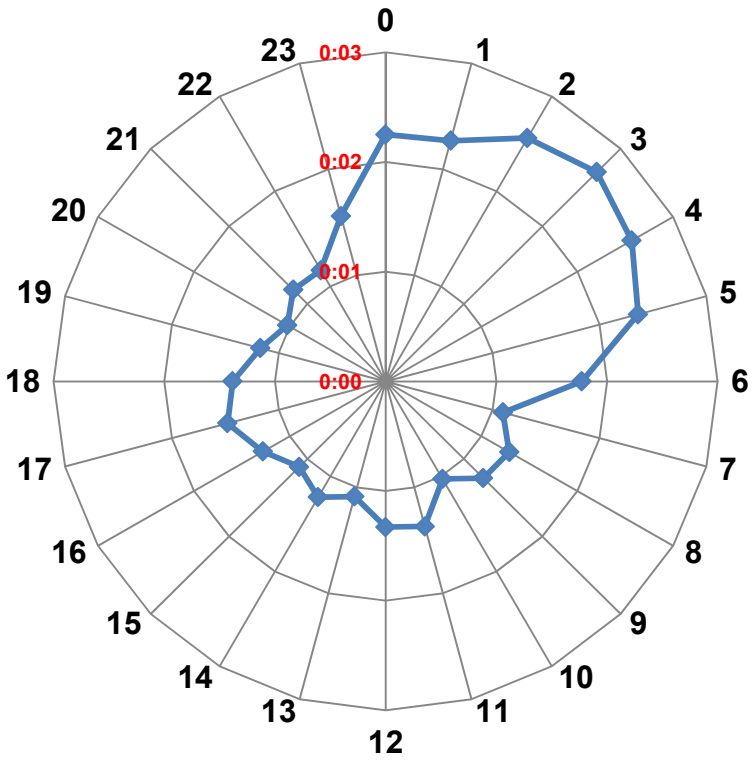
Figure 102: BVFD Hourly Turnout Time Performance – Average



Fairview Park Fire Department

FPFD reported an average turnout of 1 minute 24 seconds overall. The turnout time doesn't start to lengthen until 10:00 p.m. after a brief spike at the 5:00 p.m. hour. The best turnout times are during the daytime hours.

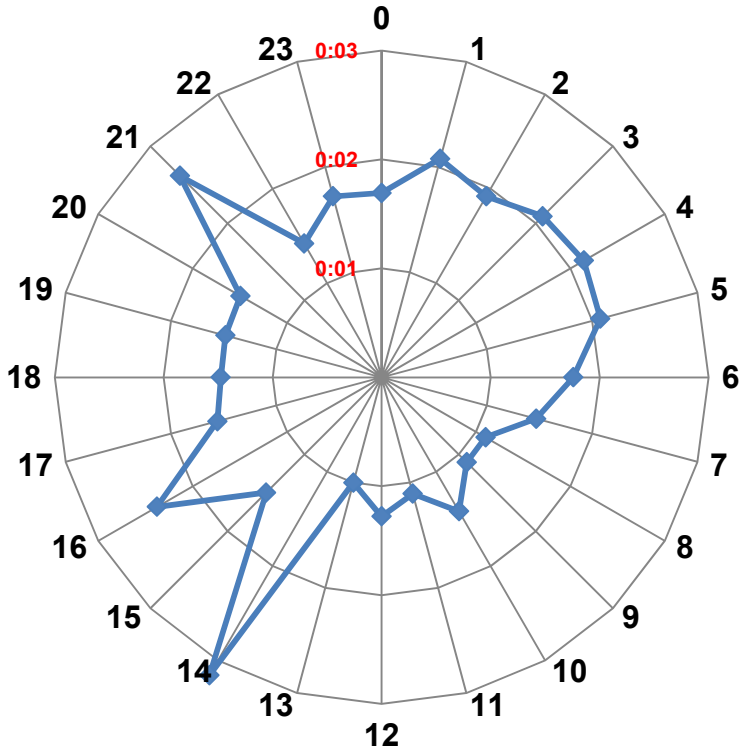
Figure 103: FPFD Hourly Turnout Time Performance – Average



Lakewood Fire Department

LFD has impressive relative turnout times during the day and just slightly longer times during the evening hours, which is common in career fire departments. However, notable spikes in longer turnout times occur in several hours during the day that exceed the average of 1 minute 43 seconds overall. The shortest turnout time is at 1:00 p.m., averaging one minute.

Figure 104: LFD Hourly Turnout Time Performance – Average



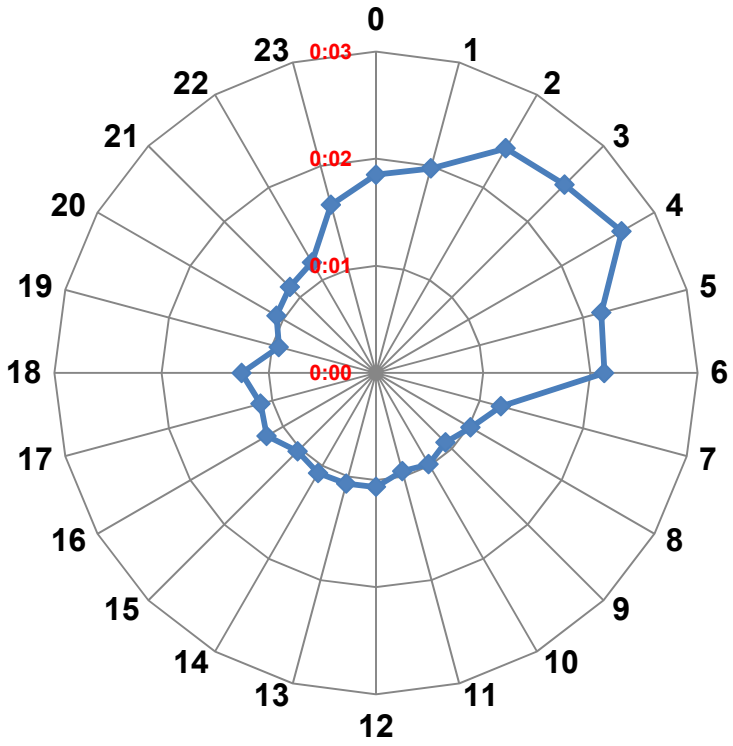
North Olmsted Fire Department

NOFD submitted NFIRS incident data information that did not have an en route time stamp included to calculate turnout time interval.

North Ridgeville Fire Department

NRFD experiences a typical pattern with its turnout time performance having an overall turnout time of 1 minute 15 seconds. Turnout time performance appears to improve early in the morning around 7:00 a.m.

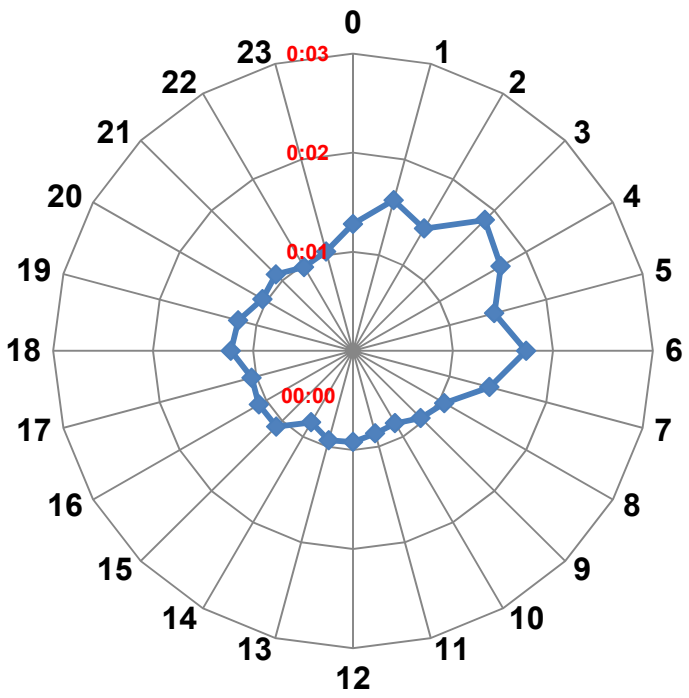
Figure 105: NRFD Hourly Turnout Time Performance – Average



Rocky River Fire Department

RRFD also experiences a typical pattern of turnout time performance. The overall turnout time is 1 minute 5 seconds. Turnout time performance appears to improve around 7:00 a.m.

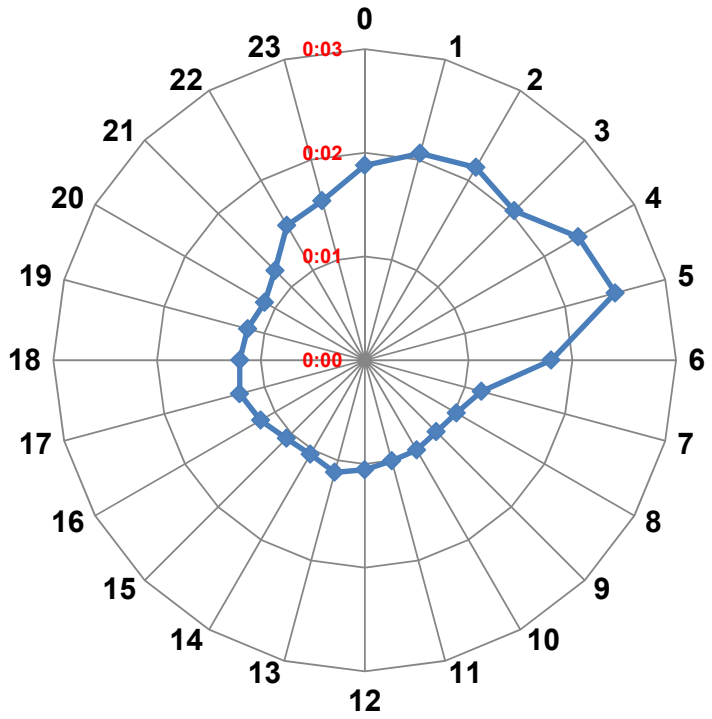
Figure 106: RRFD Hourly Turnout Time Performance – Average



Westlake Fire Department

Within the WFD incident data base, the overall turnout time performance was calculated to be 1 minute 15 seconds. The best turnout time was during the late morning hours when several hourly intervals recorded an average turnout time near one minute.

Figure 107: WFD Hourly Turnout Time Performance – Average



Support Programs

Training and Education Programs

Providing quality and safe fire and emergency services requires a well-trained force. Training and education of fire department personnel are critical functions for the Bay Village, Fairview, Lakewood; North Olmsted, North Ridgeville, Rocky River, and Westlake departments individually, but collectively it will be an essential keystone if this study of potential consolidation becomes reality. Without quality, comprehensive training programs, emergency outcomes are compromised and departmental personnel are at risk. In addition, integration of personnel into a single unified force will require quality training to assure its success.

> *Communities choose to provide emergency response services for protection of the entire community. Communities then have expectations that the services will be available and effective when they are needed. In turn, fire and emergency service personnel have an obligation to develop and maintain appropriate skills. When a citizen's life, family, or property is threatened, firefighters who perform well under these difficult conditions will earn the highest respect and admiration for the fire department, and community support of the department will be strengthened. But when firefighters are not trained well enough to perform as expected, community respect and support can disappear. Many times the difference is in the training that the responders have received.*[50]

General Training Competencies

In order to ensure quality training is provided it should be based on established standards of good practice.

> *One of the most important jobs in any department is the thorough training of personnel. The personnel have the right to demand good training and the department has the obligation to provide it.*[51]

Training provides more than the expectations of the public; training establishes the way emergency personnel will react in a crisis. This includes how a firefighter will cope with potentially life threatening situations—both to themselves and to the citizens they serve. An old axiom states *"the more we sweat in training, the less we bleed in battle."* While the frequency of fires may be less than in the past, the severity of these fires is on the increase. Training is the key to seeing that 'Everyone Goes Home' at the end of each shift.

[50] Laughlin, Jerry W. *Fire Protection Handbook*, 20th Edition, 2008. NFPA, Quincy, MA.
[51] Klinoff, Robert W. *Introduction to Fire Protection*," 2nd Edition, 2003. Thomson/Delmar, Clifton Park, NY.

State of Ohio Continuing Education Training Requirements

In 2007, the Ohio Department of Public Safety's Division of Emergency Medical Services set new continuing education requirements for all firefighters, fire safety inspectors, and fire instructors. This continuing education is in addition to requirements previously held for paramedics (EMT-P) or Emergency Medical Technicians (EMT-B). The following figure summarizes the required annual training hours as well as total hours that must be obtained during the recertification period for various credentials.

Figure 108: Summary of Recertification Hours

Credential	Minimum Annual Hours	Minimum Hours at Recertification
Firefighter	18	54 hours at recertification
Fire Safety Inspector	10	30 hours at recertification
Fire Instructor	6	18 hours at recertification to include at least 8 hours of actual teaching
EMT-P		80 hours at recertification with ACLS & PALS as indicated in local protocol
EMT-B		40 hours at recertification

There are a variety of sources available for training standards. In concert with the State of Ohio, these include a combination of the International Fire Service Training Association (IFSTA) Essentials training manual and Delmar, as well as Jones and Bartlett as additional fire service instruction reference materials. National Fire Protection Association (NFPA) professional qualifications, codes, and standards are referenced by the participating departments commensurate with the State of Ohio, and the State has recognized other source materials that are compatible with International Fire Service Accreditation Congress (IFSAC) accreditation and/or the National Fire Academy.

Bay Village Fire Department

Lieutenant Charles Rieke is the lead instructor for the Bay Village Fire Department. He is assigned as the Department Training Officer as an additional assignment to his normal duties as company shift supervisor. In addition to Lt. Rieke, there are six other firefighters presently certified as Fire Instructors.

Fire training is completed as a part of normal shift operations, with a minimum of three topics scheduled each month. The shift officers utilize lesson plans provided by Lt. Rieke as guides that include the key educational objectives for each drill. Consistency is an issue. Since there is no full-time training officer overseeing the drills on each individual shift, the objectives can be subject to the interpretation of each company officer.

Training records are logged on the department's in-house computer system to maintain a permanent record for each individual firefighter, and it is his/her responsibility to see that all training entries are properly recorded by the officer.

The department participates in regional trainings, including hospital-based disaster drills and hazardous materials training provided by the Regional Westshore Haz Mat Team members. Several firefighters and officers also apply to the National Fire Academy

The region is also very fortunate to have all EMS training provided gratis by the hospital-based "We Share" Medical Training Program that brings a certified EMS instructor into each department during each of the three unit shifts on a monthly basis. In addition, computer-based EMS continuing education is provided free of charge via the "EMS Jane" computer program.

The Bay Village Fire Department's goal is to have each firefighter complete at least four hours of continuing education every month. To that end, Lt. Rieke believes that the department provides a total of 276 training hours annually across the three unit days as opportunities for training and continuing education. Of those provided in 2008, Lt. Rieke indicated that on average each firefighter received approximately 75 hours of fire and EMS training toward his or her continuing educational needs.

Fairview Fire Department

Lieutenant Bud Williams is the Training Officer for the Fairview Fire Department. He handles these duties as an additional assignment to his primary role as a shift lieutenant. There are a total of three fire instructors in the department. Like most of the departments in the Westshore study, training is primarily handled by the on-duty shift officers.

Training Records are computerized and entered into the Firehouse® data base. EMS continuing education is provided monthly by "We Share" and on line with the "EMS Jane" computer-based program.

Hazardous material and specialized rescue training at the operations level is provided by two firefighters of the department who are members of the Regional Westshore Haz Mat Team.

Individual firefighters occasionally travel to the Ohio Fire Academy for other advanced training opportunities. In total, Lt. Williams believes that 200 hours of fire and EMS training and EMS continuing education is offered to the department over the three shifts, with the average firefighter receiving approximately 50 hours of training annually.

Lakewood Fire Department

Captain Cornelius 'Con' Sullivan is the Fire Training Officer while Supervisor Matthias 'Matt' Burke oversees EMS Continuing Education. Both individuals handle training as additional duties to their primary shift duties (company officer and squad supervisor, respectively). Including these members, the department has a total of three fire instructors and one EMS instructor. Unlike most of the other departments in the Westshore study, not all Lakewood firefighters are trained in emergency medical services. Conversely, there are personnel trained as paramedics who are not firefighter certified.

Lakewood needs to provide training for officers, firefighter/paramedics, firefighter/EMT-B, firefighter-only, and paramedic-only personnel. Training opportunities are predominately offered at Lakewood during shift hours.

Fire training is handled each shift by company officers and EMS continuing education through the "We Share" hospital-based instructors and the "EMS Jane" computer program. The additional challenge at Lakewood is to schedule these opportunities so that those personnel who are dual certified as firefighters and EMT-P or EMT-B receive adequate training without suffering conflicting schedules.

In recent times, Lakewood has used the 3 C's training facility for fire training, but this has been curtailed due to budget constraints. Lakewood has also begun to use computer-based classes for officer development rather than the traditional classroom course. The issue here is whether this type of class offers sufficient interaction and networking designed to expose officers and officer candidates to a variety of views and operating procedures that may bring new ideas and/or efficiencies to their department.

All department training hours are recorded on a check-off sheet and then logged into a computer that has a set data base and cannot offer a variety of reports. In 2008, the average fire training was approximately 100 hours per individual firefighter, and 17 hours for those trained in EMS. This data is skewed since the records do not indicate whether those EMS certified firefighters are operating at the paramedic or EMT level.

North Olmsted Fire Department

The North Olmsted Fire Department's Training Officer is Lieutenant Timothy Gut. Like the previous departments interviewed, the responsibilities associated with training are an additional assignment to his regular shift duties as a company officer currently on B Shift. Previously the

Training Officer position had been part of the duties of the Assistant Chief, but this position has not been filled due to the restructuring of the department. The Assistant Chief position previously brought two important elements to the training program. First, training consistency in that as a 40-hour/week position; the Assistant Chief could oversee training among the shifts for the assurance that quality training was reliably provided each unit. Secondly, as a senior officer, the Assistant Chief's decision to set a training schedule was nearly automatically adhered to by each subordinate officer. This cannot be as easily accomplished by a lieutenant who is one of several on each shift.

The North Olmsted Fire Department currently has four certified fire instructors and one certified EMS instructor. The department has set training goals and objectives and uses lesson plans for each drill that correspond with the drill's individual objectives. Individuals requiring specialized courses such as Company Officer Development that previously were handled in-house now have to seek these courses through the community college or fire training academy when funds are available. Technical and Rope Rescue instructions are now provided through the Westshore Regional Haz Mat Team.

Training records are supported in the department's Firehouse® data base and entered by the shift or company officers for their crew. Lt. Gut indicated that the combined Fire and EMS training of the average firefighter/paramedic exceeded 100 hours during 2008. Most of this training was accomplished during shift time. However, the department has participated in both area hospital disaster drills and a high-rise drill attended by several of the departments included in this study. Typical to most of these departments, the training provided by North Olmsted is usually at the single company level. Having the opportunity to participate in multi-company evolutions makes training more closely simulate the coordinated operations on an actual fire incident and should be strongly supported and encouraged.

North Ridgeville Fire Department

Assistant Chief John Reese is the Training Officer for the North Ridgeville Fire Department. Similar to the other departments in the study, North Ridgeville has experienced a reduction of its training budget in recent years. However, Chief Reese has met this challenge with an innovative approach to the department's training efforts. He has developed an interactive video conferencing link between the two North Ridgeville fire stations, not only to facilitate training but also to hold discussions on subjects such as pre-plans, and department SOGs. The

advantages to this approach include opportunities to provide input and ideas to all shift personnel while the companies remain in their respective coverage areas.

In addition to shift training, North Ridgeville has been able to retain annual 'live fire' burn training; multi-agency drills that include some of the departments in the study, as well as the Avon Lake Fire Department; and Company Officer Development I and II courses provided on shift. The department has eight fire instructors and five EMS instructors who, along with Chief Reese, set three-year training goals that correspond with the re-certification cycle set by the State of Ohio. The training utilizes both lesson plans and competency testing on such items as saws, tools, hose, pumps, and Rapid Intervention Teams to assure that the training objectives have been attained and retained by North Ridgeville personnel.

EMS training is provided through the hospital based "We Share" program and operated similar to the other departments in the Westshore study. Training Records are computerized on department-designed spreadsheets. The average firefighter/paramedic in 2008 obtained approximately 95 hours of combined training.

Rocky River Fire Department

The training interview for Rocky River was conducted with Chief Christopher Flynn. Rocky River's training is conducted by the shift captain and lieutenants; the department has one certified fire instructor. The department is operating without a formal training budget and hopes this might be restored in the near future. The department has not set training goals for the current year, but relies in part on the 'Coffee Break' series of fire training outlines that are designed to emphasize 'best practices' in the fire service and to start small group discussion on training issues.

The department participates in the "We Share" EMS program and each paramedic receives three hours of training per month. The department training records are computerized using the Firehouse® data base, and the average firefighter/paramedic receives approximately 45 to 50 hours of combined training per year.

Westlake Fire Department

Captain Dave Palmer is the assigned Training Officer for the Westlake Fire Department. Captain Palmer's primary responsibility is that of a shift officer; he oversees training as an additional assigned duty. Captain Palmer reports to Assistant Chief Timothy Zack, who also

added to the interview. The department has nine certified fire instructors and essentially operates without a dedicated training budget.

The Training Calendar is set by the instructors and shift officers who observe from the perspective of the department's operations what training subjects need attention. One or two pertinent subjects are scheduled each month and an instructor is assigned to outline the lesson plan and training objectives. Fire training averages three hours per month during unit shifts with an equal number of EMS training provided through the "We Share" program.

Department training records are handled via a written training log that is subsequently transferred to the Firehouse Software®. The department has also participated in an annual Haz Mat multi-agency drill and a regional hospital disaster drill every two years. Westlake firefighter/paramedics average approximately 47 hours of combined training per year.

On-Going Skills Maintenance Training

Once assigned to emergency response, members must routinely be provided with refresher training and continuing education to avoid degradation of skills learned during entry-level training and certification. Additionally, training and education must be provided to deal with emerging risks and changing service demands.

While economical, it is generally understood that on-going skills maintenance training or "in-service" training may be interrupted for emergency response or a higher priority assignment. This phenomenon can reduce the effectiveness of the training and may increase response times. Examples of on-going skills training include the following:

- Fire streams, pumps, Friction Loss
- Pre-connected hand lines
- Hydrant connection
- Hose loads
- Deluge gun
- Seating assignments/responsibilities
- Augustus Fire Tool
- Blitz Attack
- Operational scenarios
- SOGs
- PPE
- RIT/S&R
- Streets
- Ambulance Familiarization
- Foam Procedures
- Cascade breathing air refill operations
- IMS/ICS
- Ground ladders
- Salvage and Overhaul
- Videos (building collapse, floors, walls, peaked roofs)
- Haz Mat Video Course
- Fire Attack Video Course
- Chimney Fires
- Radiation Monitors
- Building Construction
- Inspection/Codes and Ordinances

- Forcible Entry
- Portable Fire Extinguishers
- Ventilation
- Water Supply
- Accountability
- Fire Attack
- Fire Ground Ops
- Vehicle Extrication (twice per year)
- Terrorism Awareness
- Fire Prevention/Public Education/PR
- Fire Detection, Protection, and Suppression Systems
- Fire Cause Determination
- Hose Testing
- Hurst Tool
- Air Bags
- Target Building familiarization
- Elevator Rescue

Pre-Promotion Development Training

National standards recommend that members demonstrate the skills and knowledge required of a more responsible position prior to being promoted within the organization. Pre-promotional training is often provided to ensure candidates for promotion meet the minimum experience, educational and certification requirements for the position.

This process does not formally provide organized pre-promotional development to potential or aspiring officers using a standardized curriculum or evaluation system.

Pre-promotion training programs should be developed and completion required of personnel prior to being eligible for promotion. Minimum officer requirements should be enhanced and promotional eligibility lists established to identify a cadre of individuals available for promotion.

The National Fire Protection Association has standards for fire rescue service officer positions and specialty skills. The fire officer standard is *NFPA 1021*. This serves the fire company with an individual with proven skills and abilities and provides opportunities for candidates to gain experience.

Training Program Planning

Like any other activity, training and education of members should be conducted under a comprehensive plan. The plan should include a clear definition of the goals and objectives of the training program department-wide and a schedule and process to achieve them. A comprehensive training plan should include but not be limited to:

- Identification of performance standards for all members at the firefighter and officer level to ensure competency in:
    - Community Risk Reduction

  - Health and Safety
  - Fire Suppression
  - Emergency Medical
  - Human Resources (leadership, supervision, etc)
  - Incident Management System
  - Hazardous Materials
  - Technical Rescue
  - Information systems
  - Position-specific Development
- Enhanced, progressive minimum training certifications
- Provisions for periodic review of individual and company level performance
- Scheduled training to prevent skills degradation
- Scheduled remedial skills improvement training
- Comprehensive training objectives for each training session planned
- Processes for evaluating the amount of learning that occurred
- Determining outside training opportunities
- Monitoring member training certifications
- Identification and utilization of training resources
- Training records

Competency-Based Training

On-going training should follow an identified plan based on demonstrated training needs. Such a plan is best developed as a result of periodic evaluation of the current skill levels of members (competency-based training). According to *NFPA 1500*, "The fire department shall provide an annual skills check to verify minimum professional qualifications of its members."[52]

Under a competency-based system, an evaluation of skill performance is conducted at scheduled intervals to determine if the person being evaluated can perform the task in accordance with pre-determined standards. Those skills that are performed well require no additional training. Those skills not performed well are practiced until the standard is met.

[52] *Standard 1500, Standard on Fire Department Occupational Safety and Health Program*, 2007 Edition. National Fire Protection Association, Quincy, MA.

This approach maximizes the time used for training. Further it ensures that members are performing at an established level. Specialty skills can be evaluated in the same manner with further training provided as needed. Ideally, the competency-based training approach is used on an on-going basis. For example, each quarter different skills are evaluated on an individual-by-individual basis.

To institute a competency-based approach to training, all of the needed skills must be documented to describe the standard of performance expected. This would include all skills such as hose handling, apparatus operation, EMS procedures and protocols, use of equipment and tools, forcible entry, ventilation, tactics and strategy, and others.

To operate an effective on-going training program, even under the competency-based approach, sufficient resources must be available to conduct skill evaluations and to assist with performance improvement training.

Training Status

The seven departments of the Westshore study have had their training budgets either eliminated or curtailed in recent years. This has resulted in the elimination of training positions; the reliance on shift officers with or without training certification to adequately provide beneficial training to their personnel; and the reduction and/or elimination of outside training, including in most cases Officer Development, Incident Command, Safety and Accountability—all of which are important to any progressive organization. In nearly all cases, the shift training provided is only rudimentary to the on-going and evolving conditions faced by firefighters in such areas as building construction, size-up, tactics, and firefighter safety. The impression is also that some of the training is recorded as completed when there is only an elementary discussion of the subject material without demonstrating a complete understanding of the fundamental concepts.

The elimination of advanced, multi-company or multi-agency training may offer some short-term monetary benefit but in the long term may result in both less efficiency in the operations of the department, and potentially place firefighters at risk. The benefit of networking provided to firefighters through outside training avoids a mindset of complacency and offers opportunities to explore new ideas that may have a great impact on the efficiency and safety of firefighting operations.

Despite the lack of budget, this training review has uncovered some 'best practices' within the departments surveyed. Some of these include:

- The "We Share" and "EMS Jane" hospital provided in-service EMS training programs. If these services alone were lost in the future, the combined departments would not have enough State-certified EMS instructors to maintain adequate paramedic continuing education requirements.
- The North Ridgeville interactive video training and conferencing link allows several fire stations to participate in the same training or department meeting without leaving their response district.
- The computer-based Company Officer Development (COD) utilized by Lakewood as a stop-gap to the formal training offered at the Ohio Fire Academy or similar educational institution. This approach may not offer the networking of a formal classroom setting, but it allows individuals most of the tools needed to further their career development and the needed leadership to their department. Despite training budget cuts, particular note should be made of North Olmsted and North Ridgeville's ability to still provide COD in a formal classroom setting.

Recommendation 34: The departments should establish a budget to support the on-going training of firefighters and officers.
Recommendation 35: Management and key personnel should attend a national seminar or conference every other year at a minimum (i.e., National Fire Academy, International Association of Fire Chiefs, Executive Fire Officer).
Recommendation 36: Establish a formalized training schedule forecasting at least six months in advance, develop lesson plans outlining the goals and objectives each training session, and assure the lesson plans are in line with policies and procedures.
Recommendation 37: Reinstate multi-company and multi-agency training to assure that responding fire departments are familiar with the capabilities and operating procedures of the consolidated department.
Recommendation 38: Adopt a company officer development program that offers consistent training to officer candidates.
Recommendation 39: Chief officers and chief officer candidates should be offered advanced training.
Recommendation 40: Expand the interactive video training and conferencing initiated by North Ridgeville FD to include all seven fire departments.
Recommendation 41: Apply for state and federal grants for training, equipment, facilities, and personnel.
Recommendation 42: Maintain the "We Share" and "EMS Jane" continuing education programs.

Fire Prevention Programs

An aggressive municipal risk management program, through active fire and life safety services, is a fire department's best opportunity to minimize the losses and human trauma associated with fires and other community risks.

> *The National Fire Protection Association recommends a multifaceted, coordinated risk reduction process at the community level to address local risks. This requires engaging all segments of the community, identifying the highest priority risks, and then developing and implementing strategies designed to mitigate the risks.*[53]

A fire department should actively promote fire resistive construction, built-in warning and fire suppression systems, and an educated public trained to minimize their exposure to fire and health issues and to respond effectively when faced with an emergency.

Code Administration

The fire code, as adopted by any municipality or township, becomes the primary basis for assuring an existing structure and its occupancy is safe to the public once such a structure is built and a certificate of occupancy is issued. It is essential the building and fire codes are compatible with one another to assure that the same relative standards will be applied during construction and throughout the life span of the structure.

The municipalities and fire departments that are a part of the Westshore study have for the most part adopted the International Code Council's (ICC) most recent versions of the International Building Code and International Fire Code as adopted by the Ohio Department of Commerce to become the Ohio Building Code and the Ohio Fire Code, respectively. The municipalities have the right to strengthen these adopted codes to fit certain circumstances unique to their particular community.

Several of the Code Officials and Fire Prevention Officers in the Westshore study have initiated a study of each municipal code to take the best of each and develop a new Westshore Fire Code for use should these fire departments consolidate. This is an outstanding initiative and deserves recognition. There is precedent for such a move that was first completed in southwest Ohio and published as the Unified Fire Code of Southwest Ohio, which is essentially the Ohio Fire Code modified for some above ground flammable liquids storage and provides a local

[53] Kirtley, Edward. *Fire Protection Handbook*, 20th Edition, 2008. NFPA, Quincy, MA.

appeals process rather than both the fire official and defendant having to travel to Columbus for a hearing in front of the Board of Building Appeals.

New Construction Review

Plans review of new construction is critical to a fire department's ability to recognize hazards or construction flaws during construction that could adversely impact the safety of the structure and its occupants in the future. The cities in the study usually have a certified Building Department but also utilize an outside Plans Examiner and Review Service that acts on behalf of the city. In most cases this is Architect Ken Martin, who is hired as a consultant on behalf of the respective city.

The fire departments in this study work closely with the in-house or outsourced plans examiner, especially in areas of entry ways and turning radius, fire suppression and alarm systems, and fire hydrant placement and water flow. Fire Inspectors are also present for any tests of the suppression and alarm systems as well as making a joint final inspection prior to the issuance of a Certificate of Occupancy.

Automatic Fire Sprinklers

While excellent response time performance by the fire company is vitally important, the most effective method to protect lives and property from fire is the automatic fire sprinkler system. Fire service resources cannot be provided to match the level of protection provided by this technology. The best opportunity to apply water to a fire prior to flashover is through the use of built-in fire sprinkler systems in homes, businesses, and other buildings. Innovations in residential fire sprinkler design have dramatically reduced their cost. The fire departments involved in this study should consider supporting legislation to require the installation of approved fire sprinkler systems in all new structures including residential properties.

Fire Safety Inspection

While Plans Review and issuance of the Certificate of Occupancy are critical times for input from the fire inspector, the building or structure does not fully become the responsibility of the fire inspector until it becomes occupied. From that time, the fire inspector becomes the guardian of the safety for occupants, contents, and the general public.

In most cases, a fire officer (certified by the State of Ohio as fire safety inspector) is assigned these duties, with general commercial occupancies inspection usually conducted by the fire company in their first due district. In the event of large occupancies or specialized hazards, the

inspection will be handled by a member of the department's Fire Prevention Bureau. There are advantages to having routine commercial occupancies handled at the company level. This gives the fire crews a chance to familiarize themselves with the building and its features, such as the fire suppression and alarm systems, utility shut-offs, and multiple points of entry. This lends itself to developing pre-plans of the structure that can save vital time in the mitigation of any fire or other emergency.

More sophisticated occupancies, such as high risk locations (i.e., hospitals, nursing homes; high-rise buildings, petroleum storage areas, etc.) are usually handled by more experienced fire inspectors. Their findings should also be shared with the fire companies and senior staff to assure that adequate pre-plans are also developed for these occupancies. Target locations should have a more robust first alarm assignment to insure that any life safety or fire incident can be handled quickly and efficiently with minimal injuries or property damage.

Public Safety Education

Based on the data developed by the incident information analysis and combined with the high risk/low frequency target locations within the response area, a fire department should develop meaningful public education programs designed to inform the public of the hazards that could impact fire and life safety. Examples of these programs should include:

- Fire Station Tours
- Car Seat Program
- CPR/AED Training
- Blood Pressure Check
- Residential Smoke Detector Program
- Fire Extinguisher Demonstrations
- Community Block Parties
- City Celebrations
- Bicycle Helmet Safety Program
- Safe House Program
- Provide Carbon Monoxide Detectors
- Career Days
- Prom Promising
- Fire Brigade Training
- Senior Citizen Fire Safety

Fire Investigation

The investigation of fires, explosions, and related emergencies is an integral part of providing life and fire safety to a community. As stated in the Ohio Revised Code, the fire chief of a jurisdiction is responsible for determining the 'cause and origin' of each fire and providing that information to the Fire Marshal of the State of Ohio. In order to accomplish this mandate, a fire department must have trained and competent fire investigators working in conjunction with both law enforcement and the county or federal prosecutors.

The fire problem in a community is addressed by a number of resources provided by the fire department. These resources include public education so the citizen is aware of hazards, how to prevent them, and what to do should they occur; engineering/code enforcement so fire and life safety is an inherent part of the community infrastructure and where there is a violation compliance is achieved; fire suppression so that when there is a failure in the education or engineering/code enforcement, the resulting emergency can be resolved; and fire investigation where the incident is documented, the cause determined as accidental or intentional, and steps taken to reduce the likelihood of it happening again.

The results of fire investigations suggest public education needs and results, the need for code modifications and changes, fire department training, resources and deployment, and identification of the community's fire problem.

The Ohio State Fire Marshal Bureau of Fire and Explosives Investigation and the Fire Forensic Laboratory provide fire and explosive investigative and evidence processing services to Ohio's fire services and law enforcement agencies. Twenty-seven field fire investigators and four supervisors are located across the state and are on call 24 hours per day.

By law, the State Fire Marshal must be notified of any fire fatality, explosion, or fireworks incident occurring within a fire department's jurisdiction. The Marshal can 'superintend' any fire or investigation within the State of Ohio, especially when arson may involve multiple jurisdictions. The State Fire Marshal may also be requested by fire departments to assist in the investigation of incidents involving the possibility of arson, explosion, or related offenses. The Ohio State Fire Marshal processes an average of 3,000 cases annually.

The fire departments involved in this study have already initiated the Westshore Fire Investigation Unit comprised of one or more investigators from each department. At the request of the department having a fire, the on-duty investigators assemble at the scene to provide a variety of fire, explosion, and related incident investigation resources. This initiative should be encouraged and additional training provided to these investigators in specialized fields so several may qualify to become certified fire investigators following the standards of *NFPA 921*.

Incident Information Analysis

The primary purpose for maintaining a record of emergency responses is to evaluate the effectiveness of fire service effort. This effort includes deployment strategies, personnel training, and the effectiveness of fire prevention and public safety education programs.

> *Information technology can enhance organizational effectiveness and efficiency by providing rapid access to high-quality information and empower fire department personnel to offer a higher level of service.*[54]

Once this data is routinely collected, the fire chief and other operations members should use the incident records to determine what types of fires are occurring most frequently, the types of properties most often involved in fire, and causes of ignition, to develop targeted fire prevention efforts.

State and Federal Grants

The Department of Homeland Security, the Ohio State Fire Marshal's Office, and the Ohio Department of Public Safety's EMS Division all provide annual grants for various prevention activities. Not all fire departments in this study take advantage of these opportunities.

Bay Village Fire Department

Unlike several of the fire departments in this study, the Bay Village Fire Department has an officer who is permanently assigned to fire prevention duties. Lieutenant Christopher Lyons currently administers the Bureau of Fire Prevention. Lt. Lyons, along with the five company officers, handles the inspection program for occupancies throughout the city. They are currently inspecting all existing commercial occupancies and places of assembly at least annually. Special occupancies, such as those requiring licensure or schools, are inspected annually as well. Storage tanks and other hazardous or high risk facilities may be inspected cooperatively with the State Fire Marshal's Office.

The City of Bay Village uses the current Ohio Fire Code enhanced with local ordinances on open burning and is considering an additional change that will address residential sprinklers in new homes.

The inspection program utilizes a tablet-based computer equipped with Firehouse software®. This allows an inspector a standard check-off sheet and leaves the occupant with a computerized listing of any deficiencies requiring the inspector's follow-up. There is currently no fee for the inspection service to offset any of the cost of the Bureau.

Public education is also coordinated through Lt. Lyons. The actual public education presentations are a shared duty with other officers and firefighters and cover a variety of topics that help meet the needs of the community. Many of the public education presentations occur

[54] Duggan, Brian P., *Fire Protection Handbook*, 20th Edition, 2008. NFPA, Quincy, MA.

as the department meets the public at community events or through special scheduling by local groups requesting a safety talk or visit on a specific topic.

The Bay Village Fire Department belongs to the Westshore Fire Investigation Team, which is on call to assist at any major or suspicious fires in the community; the expertise of the State Fire Marshal's Office and Forensic Laboratory area also available. Three Bay Village police detectives also assist in the gathering of evidence, interviews, and photography of the fire scene.

Fairview Park Fire Department

Captain Paul Arundel and Lieutenant Bud Williams discussed the Fire Prevention, Public Education, and Fire Investigation questions on behalf of the Fairview Fire Department. Currently they are two of the company officer/fire inspectors within the department; the fire chief, three captains, and three lieutenants comprise a total of seven inspectors. The city has adopted the latest version of the Ohio Fire Code and is working cooperatively with the other departments in the study to produce the Westshore Fire Code.

The department attempts to inspect every commercial and assembly occupancy annually. The department inspection records are computerized using Firehouse Software®; at present there is no fee attached to these inspections. Public education activities are handled by both the officers and firefighters, usually falling to the shift and company where the event or request occurs. No programs are directly marketed to the public; rather the programs are available by request from any public or civic group.

Three firefighters belong to the Westshore Fire Investigation Team. A fire in Fairview requiring a cause and origin or fire investigation falls first to the firefighter on duty who may wish to activate all or part of the Westshore Investigation Team on duty for that day. The investigators can call for additional resources from the State Fire Marshal. Liaison is maintained with the Fairview Police Department, which assists in scene control and evidence storage.

Lakewood Fire Department

Fire Marshal Scott Gilman is in charge of the LFD Fire Prevention Bureau. As such he oversees the inspection of 1,345 occupancies annually; 1,022 provided by fire company inspections and the 323 most critical conducted by the Bureau itself. These include schools, high rise buildings, industrial complexes, and places of assembly. Lakewood uses the Ohio Fire Code augmented with local ordinances on propane tanks and use, fire lanes, and smoke

detectors in rental properties. Personnel assigned to the Bureau include 2 full-time inspectors and the 12 company officers assigned to fire suppression.

In conjunction with the outside Plans Examiner, the Bureau reviews all new construction, especially for suppression and alarm systems, hydrant placement and water flow, and access roadways. There are no fees attached to inspections or plans review by the Bureau.

Public education requests come to the Bureau and are completed by Bureau personnel. In addition to the typical public education programs, Lakewood provides training for the nursing homes and hospitals in the area, as well as special programs for third grade students (Smoke House) and fifth grade students (Junior Fire Chiefs). Lakewood also attends local block parties in its response area to meet the public and distribute fire safety literature. This literature is available in a format suitable for the visually impaired.

Fire Marshal Gilman and the Fire Inspectors are the primary fire investigators in Lakewood. Like most of the other departments in this study, Lakewood belongs to and uses the Westshore Fire Investigation Unit for some fires in its jurisdiction. Evidence is collected by Lakewood and processed by the State Fire Marshal's Forensic Laboratory in Reynoldsburg, Ohio, or private labs when appropriate.

North Olmsted Fire Department

Captain Mike Ciarrone is the Fire Prevention Officer for the City of North Olmsted. Until recently, the Fire Prevention Bureau was led by an Assistant Chief and had both a Captain and a Fire Inspector assigned to it. Presently only the captain position remains and it is believed that each captain will rotate into this position once every four years. The continuity of the Bureau, which until recently was preserved by both the Assistant Chief and Inspector, is now greatly compromised.

For example, each captain, who otherwise is assigned to fire suppression, brings separate strengths and weaknesses to the Bureau. Rarely is there enough time in their one-year tenure to initiate and carry out plans to adequately inspect existing occupancies and review or witness new occupancy tests. There are 13 certified fire inspectors in the department: the chief, four captains, six lieutenants, and two firefighters. While this helps with some routine occupancy inspections, it doesn't address the complexities found in North Olmsted. There are no fees for any of the Bureau's services.

Public education is handled solely by the shift companies. North Olmsted belongs to the Westshore Fire Investigation Unit for initial fire investigation, with assistance from the State Fire Marshal for any major fires.

North Ridgeville Fire Department

The North Ridgeville Division of Fire Prevention is supervised by Assistant Chief Scott Bement. North Ridgeville differs from the other departments in this study in that it uses the 1993 BOCA (Building Officials and Code Administrators) Fire Code augmented by several city ordinances. North Ridgeville is active in the Northeast Ohio Fire Prevention Officers Association but currently is not participating in the promulgation of the Westshore Fire Code. The City of North Ridgeville also uses its own certified Building Department for plans review in conjunction with the fire department, which advises on alarm and suppression systems as well as water flow, hydrants, and access.

North Ridgeville has 11 company and chief officers certified as fire safety inspectors and attempts to inspect all major commercial occupancies annually. Including plans reviews, the department made approximately 525 inspections in 2008. Record keeping is not computerized, and there are no fees attached for inspections.

Lieutenant Brian Korfhage handles the public education requests while acting as a shift company officer. In addition to the typical public education programs, North Ridgeville has a fire extinguisher simulator that is used to train school teachers, school bus drivers, and nursing home professionals.

Fire investigations are initiated by the on-duty officers with the help of the Lorain County Association of Fire Investigators. The department also uses both investigators and the forensic laboratory of the State Fire Marshal's Office. There is a movement to bring additional fire investigation training classes into Lorain County to add to the ranks of qualified investigators. North Ridgeville has one lieutenant certified in the Juvenile Fire Setter Program to handle children and young adults involved in fires.

Rocky River Fire Department

Robert Crowe is the fire marshal and fire prevention officer for Rocky River. The Fire Prevention Bureau uses the current Ohio Fire Code as the basis for its inspections and is involved with the city's Building Department to work on plans review and the final new construction inspection.

Inspections occur approximately every third year, and are described as 'hit and miss' or complaint-based and systems driven. The information generated by the Fire Prevention Bureau is passed onto to the operations companies for use in pre-plans. Fire companies are not used for inspections, but do visit target locations to become more familiar with the salient features of the buildings and built-in suppression systems. There are no fees for inspections; approximately 25 percent of the inspection records are computerized on Firehouse Software®.

Fire companies are used for public education in the form of tours, school visits, and the Regional Scotty Fire Safe House. The department provides free smoke detectors for seniors and the disabled and fire extinguisher training for city employees. Fire safety and prevention literature is available in both English and Spanish.

Fire investigation is conducted by Marshal Crowe, who is also the department liaison with the Westshore Fire Investigation Unit. The department also has one person certified in the administration of the Juvenile Fire Setter Program.

Westlake Fire Department

Westlake Fire Marshal Timothy Hughes also acts as the Fire Prevention Officer. Marshal Hughes is retired from the Bay Village Fire Department and works approximately four hours per day to provide continuity to the Fire Prevention Program. There are a total of three certified Fire Safety Inspectors in the Bureau who represent the equivalent of 1.5 full-time inspectors. Westlake is working with the majority of the other departments in this study to collaborate on the Westshore Fire Code.

Westlake Fire has a working relationship with the city's Building Department for new construction plans review and on joint final inspections prior to the issuance of the Certificate of Occupancy. Westlake has over 2,900 occupancies requiring inspections, and the Bureau is able to visit each of these at least every other year. High risk occupancies are inspected annually. Company inspections are not utilized and there are no fees for either inspections or permits. Inspection records have been computerized in Firehouse® software for nearly six years. During 2008, 3,178 staff activities including inspections, notifications, and administrative tasks were completed with approximately 2,250 hours expended.

Firefighter Patrick Greales acts the department's public educator as an additional duty to his shift work. The Public Education Program includes props such as an animated Sparky the Fire

Dog and the Regional Scotty Fire Safe House for use in schools and at community events. Fire safety literature is available in both English and Arabic.

There are three shift personnel who are certified fire investigators in Westlake and are also part of the Westshore Fire Investigation Unit. The department also has a good working relationship with the Westlake Police Department for interviews and other law enforcement needs, as well as using the State Fire Marshal's Office for additional resources and the forensic laboratory.

Recommendation 43: Absent the creation of a regional fire prevention bureau, two captains should be appointed to oversee the areas of prevention/public education and investigations in each department.
Recommendation 44: Priority should be given to the development and adoption of a single Westshore Fire Code, with a local board of appeals and using municipal court for regular citations.
Recommendation 45: Develop a fee structure for plans review, inspections, and re-inspections.
Recommendation 46: Consider a 'Self-Inspection' program for mercantile or commercial occupancies on the years they will not receive an on-site inspection.
Recommendation 47: Disseminate information found during inspections to operations and company officers to update pre-plans.
Recommendation 48: Fund fire prevention bureaus to maintain certifications and offer training to personnel aspiring to serve in fire prevention.
Recommendation 49: Upgrade fire investigation equipment and outfit one or more vehicles with the supplies and equipment to handle fire cause determinations in accordance with *NFPA 921* standards.
Recommendation 50: Provide all officers and firefighters with additional training in fire investigation awareness (what to do and what not to do) and public education.
Recommendation 51: Evaluate best practices between the fire departments and coordinate and adopt through a cooperative effort.
Recommendation 52: Consult the guidelines of the Commission on Fire Service Accreditation International, Ohio State Fire Marshal's Office, and NFPA Standards and standardize fire prevention, public education, and investigations practices.
Recommendation 53: Apply for federal, state, and private grants to purchase specialized equipment for public education and fire investigative purposes.

Emergency Medical Services

All of the study agencies operate Advanced Life Support (ALS) transport ambulances as part of the region's overall delivery of emergency services. In the absence of a transport ambulance, each agency also has the ability to respond to incidents in a first responder role while a transport unit from an adjacent area also responds. This section of the report provides an overview of those services, focusing on logistical support services, medical control and oversight, quality assurance and quality improvement mechanisms, and a review of system integrity in regard to required credentialing of personnel.

Emergency medical services (EMS) are delivered as an integrated service of the fire departments throughout the region. As such, all logistical support services exist under the overall services of the fire department. Personnel assigned to each fire station staff specific units based on the type of incident dispatched. All personnel are responsible for inspection of each ambulance at the beginning of their duty shift and supplies are replenished from the general station stock. Only LFD indicated that supervisory spot checks were used to ensure accuracy of daily equipment checks but admitted that these random checks rarely occurred.

As is common in most modern transport EMS systems, disposable equipment and consumables utilized during the course of patient care activities, such as dressings, bandages, oxygen delivery devices, intravenous fluid administration equipment, etc., are replaced on a one-for-one basis at each of the receiving facilities throughout the region.

Only WFD and LFD indicated that their ambulances were included in the overall capital replacement program, and none of the agencies were aware of an equipment replacement program that planned for the replacement of cardiac monitors/defibrillators or other high value devices. Service contracts for maintenance of cardiac monitors/defibrillators, cots, and other equipment are in place in each agency to ensure continued operation of critical equipment.

Medical Control and Oversight

Cuyahoga County (as well as Lorain County for NRFD) is part of the Ohio Department of Public Safety (ODPS) Emergency Medical Services Division Regional Physician Advisory Board Region IX, as illustrated in the following figure.

Figure 109: Ohio EMS Region Map

The regional board consists of seven physician advisors that are tasked with the development and approval of medical protocols for EMS providers within the region.

When contact with medical control is required, field personnel are required to contact the receiving facility directly, typically by cellular phone. Occasionally, when units are transporting a patient out of the region, contact with local medical control is initiated and the information is relayed to the out-of-area receiving facility.

The State of Ohio requires that medical directors meet certain requirements prior to serving on the regional board or as a local medical control physician as noted in Chapter 4765 of the Ohio Administrative Code. Specific requirements for local medical directors include:

- Possession of a valid Ohio medical license.
- Active in emergency care of patients.
- Active participation with one or more EMS organizations, including but not limited to:
  - Conducting performance improvement programs.
  - Conducting education programs.
  - Conducting protocol updates.

- Evidence of high ethical standards and no conflicts of interest.
- Evidence that the medical director will receive aggregate data from the state EMS office to benchmark at the local level.
- Board certified by the American Board of Emergency Medicine or the American Osteopathic Board of Emergency Medicine or board eligible by completion of an emergency medicine residency program recognized by the American Board of Medical Specialties or the American Osteopathic Association.

Physicians who meet the above requirements must complete the National Association of Emergency Medical Services Physicians (NAEMSP) Medical Directors course, the Ohio American College of Emergency Physicians (ACEP) Medical Directors course, or other equivalent course approved by the board.

The Cuyahoga Board of County Commissioners (by Commissioners' Resolution 447334, Journal 204, November 15, 1984) established the Cuyahoga County Emergency Medical Services Board. The responsibility of this board is to provide management control over supervision and operations of the Cuyahoga County Emergency Communications Center, to make recommendations to improve pre-hospital Emergency Medical Services, and to facilitate advanced life support services in Cuyahoga County. The Westshore region has two representatives that sit on this advisory board.

Local medical direction through the creation of regional protocols for each of the study agencies is provided through the "We Share" program. "We Share" is a local non-profit organization funded by each of the regional agencies to provide medical direction and continuing medical education to member departments. Each department appoints a representative to sit on the "We Share" Committee to provide input into system oversight and operation.

Quality Assurance and Quality Improvement

Quality Assurance (QA) and Quality Improvement (QI) are programs overseen by "We Share" with cooperative input from each of the study agencies. These programs involve the review of patient care reports (PCR) and periodic meetings with fire department personnel.

Periodically, "We Share" receives reports from the Ohio EMS Information System (EMSIS) and generates QA/QI records that are then used to conduct specific training sessions or to identify areas of weakness throughout the system. Access to additional databases is limited; however, the Ohio Trauma Registry can be accessed to perform QA/QI on trauma-related calls using the PCR number from the incident.

QA documents are generated by "We Share" and a standard method is used to review each of the records obtained from EMSIS. Although feedback is reportedly provided to the fire departments on a regular basis, fire department personnel indicate feedback is rarely received, either positive or negative.

The intent of the QA process is to provide a program of quality improvement (QI) that builds on issues uncovered during the review process. An annual training plan is currently in place within the region and is driven by the QA/QI process. This continuing education, required for all medically credentialed personnel within the system, is offered through the "We Share" program to member agencies, a significant benefit not found in many EMS systems across North America.

System Integrity

Oversight for emergency medical services in the state of Ohio is provided by the Ohio Department of Public Safety (ODPS) Division of EMS. Based on the ODPS Division of EMS website,

> *According to ORC 4765.28, a person seeking a certificate to practice as a first responder, emergency medical technician-basic, emergency medical technician-intermediate, or emergency medical technician-paramedic shall submit a completed application for certification to the state board of emergency medical services on a form the board shall prescribe and furnish. Except as provided in Division (B) of section 4765.29 of the Revised Code, the application shall include evidence that the applicant received the appropriate certificate of completion pursuant to section 4765.24 of the Revised Code.*[55]

In order to maintain the credential, a minimum amount of continuing education credit must be obtained during the credentialing period. In order for continuing education credit to count toward re-credentialing, Chapter 4765-19 of the Ohio Administrative Code requires that the education meet the following criteria:

(1) Each course shall be related to EMS operations or patient care;

(2) Written documentation of successful completion of the course shall be issued to the student by the sponsoring agency upon successful completion of the course;

(3) A single session of continuing education shall be at least one-half contact hour;

(4) Each EMS continuing education shall be provided and approved by one of the following entities:

(a) An EMS accredited institution or EMS approved institution;

(b) An EMS licensing agency in another state;

[55] http://www.ems.ohio.gov/ems_certification.stm. Accessed November 9, 2009.

(c) A branch of the United States military;

(d) A medical or nursing board of this state or another state;

(e) Federal, national or state entities, as follows:

(i) Emergency management agency;

(ii) Homeland security;

(iii) American Red Cross;

(iv) American Heart Association;

(v) American Safety and Health Institute;

(vi) Any other agency or organization as approved by the board.

(f) Continuing Education Coordinating Board for Emergency Medical Services (CECBEMS) approved courses.

(5) Each EMS continuing education course shall be provided in one of the following formats:

(a) Instruction in a traditional classroom environment or a seminar setting;

(b) Online education, as defined in rule 4765-1-01 of the Administrative Code, which shall include a testing process;

(c) Distance learning, as defined in rule 4765-1-01 of the Administrative Code, which shall include a testing process;

(d) Journals, publications or electronic media formats including compact discs, digital video discs, video home system tapes, or other technological media as approved by board, and which shall include a testing process;

(e) A skills practicum course which shall include an evaluation of skills performance;

(f) Other formats as approved by the board;

(g) Independent study, as set forth in rule 4765-7-11 of the Administrative Code, shall only be conducted through an EMS accredited or EMS approved institution.

Chapter 4765-17-02 of the OAC requires that a minimum of 86 hours of continuing education be obtained by EMT-Paramedics during their three-year certification cycle. This education must include:

- At least 12 hours pediatrics
- At least 4 hours geriatric
- At least 6 hours emergency cardiac care (ACLS or otherwise)
- At least 8 hours trauma issues including triage and transportation protocols

Exceptions to the 86-hour requirement above include:

- Completion of an EMT-Paramedic refresher course that will satisfy 48 of the total 86 hour requirement.

- Current registration with the Nation Registry of EMT at the EMT-Paramedic level and completion of trauma triage and transportation protocol education.
- Passing score within three attempts on an exam approved by the board.

The State of Ohio conducts audits of all credentialed pre-hospital medical personnel to ensure that they have obtained the required continuing education credit to qualify for re-credentialing. During the audit, original certificates of completed continuing education courses must be submitted to the EMS Board for verification. Failure to produce adequate 'approved' training and education could lead to investigation and action by the EMS Board, up to and including revocation of the credential. Each individual within the regional pre-hospital system is responsible for obtaining, maintaining, and tracking their continuing education credits and are also responsible for producing their original course completion records (or a computer-generated list of approved courses from an 'approved' education program and signed by the program coordinator) for the audit.

Upon re-credentialing, employees are required to submit a copy of their valid credential to their respective departments. Filing of these credentials varies based on the agency, as do the levels and methods of department tracking of continuing education for medical personnel.

EMS Communications

Three dispatch centers are operated within the study region: WestCom (regional center), Lakewood PD, and North Olmsted PD. Considering that the initial call to 9-1-1 initiates patient contact and care to the sick and injured, communication and the ability to provide potentially life-saving instructions to the caller is crucial.

Emergency Medical Dispatch (EMD) is a nationally recognized method to deliver medical instructions to callers prior to the arrival of training personnel. WestCom currently uses an approved system of EMD by way of manual cards. This system, although slightly more cumbersome than a computerized EMD system, provides the call-taker with a systematic and protocol driven mechanism to provide pre-arrival instructions to callers. North Olmsted PD uses a computerized version of EMD known as ProQA®. This type of system takes the information from the card-based EMD and allows the call-taker to input information into the computer, which then dictates what instructions to give the caller as well as what types of units to dispatch based on severity of the situation.

Lakewood PD has discontinued the use of EMD due to reported computer problems caused by the ProQA® system. This lack of consistency among the dispatch centers could lead to a lack of consistency in patient care regionally and consideration should be given to bringing all dispatch duties into the regional center, particularly those related to medical incidents.

Recommendation 54: Consider bringing all dispatch duties into the regional center, particularly those related to medical incidents.

Health Insurance Portability and Accountability Act (HIPAA)

The Health Insurance Portability and Accountability Act (HIPAA), was enacted by congress in 1996. Title II of the Act, Preventing Health Care Fraud and Abuse; Administrative Simplification; Medical Liability Reform contains what is commonly known as the Privacy Rule, which took effect on April 14, 2003.

The Privacy Rule regulates the use and disclosure of certain information known as Protected Health Information (PHI). PHI is any information held by a covered entity, which concerns health status, provision of health care, or payment for health care that can be linked to an individual. The Privacy Rule gives individuals the right to request that a covered entity correct any inaccurate PHI and also requires those entities to take reasonable steps to ensure the confidentiality of communications with individuals. Additionally, the Privacy Rule requires covered entities to notify individuals of uses of the PHI and to keep track of disclosures.

The Security Rule, which took effect April 21, 2003, with a compliance date of April 21, 2005, deals specifically with electronic PHI (EPHI). It lays out three types of security safeguards required for compliance: administrative, physical, and technical.

Administrative Safeguards include policies and procedures designed to clearly show how they covered entity will comply with the act. Physical Safeguards include controlling physical access to protect against inappropriate access to protected data. Technical Safeguards include controlling access to computer systems and enabling covered entities to protect communications containing PHI transmitted electronically over open networks from being intercepted by anyone other than the intended recipient. Required specifications must be adopted and administered locally.

The final rule regarding HIPAA enforcement, the Enforcement Rule, was enacted February 16, 2006. The Enforcement Rule sets civil monetary penalties for violating HIPAA rules and establishes procedures for investigation and hearings for HIPAA violations.

As part of the Privacy Rule, health care providers, including EMS agencies, must implement the following administrative requirements:

- Develop and implement written privacy policies and procedures that are consistent with the Privacy Rule.
- Designate a privacy official responsible for developing and implementing privacy policies and procedures.
- Train all workforce members on privacy policies and procedures as well as to have and apply appropriate sanctions against workforce members who violate privacy policies and procedures or the Privacy Rule.
- Mitigate any harmful effect caused by the use or disclosure of PHI in violation of privacy policies and procedures.
- Maintain reasonable and appropriate administrative, technical, and physical safeguards to prevent intentional or unintentional use or disclosures of PHI.
- Develop and implement procedures for individuals to complain about compliance with privacy policies and procedures.
- Not retaliate against a person for exercising rights provided by the Privacy Rule.
- Maintain, until six years after the later of the date of their creation or last effective date, privacy policies and procedures, NPP, disposition of complaints, and other actions, activities, and designations that the Privacy rule requires to be documented.

Providers must also delivery a Notice of Privacy Practices (NPP) to all patients. The provider must also make a 'good faith effort' to obtain a written acknowledgement from patients of their receipt of the NPP. The following figure is a summary of the region's HIPAA compliance.

Figure 110: Summary of HIPAA Compliance

HIPPA Component	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Designated Compliance Officer	●	●	●	●		●	●
Formal Compliance Plan	●		●	●		●	●
NPP Available	●		●	●		●	●
NPP Delivered to Each Patient	●		●	●		●	
HIPPA Training Provided			●	●			
Appropriate Safeguards in Place							
Appropriate Record Retention	●	●	●			●	●

Recommendation 55: Ensure compliance with HIPAA rules and regulations.

Information Technology and Reporting Systems

The ability to accurately record incident data is the backbone of an effective quality assurance and improvement program. Implementation of computerized systems enable the organizations to more efficiently extract that information and make is easier to evaluate the data.

Each of the study agencies are using some form of handwritten Patient Care Report (PCR) that is then scanned into various systems or entered into a Records Management System (RMS) for transmission to the Ohio EMSIS system as well as individual billing services.

The Ohio Emergency Medical Services Incident Reporting System Version 2.2 (EMSIRS-2) contains 80 data points that are required as part of the submission process. All of the study agencies, although using various forms to collect patient data, are reportedly capturing all of the required data points. The following figure is a summary of the various systems and mechanisms used by the study agencies.

Figure 111: Summary of Data Collection Methods and Systems

Reporting System Component	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Method of Data Capture	Hand-written	Handwritten	Handwritten to scan form	Handwritten	Handwritten†	Handwritten††	Handwritten
Uniform Data Points Captured	OEMSIRS	Migrating to FireHouse®	OEMSIRS	Clayton EMS System	Lorain County PCR	OEMSIRS	OEMSIRS
NPP Compliance Assurance Mechanism	"We Share"	"We Share"	"We Share"	"We Share"	"We Share"	"We Share"	"We Share"

* Specific to Health EMS billing
† Transferred to FireHouse by administrative staff
†† Locally developed form

Recommendation 56: Implement and adopt a uniform method of data collection and reporting.

Recommendation 57: Implement a single computerized Patient Care Reporting (PCR) system.

General Comparisons

Understanding that each of the organizations operates independently of one another with the exception of automatic and mutual aid activities, it is also useful to illustrate how each agency compares to the others within the region in regard to resources and scheduling. This type of comparison is helpful in determining the potential feasibility of any future cooperative effort

between two or more agencies within the study region. The following figure provides a general comparison of the resources and schedules of the EMS components within the study departments.

Figure 112: Summary of EMS Resources and Schedules

Attribute	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Number of Primary Transport Units	1	1	3	2	3	2	2
Number of Reserve Transport Units	1	1	2	1	1	1	2
Minimum Transport Unit Staffing	2	3	2	3	3	3	3
Number of EMT/Paramedics (Includes FF/Paramedics)	27	27	33	40	28	29	44
Number of EMT/Basic (Includes FF/EMT)	0	0	10	0	0	0	0
Schedule	24/48	24/48	24/48	24/48	24/48	24/48	24/48
Shift Start	0730	0700	0830	0800	0800	0830	0700
Average Workweek	49.8	49.8	50.4	50.4	50.7	49.8	48.0
Labor Agreement	IAFF Local 1144	IAFF Local 1057	IAFF Local 382/ LPA	IAFF Local 1267	IAFF Local 2129	IAFF Local 659	IAFF Local 1814
Scheduled Overtime Calculation	CBA	CBA	CBA	CBA	CBA	CBA	CBA
Unscheduled Overtime Calculation	CBA	CBA	CBA	CBA	CBA	CBA	CBA

Communications Systems

Cuyahoga County PSAP System Overview

The population of Cuyahoga County is 1,283,925 (per the 2008 census) and is served by 52 Public Safety Answering Points (PSAPs), of which 48 are primary answering points and 4 are secondary answering points. The 9-1-1 system for the State of Ohio has a $0.28 surcharge on wireless telephones to support the 9-1-1 wireless infrastructure.

The Ohio 9-1-1 service program is under the Ohio Public Utilities Commission, with oversight by the Ohio 9-1-1 Council and 9-1-1 Council Coordinator. County oversight is through the Cuyahoga County Department of Justice Affairs, Public Safety Division, Emergency Communications System (CECOMS).

CECOMS acts as a default center to the Primary PSAPs for wireline 9-1-1 calls, and as a Primary PSAP for E9-1-1 wireless calls in Cuyahoga County. All wireless calls terminate in the CECOMS center and are then transferred to the appropriate primary PSAP based on the mapping coordinates displayed at CECOMS. If the wireless call requires the services of a secondary PSAP, CECOMS transfers a second time for dispatch response.

CECOM Director Murray Withrow indicates that in 2007 there were approximately 650,000 wireless 9-1-1 calls placed in Cuyahoga County.[56] Mr. Withrow further estimated wireless 9-1-1 calls are approximately 70 percent of the total 9-1-1 call load for Cuyahoga County.

In 2008, a mapping system was installed that allowed the location identification and mapping of wireless callers for transfer to the correct primary or secondary PSAP. Anecdotal information indicates the mapping system requires further refinement and is not working at its optimum level. According to Mr. Withrow, a potential upgrade in the existing mapping platform is anticipated that will allow optimum capability in mapping 9-1-1 wireless calls.

Cuyahoga County Radio Systems General Overview

The radio systems utilized in Cuyahoga County are a combination of 800 MHz, VHF (very high frequency), and UHF (ultra high frequency). Due to the number of communities in the county, there are a large number of separate and disparate radio systems. There are four 800 MHz systems in the county. These systems serve the areas of Cleveland, Parma, Parma Heights,

[56] Turner, Karl. (June 12, 2008). Ohio System Pinpoints Cellular 9-1-1 Calls within Feet; Cleveland Plain Dealer. ww.cleveland.com/metro/2008/06/new_system_allows_emergency_wo.html. Extracted December 4, 2009.

Brook Park, Brooklyn, Strongsville, North Royalton, Lindale, Olmsted Falls, Olmsted Township, and the Heights-Hillcrest area. The balance of the systems in Cuyahoga County is a mixture of VHF and UHF systems.

The area served by the Westshore COG is a combination of VHF and UHF radios. The area does not have a formalized or consolidated communications system in place.

The State of Ohio developed the Multi-Agency Radio Communications System (MARCS). For first responders in the Westshore COG area, access to the MARCS radio system is through CECOMS, with the Eastcom Regional Dispatch and WestCom serving as backup to CECOMS. This is available for command and control use during significant or wide-area events.

In March 2008, the State of Ohio issued a Statewide Communications Interoperability Plan, developed by the Statewide Interoperability Executive Committee. The Plan encourages each county to develop regionalized communications plans eventually allowing "seamless" integration in to the MARCS system.[57]

Currently, a Cuyahoga County Urban Area group, as part of the UASI 2 (Urban Area Strategic Initiative) Region, is re-writing the Tactical Area Plan (TIC) for UASI. The initial plan was issued in May 2006.

Short-term and intermediate goals of the Statewide Plan include provisioning and integrating additional MARCS talk groups directly into dispatch center consoles, and equipping Incident Command and key supervisory vehicles with MARCS.

Long-range plans encourage the development of a countywide consolidated radio system or the consolidation of a radio system area. Consolidated systems then have gateways or switches allowing integration into the MARCS system for first responders during significant events.[58]

Currently, there are no active plans in progress regarding a consolidated or formalized coordinated radio system within the communities served by the Westshore COG.

[57] http://ema.ohio.gov/Documents/pdfs/Ohio_Interop_Appendices.pdf, State of Ohio Statewide Communications Interoperability Plan, March 2008, Extracted December 9, 2009.
[58] State of Ohio Statewide Communications Interoperability Plan, pp 56-58.

North Olmsted 9-1-1/Dispatch Center Overview

The North Olmsted 9-1-1/dispatch center is a Primary PSAP under the North Olmsted Police Department and is located within the police department building. The center performs 9-1-1 and seven-digit call answering and dispatch functions for the North Olmsted police and fire departments. The center serves a resident citizen population of 31,641, covering 12.5 square miles. The center also provides the following primary services:

- Dispatch police, fire, and EMS calls for service
- Provide emergency medical dispatch pre-arrival instructions
- Utilize BMV, CRIS, LEADS, and NCIC Computer systems
- Monitor burglar and fire alarms systems
- Monitor video and audio equipment for jail and other areas
- Handle walk-in traffic if clerk is not available
- Act as matron or jailer on rare occasions
- Maintain listing of special needs citizens
- Answer police administrative lines if clerk not available

The 9-1-1 dispatch center does not have a mission statement or formal goals specific to its function.

Organizational Structure

The North Olmsted Police Department is a division of the North Olmsted Department of Public Safety. The North Olmsted Fire Department and Division of Youth Services are also under the Department of Public Safety umbrella. The 9-1-1 dispatch center is a separate unit under the Department of Public Safety; however, the Police Department develops the budget and manages the day-to-day affairs of the center under the direction of the administrative captain.

Center personnel representation is by the Ohio Patrolmen's Benevolent Association (OPBA) with a dispatcher-specific agreement. Currently there is a tentative agreement awaiting approval to replace a contract that expired December 31, 2008.

The current agreement changes the previous contract mainly in areas of disallowing cash payment for holidays, sell back of vacation time, sick leave bonus, and differential pay for shifts.

Wage increases for 2009 and 2010 are frozen, with a re-open in October 2010 for wages and unpaid lunch periods.

The current pay range for North Olmsted Communications Center employees is $15.39 to $20.98 per hour. Due to exceptional longevity, all personnel are at the top rate.

Contractual User Agreements/Charge-out

Contract user agreements are not applicable, as the police and fire departments are divisions of the North Olmsted Department of Public Safety, City of North Olmsted. Police Chief Wozniak and Fire Chief Klecan advise that budgetary items benefiting both departments are split evenly. Budgetary inclusions specific to a department, such as Emergency Medical Dispatch certifications and upgrades, are included in the fire department's budget.

Staffing

Staffing for the center is 24/7, with eight FTEs authorized for 2009 and two part-time personnel. Shift schedules are eight hours, staffed by two personnel on each shift. Part-time personnel fill in when three FTE are on regular days off (RDO), occurring approximately three days a week. Part-time personnel also fill in for sick and vacation leave.

In 2008, the center lost two part-time personnel while maintaining all full-time personnel. This amounts to the loss of 1.0 FTE for purposes of turnover and retention rates. The turnover rate for the North Olmsted Center is 11 percent, with an 89 percent retention rate. This is better than the national average reported in 2005 by APCO (Association Public Communications Officials). In APCO's national research report, 17 percent turnover (83 percent retention) emerged as the average for 9-1-1/dispatch centers in the nation.[59]

Workload

The North Olmsted center processes an average of 20 9-1-1 calls in a 24-hour period; this is an average hour workload of just less than one 9-1-1 call an hour for 2008. Data for seven-digit calls is not available. Typically, however, seven-digit call loads are greater than 9-1-1 call loads by as much as 70 percent. Total dispatch of police and fire incidents provide an average hour load of just under three incidents per hour (2.82). Center activity is illustrated in the following figure.

[59] *Staffing and Retention in Public Safety Communications Centers: A National Study Research Report*, August 2005, University of Denver Research Institute, pp 21-22.

Figure 113: North Olmsted 9-1-1 Center Activity – 2008

Activity	Total	Daily Average	Hourly Average
9-1-1 Calls	7,411	20	< One per Hour
Seven Digit Calls	Data Not Available		
Fire/Medical Alarms Processed	3,888	11	< One per Hour
Police Calls Processed	20,678	57	> Two per Hour

The center advises total call processing time may be available through the CAD program. The center does not develop any type of revenue through its services. Other activities performed by the center such as walk-in traffic, handling of administrative calls, CRIS/LEADS entries, providing verbal fire run time information to the fire department, and other miscellaneous duties are not tracked for workload purposes.

Financial/Operating Budget

The following figure provides a budget summary by general categories for the North Olmsted Center for fiscal year 2009. The budgetary figures below are associated only with the 9-1-1 dispatch center and not with other budgetary requirements within the Police Department Administrative Division. The table also provides an average cost per employee based on total personnel services appropriations.

Figure 114: North Olmsted 9-1-1 Center Operating Budget

Budget Category	FY 2009 Estimated
Personnel Costs (Salary & Benefits)	673,924
Materials and Supplies	1,000
Contractual Services	32,997
Estimated Total	**$707,921**
Total Personnel Services Category Cost per Employee – 9.0 FTEs	**$74,880**

As noted earlier, all center personnel are at top pay rate due to longevity. The category for Contractual Services contains line items for legal fees, education and training, equipment repairs, and maintenance.

Operational Practices and Position Descriptions

Position descriptions are in place for the center. The title of the primary dispatch position is Radio Dispatcher and indicates a development date of September 1993. The position description is clear and concise, listing 21 duties and responsibilities as a dispatcher. The listing generally represents the current duties and responsibilities required within the center.

The position description does not indicate knowledge of Windows-based systems, minimum word per minute for keyboarding, or the ability to multi-task under stressful conditions. Requirements for the position include the obtaining following certifications:

- LEADS I and II Certification
- CRIS Basic and Advanced certification
- CCH (Computerized Criminal History) certification
- Emergency Medical Dispatch certification
- Cardiopulmonary resuscitation certification (CPR)

The last review of position descriptions occurred in 1993. With the technology advances that have taken place since that time, consideration should be made to adding the following position requirements:

- Knowledge of Windows-based computer system
- Keyboarding with minimum wpm (words per minute) requirement
- Ability to multi-task in fast paced environment
- Update to latest public safety communications terminology

Recommendation 58: North Olmsted 9-1-1/Dispatch Center - Review position description for Radio Dispatcher and update.

Hiring Practices

The City of North Olmsted utilizes the Civil Service Commission to conduct examinations for positions within the center. The qualifications and required certifications listed on the Civil Service Announcement for Radio/Central Dispatcher closely follow those listed on the position description. The Civil Service Commission gives the prospective applicant a test specific to dispatch skills. The contents of the test for applicability were not available. The hiring process includes background check, polygraph, and drug testing.

Evaluations

Center employees receive evaluations three times during probationary status and then annually thereafter. Special evaluations are available for an employee as appropriate or deemed necessary. Each evaluation category receives a rating of 1 through 5. A rating of 1 indicates

the employee is failing to meet minimum requirements and a 5 indicates the employee exceeds accepted standards. The following are the performance dimension categories on the center employee evaluations:

- Job Knowledge and Application
- Team Effort/Cooperation
- Quantity
- Information Processing
- Communication
- Dealing with the Public
- Responsibility
- Job Attitude
- Timeliness
- Quality

Each rating dimension has space for additional comments or supporting information for the type of rating. The evaluations require the signature of the rating person, as well as the employee.

Training – New Hire

The Training Program for new hires encompasses approximately four months. This includes most of the required certifications for the position. The center maintains a training manual for 9-1-1 call taking and police dispatch with Daily Observation Reports (DORs) and appropriate documentation of training. The center's Coaches/Field Training Officers (FTOs) do not maintain certification as trainers. The fire department provides training for the fire/medical dispatch position, including CPR and Emergency Medical Dispatch certification.

Training – On-Going/Continuing Education

It is difficult to provide on-going training when staffing levels, overtime costs, and training budgets are at the maximum allowed. The national average of continuing education training is 24 hours for public safety communicators. The center provides a minimum of 12 hours of additional training and continuing education annually.

Recommendation 59: North Olmsted 9-1-1/Dispatch Center - Establish a minimum goal of 24 hours annual continuing education training per communications employee.

Emergency Medical Dispatch Program

The center utilizes Medical Priority Dispatch System™, a protocol system utilizing a standardized interrogation and time-life symptom determination that enables the dispatcher to prioritize system response according to user-defined response configurations. At this time, however, the North Olmsted Fire Department does not "breakdown" the calls into response categories but runs 'hot' on all calls.

Quality Assurance

There are no Quality Assurance programs utilized in the center.

Standard Operating Polices/Procedures

The center maintains a Standard Operating Procedures (SOP) manual. The fire department also provides an additional fire resource manual regarding equipment, fire procedures, fire stations, and mutual aid response. The SOP manual contains the following categories:

- Chain of Command
- Radio Procedures
- Job Description
- Promises and Liability
- Center Security
- Police Dispatch – General Order
- Responsibilities
- Fire Dispatch
- Comm Center Functions
- Equipment
- Telephone Complaints
- 9-1-1

Performance Standards

Best practices recommend that 9-1-1 emergency dispatch centers have established performance standards. Call taking and dispatch performance standards allow the center to measure performance as the initial entry or gateway into the overall public safety response system.

The ability to accurately measure and track call taking and dispatch performance standards are two-fold. First, they set a formal standard for the center; secondly, they provide documentation if traffic loading exceeds the ability of staffing to effective management of calls for service.

Performance standards for a center include call answer time (call ring time to answer) call taking time (call set-up) and initial notification of a call for service (dispatch). When a center has the ability to measure these standards, trending showing extended call taking and dispatch times may indicate insufficient staffing.

The existing equipment at the North Olmsted Center does not allow for tracking of performance standards. The recommended equipment upgrades under Facilities and Technologies, with applicable software interface, provide the ability for performance measurement.

Any performance standard(s) established by the center requires a Standard Operating Procedure outlining the standard and performance times. As a written standard, an SOP provides a formal baseline or benchmark for documentation.

The center does not have established performance standards. One of the most common documents for dispatch standards is the *NFPA 1221*.[60] *NFPA 1221* recommends a standard of 95 percent of calls received on emergency lines be answered within 15 seconds, and 99 percent answered within 40 seconds. It includes a standard of emergency call processing and dispatching of 60 seconds 95 percent of the time, and 90 seconds 99 percent of the time. It is common for police services to adopt the same or stricter call answer to dispatch standards for Priority 1 (emergent) calls.

As the *NFPA 1221* standard is a common best practice for emergency dispatch centers and the parameters are often misunderstood, ESCI provides the following table for the overall report.

Figure 115: NFPA 1221 Alarm Processing Summary

Call Ring Time	Call Process Time	Dispatch Processing Time
Time elapsed from time call enter the disptach center telephone switch and the time elapsed unitl the call is answered.	The time elapsed between call answer and entry into CAD with enough information for dispatch	Time elapsed between the call being time stamped for dispatch and inittial radio dispatch notification

[60] *NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, 2009 Edition, Chapter 7 Operations, Sections 7.4.1 and 7.4.2.

Recommendation 60: North Olmsted 9-1-1/Dispatch Center - As upgrades occur in center technologies, initiate performance standards for baseline benchmarking. Adopt performance standards in a Standard Operating Policy/Procedure.

Facilities and Technologies

Facility

The 9-1-1/dispatch center is located in the North Olmsted Police Department building located at 27243 Lorain Road. Built in 1974, it is of brick construction reinforced with steel I-beams and contains a total of approximately 25,000 square feet. Several remodel projects within the building have occurred since original construction. The rating of the building is unknown per standards set by *NFPA 1221*. The communications center utilizes approximately 300 square feet, with an additional space of 117 square feet for a communications administrative office and equipment technical room.

Maintenance of security to the center is through an electronic key lock system for employees with the ability for dispatch to control entry into the center via an override buzz unlock system. Dispatch also monitors video displays for various areas of the police department and campus buildings.

The facility utilizes a variety of UPS (Uninterruptible Power Supply) systems for the electronic equipment. These UPSs all vary in voltage depending on equipment power need. The facility maintains a 200 kW Cummins Diesel generator (installed in 2003) that supplies power for the entire building.

Except for the CAD system (1996), most of the equipment supporting the center is less than nine years old, with the radio control equipment purchased in 2009.

Radio Consoles/Workstations

The dispatch center contains two redundant positions, with a third smaller position allowing additional depth in answering 9-1-1 lines. The two redundant positions contain the following capabilities

- Motorola Radio Control Station
- TAC CAD (Thomas A Craven CAD product)
- Computer access to Ohio BMV/CRIS/LEADS
- Mapping for wireless calls

- Toshiba standard handset
- Positron 9-1-1 call display

The dispatcher workstations are second or third generation in age and are not ergonomic in design; however, the Motorola radio control stations are new. Any new application of technology, specifically CAD or larger integrated screens, may require additional 'remodel' of the older style fixed workstation.

9-1-1 call answering equipment/controller is 'vintage' public safety equipment. The Positron ANI/ALI display and the Toshiba handset are not integrated to allow for hands free operation. The system lacks full integration with the TAC CAD. With the implementation of VoIP and NG9-1-1 (Voice over Internet Protocol and Next Generation 9-1-1), the controller and equipment will require replacement to manage those calls correctly. This includes text and eventually video from personal handheld devices. VoIP telephone systems, however, are able to perform in a standard Emergency 9-1-1 environment and in a VoIP environment.

A migration to a Windows-based system would allow operation of the 9-1-1 telephone equipment with a mouse click, provide integrated TDD/TTY on screen, call detail printing, CAD interface, and call check recording. Windows-based systems provide greater flexibility for information storage (large internal number directory), and re-bid of wireless calls for updated location if available. The screen display for the windows based system is user defined by each dispatcher. The 9-1-1 controller allows faster processing and management of 9-1-1 and seven-digit calls; an important factor for a center staffing with two personnel. A software package with interface to the CAD system allows for automatic collection of call data, including ring time, answer time, call set-up time in CAD, and dispatch.

Telephones

The center utilizes a Positron 9-1-1 call display and an older Toshiba handset to answer emergency and non-emergency calls. The Automatic Number Identifier/Automatic Location Identifier (ANI/ALI) displays on the separate Positron screen. The Toshiba handset provides three lines for 9-1-1 calls, three for seven-digit non-emergency calls, three for non-emergency lines, and two tie lines (ring down) to the fire stations.

Computer Aided Dispatch (CAD)

The TAC (Thomas A Craven) CAD system, purchased in 1996, is a police CAD system. The TAC Company is based in Cleveland, Ohio, and specializes in serving northeastern Ohio governmental agencies with hardware and software systems. Although available, the TAC CAD system does not contain the fire dispatch module. This is the first CAD system reviewed by ESCI with modifications to the police module to allow entry of fire/medical calls for service.

Maintenance and upgrades to the CAD system are the responsibility of the police department. Reportedly, funds were not available for the CAD fire module when the fire department initiated dispatch services from the center. The police department modified the police call entry feature in the CAD, allowing a very basic entry of a fire/medical call for service. As the actual TAC fire CAD module and records management module is not on the system, the fire department must call the dispatch center after the fire/medical run to obtain original call report information and run times. This also requires the fire department to manually enter and maintain all records, reports, and NFIRS (National Fire Incident Reporting System) data. The police department has the records reporting module integrated to the CAD system.

The lack of a fully integrated fire dispatch module and RMS system requires manual entry of all fire/medical incident reporting. There are no provisions for automatic statistical or report information for the North Olmsted Fire Department. A functional fire CAD module and integrated fire RMS are considered basic standard applications for a public safety communications and fire/medical response system.

Equipment upgrades are essential to the provisioning of public safety emergency communications and dispatch response. The upgrade to VoIP capability allows the proper caller/location identification and response to an internet based 9-1-1 call for service. VoIP provides greater flexibility for dispatchers and faster call processing. Fire CAD and integrated RMS allows greater accuracy and speed in fire call processing, response, and automatic versus manual entry of data and fire incident reporting.

Identified equipment upgrades also allow the center to capture and identify performance standards in call receipt to initial unit dispatch. This also meets the standards identified in *NFPA 1221* for ability to measure call taking to initial unit notification (deployment) time.

Recommendation 61: North Olmsted 9-1-1/Dispatch Center - Bundle the CAD and RMS modules with equipment for application under a fire grant, or a capital outlay/planning program for upgrade of the 9-1-1 telephone controller and addition of the CAD fire module with integrated RMS based on priority of need.

Recording

The center utilizes a Dynamic Instruments Digital Recorder with 32 channels. Currently, 24 channels are in use.

Expansion Capability

There is no room for expansion in the current communications center facility.

Radio System

The radio frequencies at North Olmsted are VHF. The fire department shares the same primary dispatch frequency as the fire departments dispatched by WestCom.

Technology Interfaces

- AVL – Automatic Vehicle Location
- Mapping – Wireless calls and vehicle locations
- TDU – Police only
- Records Management – Police only (functional fire CAD and records management not available)

Back-up Operations

Back-up operations are available at the Westlake and Fairview Park Police Departments. Both Westlake and Fairview Park have the ability to accept re-routed 9-1-1 calls from North Olmsted. Westlake Police Department is the preferred location.

Long-Range Plans

There are currently no long-range plans in place for the center at this time.

General Observations

There is an obvious camaraderie and cooperation between police and fire administration and dispatch center personnel. All are dedicated to 'getting the job done.' The small amount of turnover in the center is a definite asset and speaks to employee satisfaction. The center

provides Emergency Medical Dispatch (EMD) pre-arrival instructions. This is a major effort and commitment requiring recognition.

Kudos 2: The obvious camaraderie and cooperation between police and fire administration and dispatch center personnel translates into low employee turnover and job satisfaction at the North Olmsted 9-1-1/Dispatch Center.

A lack of basic fire computerization creates many manual tasks, slowing down system and reporting processes.

Lakewood Communications Center Overview

The Lakewood Communications Center is a Primary PSAP and dispatch center located within the Lakewood Police Department in the Lakewood City Hall. The center performs 9-1-1 and seven-digit call answering and various dispatch related functions for the Lakewood Police and Fire Departments. The center serves a citizen population of 56,646 covering 6.7 square miles. Although not inclusive, the center also provides the following additional primary duties/services:

- Answers Police administrative lines.
- Maintains jail log for female prisoners.
- Dispatches Animal Control Units.
- Assists with female prisoners, including surveillance of cellblocks.
- Dispatches/Assists Parking Enforcement.
- Assists with booking and search of female prisoners.
- Monitors Public Works Radios.
- Maintains files on house checks, repossess autos, school guards, lost and found animals.
- Monitors various security cameras.
- Enters into CAD stolen vehicles, missing juveniles, new businesses, towed vehicles.

The communications center does not have a mission statement or formal goals specific to its function.

Organizational Structure

The communications center, housed under the Department of Public Safety umbrella, is in the Administrative Division under Police and Law Enforcement. Direct supervision is by the Administrative Division Captain. The Administrative Division also includes positions for

correction officers, police data entry clerks, property evidence technicians, and an office assistant.

Center personnel representation is through the Fraternal Order of Police/Ohio Labor Council (FOP/OLC), Inc. The current contract expired February 28, 2010. The contract is specific to the dispatcher unit/communications center.

The pay range for Center employees for 2009 is $15.78 to $19.73 per hour. The city also provides an additional $0.75 per hour for proficiency in LEADS (Law Enforcement Automated Data System) and for the performance of matron duties. Further compensation includes payment for longevity. The compensation ranges from a total of $500 annually for five years longevity to $2,500 for 25 years longevity.

Contractual User Agreements/Charge-Out

No contracts or agreements currently exist or are planned in the future.

Staffing

Staffing for the center is 24/7, utilizing 11.0 FTE. Center authorization is for 12.0 FTE, but 1.0 FTE remains unfilled. The center staffs two positions at all times, unless one of the positions is assisting with jail duties. Shifts are normally eight hours, five days a week.

The last position hired was in April 2007. Since that time, turnover has not occurred in the center. This puts the center at a 100 percent retention rate for the last two years. This is exceptional compared to the national average reported in 2005 in the study initiated by APCO Project RETAINS.[61]

Workload

Statistics for 9-1-1 call loading were not available from CECOMS in time for this report. The center does not track seven-digit call loads.

[61] *Staffing and Retention in Public Safety Communications Centers: A National Study Research Report*, August 2005, pp 21-22.

Figure 116: Lakewood 9-1-1 Dispatch Activity – 2008

Activity	Total	Daily Average	Hourly Average
9-1-1 Calls	Data Not Available		
Seven Digit Calls	Data Not Available		
Fire/Medical Alarms Processed	6,490	18	< One per Hour
Police Calls Processed	46,297	127	> Five per Hour

Total calls for service (police and fire) average approximately 145 a day or an average of six incidents per hour. The center also provides dispatch services to Animal Control and assists Parking Enforcement as needed. The dispatchers also serve as corrections officers for female prisoners.

Financial/Operating Budget

The following figure provides a 2009 estimated budget summary by general categories for the center. The budget is within the police department but is developed and maintained as a separate unit within the police department's budgeting process. The budgetary figures in the table are associated only with the 9-1-1/dispatch center and do not contain other budgetary requirements within the Police Department Administrative Division. The table provides an average cost per employee based on total personnel services appropriations.

Figure 117: Lakewood 9-1-1 Center Operating Budget

Budget Category	FY 2009 Estimated
Personnel Costs (Salary & Benefits)	789,981
Materials and Supplies	38,355
Estimated Total	**$828,336**
Total Personnel Services Category Cost per Employee – 11.0 FTEs	**$71,816**

Position Descriptions

A position description titled Dispatcher Tasks, Duties, and Responsibilities is in place for the center. It contains 42 detailed and descriptive tasks and responsibilities. The listing of duties is thorough and more than adequately describes assignments within the position. Certification requirements for the position include:

- LEADS/CCH certification
- Matron certification
- CPR/First Aid

Hiring Practices

The prospective applicant completes a City of Lakewood Application for Employment, which contains sections for general information, education information, employment history, professional references. The city requests skills or experience in computer operation and software, but does not provide a requirement for knowledge of a Windows-based system or minimum keyboarding skills. No skill testing is conducted. The city conducts a background check on a potential employee and requires a physical fitness examination, psychological evaluation, polygraph, and drug screening.

Recommendation 62: Lakewood Communications Center - Consider adding the following requirements to either the position description or the requirements listed by the City for required or desired qualifications:

- Knowledge of a Windows-based system
- Keyboarding skills (establish minimum wpm requirement)

Evaluations

The Lakewood Police Department Job Performance Evaluations contain four performance factors. Performance factors are rated against the job description and an overview of specific tasks outlined in the rating form reflects the job description. The four performance factors include:

- Appearance
- Dependability/Attendance
- Communications Skills
- Mindset/Professionalism

Each performance factor includes an area for written comments about strengths and weaknesses. There are five rating standards applied to each factor, ranging from Satisfactory to Unsatisfactory. The Job Performance Score Sheet requires the employee's signature and appropriate chain of command signatures.

Training – New Hire

In 2008, Lakewood Center developed a FTO (Field Training Officer) program, creating a more formalized program for new hires. To date, the program has not been utilized as employee retention is at 100 percent.

The Training Program covers 16 weeks, with outlined tasks and training for each week, including exams. The last four weeks of training include live console training, ride-alongs, and exams. The Training Program utilizes Trainee Checklists and DORs (Daily Observation Reports) to track trainee progress.

Training – On-going/Continuing Education

Staff available to provide overtime coverage is inadequate to allow for appropriate continuing education training. With a national average for continuing education of 24.0 hours a year, a goal *greater* than the current 12 to 16 hours annually per employee is desirable. It is notable the budget document page specific to dispatch indicates in fiscal year 2009 the accomplishment of identifying in-service training needs. The annual average training for dispatch center employees is 6 to 12 hours.

Recommendation 63: Lakewood Communications Center - Establish a realistic continuing education annual training goal affording more training hours per employee than currently provided.

Medical Dispatch Program

Lakewood 9-1-1 Dispatch Center does not provide a medical dispatch program.

Quality Assurance

Lakewood 9-1-1 Dispatch Center does not provide a Quality Assurance program.

Standard Operating Polices/Procedures

A fire dispatch manual is available in the center. The date on the manual is January 2009, indicating recent development or revision. The manual is very comprehensive and thorough. The following lists the individual procedures provided in the manual:

- Unicodes
- Lock-outs Home and Auto
- Response Guidelines
- Dispatch Complaints
- Callback Procedures/List
- Dangerous Scene/SWAT
- Fire Dispatch Procedures
- Jail/Prisoner Transport

- Radio Procedures
- EMS STAT
- Municipal Alarm System
- Squad Dispatch Procedure
- Communications Technician
- DOA Protocol
- Electrical Fires/Emergencies
- MASS Casualty Protocol
- Bomb Threats
- MVA and Extrications
- Severe Storm/Multiple Incidents
- Haz Mat and Technical Rescue
- Mutual Aid
- EOC Alert List
- Carbon Monoxide Investigation

The center also maintains a comprehensive and well-organized 9-1-1 and police dispatch manual. The manual contains the following categories:

- Organizational Structure
- Incident Handling Procedures
- Rules of Conduct
- Center Security/Emergencies
- General Telephone Procedures
- Equipment/Utility Failure
- 9-1-1 Operations
- Misc. Center Duties
- General RadioMajor Disaster Plan
- CAD
- Callback/External Support

Performance Standards

The center does not have performance standards.

Recommendation 64: Lakewood Communications Center - As upgrades occur in center technologies, adopt performance standards for call answer to dispatch notification to measure against data collected on software programs. Adopt performance standards in a Standard Operating Policy/Procedure.

Facilities and Technologies

The Lakewood 9-1-1 Dispatch Center is located in the City Hall Building at 12650 Detroit Avenue. The building is of brick construction. The dispatch center is located inside the area dedicated to the Police Department. Security to the facility is via electronic locks to the dispatch facility entrance and on the building entrance after hours. It is unknown whether the building carries an essential services rating as outlined in standards set by *NFPA 1221*. The center occupies approximately 600 square feet.

For back-up power, the facility utilizes various sized UPS for the electronic equipment, interfaced with a Kohler 300 kW generator. The generator provides power to the entire building. Most of the equipment supporting the center ranges from 4 to 15 years in service.

Radio Consoles/Workstations

The center maintains two redundant positions, with a third smaller position for handling telephone call overflow. Reportedly, some of the equipment at this position is not operational. The two redundant positions contain the following primary dispatch equipment:

- Zetron Radio Control Station
- HTE Sungard 400 CAD – Entry and Status screens
- Access to BMV/CRIS/LEADS
- Zetron Handset Telephone with ANI/ALI display

The workstations are an older style with indications of several remodel applications to accommodate different versions of older equipment. The workstations are not ergonomically designed.

Telephones

The Center's Zetron® handset model answering system has been in service approximately 15 years. The telephone supports five 9-1-1 trunks, five emergency seven-digit lines, and five seven-digit non-emergency lines. There are eight tie lines or ring downs to various city areas.

The 9-1-1 and seven-digit telephone answering system are separate components with some integration. The system is at least two to three generations old. It is not capable of managing VoIP internet based 9-1-1 technology. In order to start receiving these calls effectively, including text and video from citizen personal devices, the telephonic system and controller will require replacement. VoIP systems are capable of managing existing Emergency 9-1-1 technology alongside the new IP based (NG9-1-1) technology.

There is a third or partial position in the center with telephones for call overflow. It was reported that some of the equipment at this position does not work.

Computer Aided Dispatch

The CAD system is an HTE Sungard 400, designed specifically to run on an IBM platform has been in service approximately ten years. The City of Lakewood IBM AS/400 is at its end lifecycle and cannot accept the additional interfaces required of a CAD system. The current

AS/400 platform may not be capable of interfacing with a VoIP telephone and controller. The CAD system does have an interface to police and fire records management.

Recommendation 65: Lakewood Communications Center - Budget documentation for the dispatch division indicates plans are in the beginning stages for capital improvements to the dispatch center and CAD system. Realizing public entity financial constraints, the following replacement/upgrade of equipment requires prioritization:

- CAD operating platform replacement
- CAD system upgrade
- 9-1-1/seven-digit telephone system and controller
- Center workstations

The partially operating third position is optimal for a third or back-up dispatch position or a dispatcher workstation with seven-digit telephone and internet capabilities.

Recording

The center maintains a Dynamic Instruments DI Voice Vault™, which has been in service for four years.

Expansion Capability

There is some potential for the addition of a smaller workstation console, modular in design, to replace the existing telephone overflow position. This, however, may require rearranging some of the existing equipment.

Radio System

The radio frequencies utilized at Lakewood are a combination of VHF and UHF. The primary system is UHF (460 series) with communications capabilities with other entities on VHF.

Technological Interfaces

- TDU –Terminals Available for police and EMS
- Fire Station Alerting Interface to CAD
- Records Management – Available; manual search for outliers

Back-up Operations

The City of Lakewood maintains an Emergency Operations Center (EOC) at Fire Station No. 1, on Madison Avenue, approximately 20 blocks west of the primary center's location. The

Lakewood 9-1-1/Dispatch Center has the capability to operate out of the EOC should the primary location become uninhabitable.

Long-Range Plans

The 2009 Estimated Budget document identifies future goals of identifying and providing in-service training needs, and initiating a study of communications capabilities for improvement and replacement.

General Observations

The development of the Lakewood 9-1-1 Dispatch Training Manual with recognized FTOs (field training officers/coaches) and lack of dispatcher turnover are significant assets. Police and fire SOPs are well organized and very thorough.

Kudos 3: Employee morale and a low turnover at the Lakewood Communications Center can be connected to the use of FTOs and established, well-documented SOPs.

A lack of sufficient IT staff to manage public safety applications is problematic.

Westshore Central Dispatch (WestCom) Overview

WestCom is a secondary PSAP and a fire/medical dispatch center located in the St. John's Medical Center at 29000 Center Ridge Road in Westlake, Ohio. The dispatch center provides secondary PSAP 9-1-1 call answering, fire, and medical dispatch services for Bay Village, Fairview Park, North Ridgeville, Rocky River, and Westlake. The dispatch center receives 9-1-1 call transfers from the primary PSAP of those entities and wireless 9-1-1 calls from CECOM. As North Ridgeville is in Lorain County, 9-1-1 wireline and wireless transfer calls for North Ridgeville originate from the Lorain County 9-1-1 Center. WestCom also provides dispatch services to the Westshore HAZMAT Team and the Ohio Region 2 USAR (Urban Search and Rescue) Team.

The center provides fire/medical dispatch services for a total population of 110,799, covering 56.6 square miles. WestCom also provides the following primary duties/services:

- Provide emergency medical dispatch pre-arrival instructions
- Dispatch alarms received from public and private agencies
- Maintenance of business alarm information
- Maintenance of daily rosters for fire station manning and OT callback
- Fax or telephone fire medical run reports to fire stations

- Track daily manning for special teams
- Interface with hospitals as required by medics
- Update geo-file bases for all user cities

The Center has the following mission statement:

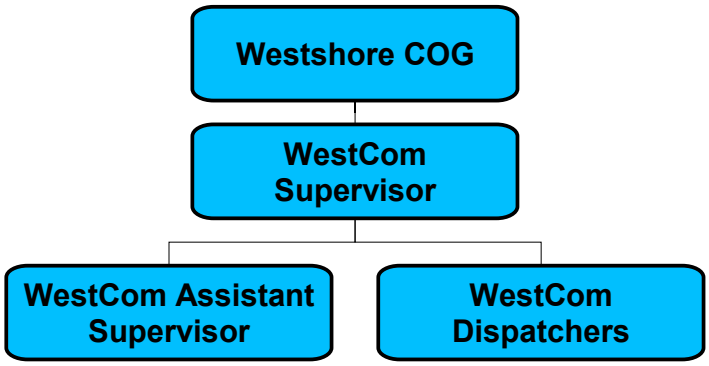
> *The Westshore Central Dispatch is dedicated to providing prompt, professional emergency services to the citizens of the Westshore Communities of Westlake, Bay Village, Rocky River, and Fairview Park, and North Ridgeville. It is our role to assist in the protection of the citizens of, and visitors to, all of the Westshore Communities. We serve as a vital link between the public and the public safety forces of these areas. Our motto: "Excellence-Integrity-Professionalism"*

Organizational Structure

WestCom is under the umbrella of the Westshore Council of Governments (COG) Mayors. The City of Westlake, however, is the administrative agency of control for WestCom and its employees. This includes budgetary approval, initial budget funding, purchasing, payroll, maintenance of benefits, general financial tracking, and approval of expenditures. WestCom personnel are employees of the City of Westlake.

The City of Westlake's organizational chart indicates WestCom is under the Westlake Fire Department, with its own fund within the fire department budget. WestCom provided the following organizational chart for the agency.

Figure 118: Westshore Organizational Chart



WestCom holds quarterly meetings with contract fire agencies. No formalized mechanism is in place to allow input on recommendations from the fire departments or their fire chiefs, although they contribute proportionally for operating the 9-1-1 center. Agencies lack advisory capacity for

recommendations on internal administrative, operational, procedural, technical, and budgetary items.

Success of current and future operations requires an organizational structure that allows contract agencies advisory capacity and input on recommendations regarding service delivery. WestCom indicates the fire departments meet informally with dispatch staff on a quarterly basis to discuss operational issues and concerns. There is however, no formalized or designated process in place defining contract agency roles and responsibilities. Essentially, there is no recognized, formal method for invested stakeholders to provide input and advice towards center operations and technology.

A formalized organizational structure allowing stakeholder input is a primary consideration for existing and potential new members. Organizationally depicted, a public safety communications advisory body is directly below the governing/controlling body and above the agency director/supervisor, placed to the side with a dotted line denoting advisory capacity.

Recommendation 66: WestCom - Develop an organizational chart accurately reflecting the governing structure and lines of authority.

Working with the Westshore COG, the City of Westlake and participating fire departments should develop a WestCom organizational structure with a formalized advisory committee of the executive officers (fire chiefs) of the fire departments. Determine a methodology for memorializing the committee through either an MOU (memorandum of understanding) or modification of the creating ordinance. Consider the following minimum responsibilities for the Fire Chief Advisory Committee:

- Input, approval, and subsequent adoption of protocols, procedures, and processes for WestCom.
- Ability to annually provide input on the Communications Supervisor evaluation.
- Ability to review and recommend a budget for consideration by Westlake/Westshore Council of Governments.
- Ability to develop and recommend short-term and long-range technological upgrades/improvements to the Westshore COG.
- Ability to recommend changes or enhancements to the overall operational function of WestCom.

Include the recognition of the Fire Chief Advisory Committee on the organizational structure chart with a dotted line denoting advisory capacity.

Contracts/Agreements

Center personnel are not part of a bargaining unit or other affiliation. The current pay range for full-time personnel is $16.50 to $19.00 per hour; $15.00 to $17.00 per hour for part-time personnel. As employees of the City of Westlake, full-time center personnel receive health insurance, vacation allowance, personal time, and are in the State of Ohio Retirement System for public employees. Part-time employees receive the same benefits except health care.

Center personnel received a 3 percent pay raise each year for the last three years. The Mayor of the City of Westlake determines the compensation for the employees of the center.

Contracts/Agreements – Establishment of Westshore Central Dispatch

The creation of Westshore Central Dispatch occurred under Chapter 185 of the codified ordinances of the City of Westlake. Adoption of Ordinance 2005-132, formally created the Center at the September 15, 2005, City of Westlake Council meeting. Ordinance 2005-132, established the center as a:

> *…department reporting to the Westshore Council of Governments (COG) and administratively under the control of the City of Westlake for the purpose of providing fire and emergency medical services (EMS) dispatch for the Cities of Bay Village, Fairview Park, Rocky River, Westlake and any other cities which may elect to join pursuant to the Westshore Council of Governments' cooperative agreement authorized pursuant to Ordinance 2004-115.*

Since the original ordinance, North Ridgeville joined the cooperative agreement.

The ordinance allows that funds are,

> *…established and helped by the Westshore Council of Governments to collect operating funds from participating cities and pay for the cost of operation, maintenance, initial equipment and other needs to continue and maintain the daily operations of the center and any other costs as may be necessary for the efficient operation of the center.*

The ordinance further indicates the Westshore Central Dispatch shall consist of the following personnel:

- One Supervisor
- One Assistant Supervisor
- Up to three Senior Dispatchers appointed by the Supervisor from the dispatcher pool
- Up to ten FTE Dispatchers

- Up to ten part-time Dispatchers

The agreement includes the following sections.

- 185.01 Establishment and Composition
- 185.02 Clothing and Issuance
- 185.03 Original Hires: Physical/Age Requirements
- 185.04 Hearing and Physical Examination
- 185.05 Powers and Duties of Supervisor; Acting Supervisor

Contract User Agreements – User Charge-out Overview

The formula for WestCom user agencies is comprised of two parts: a base fee shared equally and a fee derived from each user's percentage of population against the whole. As an example, there are five fire departments in WestCom as contract user agencies for fire and medical dispatch services. Each fire department has the following population:

Figure 119: WestCom Base User Fee Summary

Agency	Population Served
Fire Department A	25,000
Fire Department B	15,000
Fire Department C	11,000
Fire Department D	37,000
Fire Department E	2,000
Total Population	**90,000**

The 2010 estimated budget is $900,000. There is an ending fund balance of $50,000 on December 31, 2009. Therefore, the total charged out to WestCom Contract Users for estimated 2010 budget year is $850,000.

Formula Part I – 10 Percent Base Charge

The first part of the formula requires WestCom Contract Users share a budget base, which is 10 percent of the estimated budget requirement. In this example, 10 percent of $850,000 = $85,000. The five contract user agencies share equally the 10 percent base of $85,000, for a cost of $17,000 per entity.

Figure 120: WestCom 10 Percent Base Charge Formula Distribution

Agency	10 Percent Base Charge
Fire Department A	$17,000
Fire Department B	17,000
Fire Department C	17,000
Fire Department D	17,000
Fire Department E	17,000
Total Population	**$85,000**

Formula Part II – 90 Percent Population Ratio

The second part of the formula is an allocation based on population. Contract user agencies are charged 90 percent of the remaining estimated budget based on their individual population against the sum of population of agencies in the center. Balance to be charged out: $765,000 ($850,000 – $85,000) per the following figure.

Figure 121: WestCom Population Based Charge Formula Distribution

Agency	Population	Percentage of Population	Population Charge
Fire Department A	25,000	27.778%	$212,502
Fire Department B	15,000	16.667%	127,503
Fire Department C	11,000	12.222%	93,498
Fire Department D	37,000	41.111%	314,499
Fire Department E	2,000	2.222%	16,998
Total Population	**90,000**	**100.000%**	**$765,000**

City of Westlake Ordinance 2005-132 defines the type of service (fire and emergency medical) WestCom provides to participating agencies but is silent on service levels provided by WestCom to the agencies.

The charge-out formula for the fire departments participating in the WestCom Center is not widely understood by center staff or outside interested parties.

Recommendation 67: WestCom - Determine if a description of service levels provided to the contracting agencies is necessary. This includes a method of formalizing service levels provided through an MOU or modification of creating ordinance. A partial listing of examples of service levels includes:

- Call receipt and dispatch of all fire/medical calls for service
- CAD entry and tracking of all equipment
- Database development
- Development and maintenance of SOPs
- 24/7 radio and telephone recording
- Maintenance of agency response zones, districts, and equipment assignment
- Response to service inquiries (system complaints) within a time certain

Recommendation 68: WestCom - Develop an informational handout utilizing the charge-out explanation in this document or a similar one developed in-house.

Staffing

The center is staffed 24/7, with seven FTE and seven part-time personnel. Shift start and end times are staggered. Peak times starting at of 7:00 a.m. to 11:00 p.m. maintain a minimum of two dispatchers, but the center tries to staff with three personnel during those hours. The hours of 11:00 p.m. to 7:00 a.m. maintain two personnel on duty. Part-time personnel work an average of 30 hours a week over a two-week period. Part-time personnel back-fill various shifts during a week instead of the same shift normally worked by full-time personnel.

WestCom experienced a 23.8 percent turnover rate or a 76.2 percent retention rate for the two-year period of 2007 and 2008. The retention rate of personnel is lower than the national average reported in 2005 (83 percent).[62]

Workload

The WestCom Center processes approximately 17 9-1-1 calls, 92 seven-digit calls, and 57 fire/medical calls for service within a 24-hour period. Staff advises they have a requirement, still in memo format, regarding call processing and dispatch performance times. No consistent statistical information is captured and distributed nor is there any identification of outliers. Workload is distributed based on the following figure.

[62] *Staffing and Retention in Public Safety Communications Centers: A National Study Research Report*, August 2005, pp 21-22.

Figure 122: WestCom Dispatch Activity – 2008

Activity	Total	Daily Average	Hourly Average
9-1-1 Calls	6,140	17	< One per Hour
Seven-Digit Calls	33,657	92	< Four per Hour
Fire/Medical Alarms Processed	20,678	57	> Two per Hour
Police Calls Processed	46,297	127	> Five per Hour

Financial/Operating Budget

The following table provides a budget summary of the general categories for WestCom.

Figure 123: WestCom Operating Budget

Budget Category	FY 2009 Estimated
Personnel Costs (Salary & Benefits)	$819,360
Materials and Supplies	94,987
Communication Equipment	66,000
Other	5,730
Estimated Total	**$986,077**
Total Personnel Services Category Cost per Employee – 7.0 FTEs and 7.0 Part-time	**$78,034109**

Budget development is by the WestCom Supervisor for inclusion in Westlake Fire Department's budget as a separate fund. It then moves to the Westlake City Council for budget hearings. The notable outlay for communications equipment is a CAD interface module to Firehouse® records management and a "rip and run" printer at each fire station.

Operational Practices

Position Descriptions

The Center has position descriptions for the following classifications.

- Dispatch Supervisor
- Assistant Dispatch Supervisor
- Fire/EMS Training Officer
- Fire/EMS Lead Dispatcher
- Fire/EMS Dispatcher

Position descriptions are in the same format with varying requirements and sub-categories based on position demands. The categories common to all position descriptions include definition and statement of duties, essential functions, and applicable knowledge, skills, and abilities.

The following minimum certifications are required for WestCom employees.

- APCO EMD
- CPR
- EMD Certified Instructor (Training Officer)
- Public Safety Telecommunicator Instructor (Training Officer)
- NIMS 100, 200, 700

Hiring Practices

WestCom utilizes the City of Westlake application form. The form indicates, however, in large block letters that the application is for the Westshore Central Dispatch Center. An addendum form requires the applicant's consent to a background investigation. The successful applicant receives a physical exam, hearing test, drug testing, and a background check. There is no skill testing specific to dispatch functions. Once hired, new employees serve a 24-month probationary period.

The retention rate for WestCom in 2007 and 2008 was lower than the national average but higher when compared to that of other dispatch centers in the area. Discussions with staff indicate skills levels of new employees may be one of the reasons for turnover.

Recommendation 69: WestCom - Initiate a skills testing program during the hiring process that measures/quantifies processes required for a dispatcher in a multi-agency environment. An example is the CritiCall® testing program software.

Evaluations

WestCom utilizes the City of Westlake Performance Evaluation form. Performance reviews occur at least annually. There are five rating standards ranging from Superior to Unsatisfactory with definitions for each standard. The evaluations contain the following rating categories.

- Adaptability
- Reasoning
- Attendance
- Work Habits
- Cooperation
- Initiative
- Creativity
- Communications
- Dependability
- Supervisory Ability
- Job Knowledge
- Setting Goals/Establishing Priorities
- Quality of Work
- Other

The evaluation process also includes a required self-evaluation form allowing an employee to include information regarding strong work areas and areas requiring assistance. The self-evaluation requires mutual established goals between the employee and supervisor.

WestCom employees receive evaluations from the supervisor and assistant supervisor. The Mayor of Westlake evaluates the WestCom supervisor.

Training – New Hire

WestCom utilizes the APCO (Association of Public Communications Officials) Communications Training Officer Program. The Training Program is approximately eight weeks in duration, with the Trainee on the console with a CTO (Communications Training Officer) starting at four weeks. WestCom utilizes the following documents in the Training Program:

- Certification/Exam Tracking Sheets
- Training Lesson Plan
- DORs (Daily Observation Reports)
- Trainee Evaluations and Guidelines
- Trainee Tracking Sheet
- CTO Checklist for Task/Competency Explained by Coach and Demonstrated by Trainee

Two of the employees at WestCom have APCO Training Officer certification for coaching.

Training – On-going/Continuing Education

WestCom requires 24 hours of in-house continuing education annually. Continuing education is available outside of WestCom.

Recommendation 70: WestCom - Adopt the annual training requirement in written format as a Standard Operating Policy.

Medical Dispatch Program

WestCom uses the APCO Emergency Medical Dispatch Program. Quality assurance (QA) is through an informal program developed in-house. Formal adoption of the APCO program and publication of the quality assurance performance and review standards is not available.

Quality Assurance

Quality assurance (QA) is accomplished through an informal program developed in-house. The QA program entitled Run Reviews is used for fire and medical calls. The process is not part of

the APCO Quality Assurance review system but was developed in-house. Formalization of the program has not occurred in an SOP with applicable performance standards.

Recommendation 71: WestCom - Detail performance standards and medical dispatch processes required by the APCO program. Formalize this in an Emergency Medical Dispatch SOP, identifying the name of the program used, and an outline of the quality assurance program with performance and processes.

Standard Operating Policies/Procedures

WestCom operates using the City of Westlake policies. These policies deal mainly with human resource/personnel issues. The City of Westlake Ordinance 2005-132 gives the WestCom supervisor the authority to develop, alter, and promulgate rules, regulations, policies, and procedures with respect to governance of the center.

A format for standard operating procedures was developed for WestCom. The format includes purpose, numbering system, issue, revision, and destruction date categories. At this time, however, most of the WestCom policies and procedures are still in memo format and have not been formalized.

Procedures may reflect a standard or principle for an agency. Normally this type of procedure contains a policy statement first, followed by the procedure. As an example, a statement indicating it is the policy of WestCom to meet or exceed call taking and dispatch standards published in *NFPA 1221* for communications centers. Following this policy statement is the actual standard and the processes or procedures to attain the standard.

At the time of the center survey, WestCom had one procedure developed. A lack of developed and formally adopted policies and/or procedures for an emergency dispatch center is a risk management issue leaving greater exposure to litigation. Well-developed, sufficient, and updated policies and procedures are one of the first areas scrutinized by a plaintiff attorney for system integrity. Policies and procedures are the backbone of an emergency dispatch center providing direction, continuity, consistency, accountability, and risk management.

Recommendation 72: WestCom - Determine whether policy statements are beneficial to the administration and operating requirements of the center.

- Develop a list of required procedures from all memos, training materials, and existing informal performance standards.
- Develop a process for contract agency (fire department) review and input in applicable SOPs.
- Add policy statements to the procedures if applicable.
- Complete procedure drafts.
- Review, refine, and finalized for adoption.
- Create distribution process (paper and/or electronic) providing formal documentation of receipt by each employee and user agency.
- Develop an SOP Master file.

Performance Standards

WestCom has in memo format a performance standard of 40 seconds for call taking and 39 seconds for call set up and entry. Total time Performance Standard requirement from call taking to dispatch or initial notification is no longer than 70 seconds. Call ring time is not included in the performance standard.

The performance standard is silent on the percentage level requirement, (e.g., WestCom performance standard for call taking to dispatch is 70 seconds 95 percent of the time). There is no formalization of this performance requirement in an SOP.

The existing informal performance standard for call receipt to initial dispatch notification does not match the *NFPA 1221* standard for communications (alarm) centers. It also does not designate a percentage level of expected performance, e.g., 95 percent of the time. The Positron MIS package requires software re-configuration for the interface to the CAD system to allow for capture of total time, including time for call setup to send for dispatch/initial notification. This provides total time measurement as outlined in *NFPA 1221*.

Typically, a regional fire dispatch center has a performance standard for call answering on 9-1-1 lines (e.g., call answer within 15 seconds 95 percent of the time) and separate standards for call set up to dispatch for emergency calls and lower priority calls. An MIS (management information system) interface to CAD also allows the ability to define or separate out emergency (Priority 1) versus non-emergency calls for service based on CAD call entry type.

The MIS package interface to the Positron telephone and CAD currently captures call answer time and talk time but is not programmed to capture call set-up to dispatch time in CAD.

As noted in the following figure, WestCom provided information for 9-1-1 Call Talk Time for January through December 2008. The report indicates 63.92 percent of call duration is 60 seconds or less. Due to the parameters set in the Positron MIS module, the actual percentage of calls meeting the 40-second talk time standard set by WestCom is not available.

Figure 124: WestCom 9-1-1 Talk time – 2008

Talk Time Range	Number of Calls	Percentage
0	1	0.02
0.001 – 30.000	691	11.53
30.001 – 60.000	3,831	63.92
60.0001 – 180.000	1,470	24.53
180.001 – 300.000	0	0.00
300.001 +	0	0.00

Although not a Performance Standard for WestCom, the Positron MIS records indicate ring time to answer time for 9-1-1 calls is 0 to 10 seconds 95.08 percent of the time.

Without the call set-up to initial dispatch notification, WestCom is unable to determine if the Center meets *NFPA 1221* standards for alarm processing time.

The data providing 6,140 9-1-1 calls for 2008 in a preceding Table (Figure 122) is greater than calls captured for total 9-1-1 calls (5,993 in 2008). WestCom believes the difference of 147 calls reflects those calls received but not requiring dispatch.

Recommendation 73: WestCom - Develop a performance standard meeting NFPA 1221 standards including call answer time, call set-up to initial dispatch notification. Formalize in a SOP format.

As a regional fire communications center, consider the following minimum performance standards for development and adoption in a SOP:

- Performance standard for answering of seven-digit (non-emergency) telephone lines.
- Performance standard on service inquiries (investigations), including turnaround time for response to requests.
- Performance standard for compliance with emergency medical dispatch protocol compliance rate.
- Performance standard for number/percentage of QA (quality assurance) case reviews.
- Performance standard requiring distribution of an agency report on a recurring basis (e.g., monthly/quarterly) indicating statistics for user agencies: total calls and dispatch activity, and benchmarking of adopted performance standards.

Facilities and Technologies

Facility

The St. John Westshore Hospital houses WestCom on the first floor with a 20-year lease for $1.00 per year. The hospital provides all heating, cooling, electricity, and water at no charge to WestCom. The hospital also provides all back-up power to the center. The center utilizes smaller UPS systems for most equipment. Critical systems interface with the hospital's larger UPS system.

The portion of the hospital occupied by WestCom was constructed in 2003. The facility is of brick/masonry construction. The facility rating per *NFPA 1221* is not known, but the back-up support infrastructure and building construction indicate it was rated (when built) as an essential services facility. This, however, is not confirmed. WestCom occupies a total of 1,588 square feet and includes the dispatch area, kitchen, two data rooms, and an administrator's office.

Security is provided to all areas with electronic key cards. Closed-Caption TV video monitors in the center allow monitoring of building entrance and drive areas. Most of the equipment supporting the center is approximately four years old or less.

Radio Consoles/Workstations

The dispatch center contains five console workstations, of which three are generally in full-time use. The workstation furniture is ergonomically designed with sit/stand capabilities. All positions are redundant with CAD entry, status, resource screens, telephone, and Zetron radio control. Each position also has a Zetron tone encoder; but it is not interfaced to CAD, allowing automatic tone/paging. Separate PCs allow access to internet/email and the county mapping system.

Reportedly, the county mapping application is very slow and data is not always correct. CECOMS indicates a potential upgrade may improve the situation. Access to the mapping system is through the internet as the software and server is at CECOMS. When a wireless caller is moving, this requires WestCom to call CECOMS to ask for a re-bid of the wireless caller's location. There is high potential the internet line connection at WestCom does not have enough bandwidth to adequately support a fast download due to the volume of mapping data.

The mapping application is ineffective due to incorrect data and the slow internet-based application. It appears there is an issue on the side of CECOMS, as well as the connection speed of the WestCom internet line. Aside from the CECOM issue, a public safety mapping application running through an internet-based program requires broadband capabilities to provide speed and data management requirements.

Recommendation 74: WestCom - Investigate the addition of a broadband line for all internet applications and connections within the center.

Telephones

The telephone system is a Windows-based AT&T/Positron system with PBX Option. The 9-1-1 telephone is through the Positron Lifeline 100; all 9-1-1 and seven-digit lines display on the screen. There are a total of five incoming 9-1-1 trunk lines and all of the published user agency seven-digit fire lines. Additional lines are available for rollover of calls if lines are busy. Each position has a non-emergency administrative line. Recording occurs on all lines.

Computer Aided Dispatch (CAD)

The CAD is Positron with integrated Power 9-1-1, MIS (Management Information) modules. The CAD has an entry screen, status screen, and a screen for all resources and apparatus dispatched by WestCom.

Recording

The center's recording system is a Digital Instruments Reliant 24 Channel recorder.

There is expansion room for two additional console/workstations, for a total of seven console/workstation positions. Both data rooms have expansion capability.

Radio System

The radio frequencies utilized by WestCom user agencies are mainly VHF. North Ridgeville utilizes the UHF 423 series for repeater RX and TX (receive and transmit) and a non-repeated UHF channel as a talk-around channel. See the report appendix for frequency assignment.

Technology Interfaces

- MIS Module for telephone line reports and CAD reports
- E-9-1-1 to CAD

Back-up Operations

Back-up telephone and dispatch services are available at Eastcom, a regionalized center located in Cleveland Heights. Both centers have back-up reciprocal agreements in place.

Long-Range Plans

WestCom is awaiting a decision from FEMA regarding the status of an Assistance to Firefighters Grant (AFG) for $199,000. If approved, grant monies will add terminal data units to all apparatus within the WestCom umbrella and provide for additional cameras on the units and fire stations. Further use of the AFG Grant includes moving forward on a plan for GIS and GPS solutions.

WestCom is also considering a relocation of radio equipment from a North Olmsted tower site to a new location. The potential relocation concerns a contract issue over use of the tower.

General Observation

As a regional fire dispatch service provider, WestCom is still in its infancy and staff is working very hard on developing the required infrastructure.

WestCom is providing emergency medical dispatch instructions through the APCO program with informal quality assurance reviews. It is also finalizing a new employee training program patterned after APCO standards. Both of these deserve recognition, as they require a great deal of effort and time commitment.

Kudos 4: WestCom is providing EMD (emergency medical dispatch) instructions through the APCO program.
Kudos 5: WestCom is in the process of finalizing a new employee training program. Delivering instruction, education, and training to newly hired employees is considered an expedient use of time, funds, and effort.

While there are many positives to WestCom, the professional bar must be raised in all aspects of service delivery to user agencies. This would include, at a minimum, formalized active participation by agency fire chiefs, development of SOPs and performance standards, a formalized medical quality assurance procedure, and regular operational reports for user agencies.

Based on the current and future infrastructure requirements of WestCom, ESCI provides a (strong) recommendation for consideration of adding an IT (Information Technology) person to

provide maintenance and development for infrastructure technologies. Staff recognizes this is a weak area in WestCom operations, as they do not have training in providing technological support. Westlake is providing some IT support, but it is on a 'gratis' basis and not dedicated to the center.

Existing budgetary items (rip and run Records Management System) and plans for MDCs will require significant IT support. As fire departments increase use of an RMS system capabilities and eventually MDCs, IT support for the center and end users will be critical. IT support is optimum by an in-house employee, but it can be contracted on a per hour basis. Either way, the center requires dedicated technical support. Previous audits on consolidated/regional centers indicate a lack of technical support for optimizing and maintaining system technologies ultimately carries negative impacts on the agency and user fire departments.

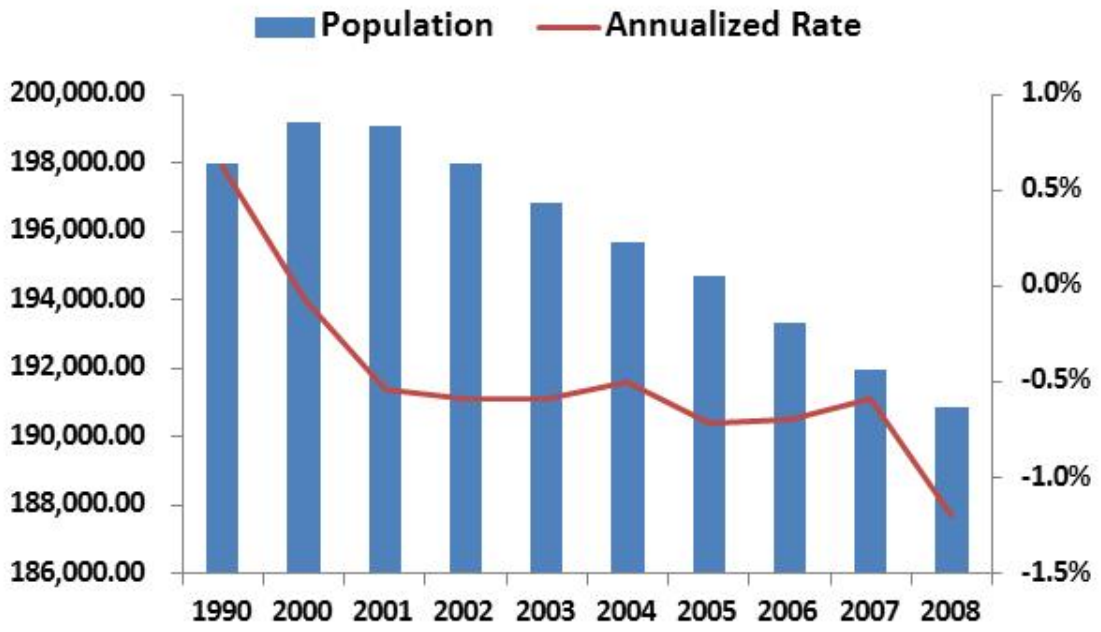
Recommendation 75: WestCom should consider adding an IT person to provide maintenance and development for infrastructure technologies.

Analysis of Future Needs

Current Population Information

While current population estimates and square miles per fire agency have been detailed previously, this section examines the population and demographics as a region. The population estimate for the region is 190,840 persons according to the U.S. Census Bureau.[63] This is a decrease from the official decennial census that measured 199,211 persons, a 4.2 percent reduction. The region did grow from 197,972 persons in 1990 until 2000 before retreating in population levels during this decade. The following figure details the population change since 1990. It shows a slight increase in the first decade, followed by a series of annual population declines that appears to be slowing of late.

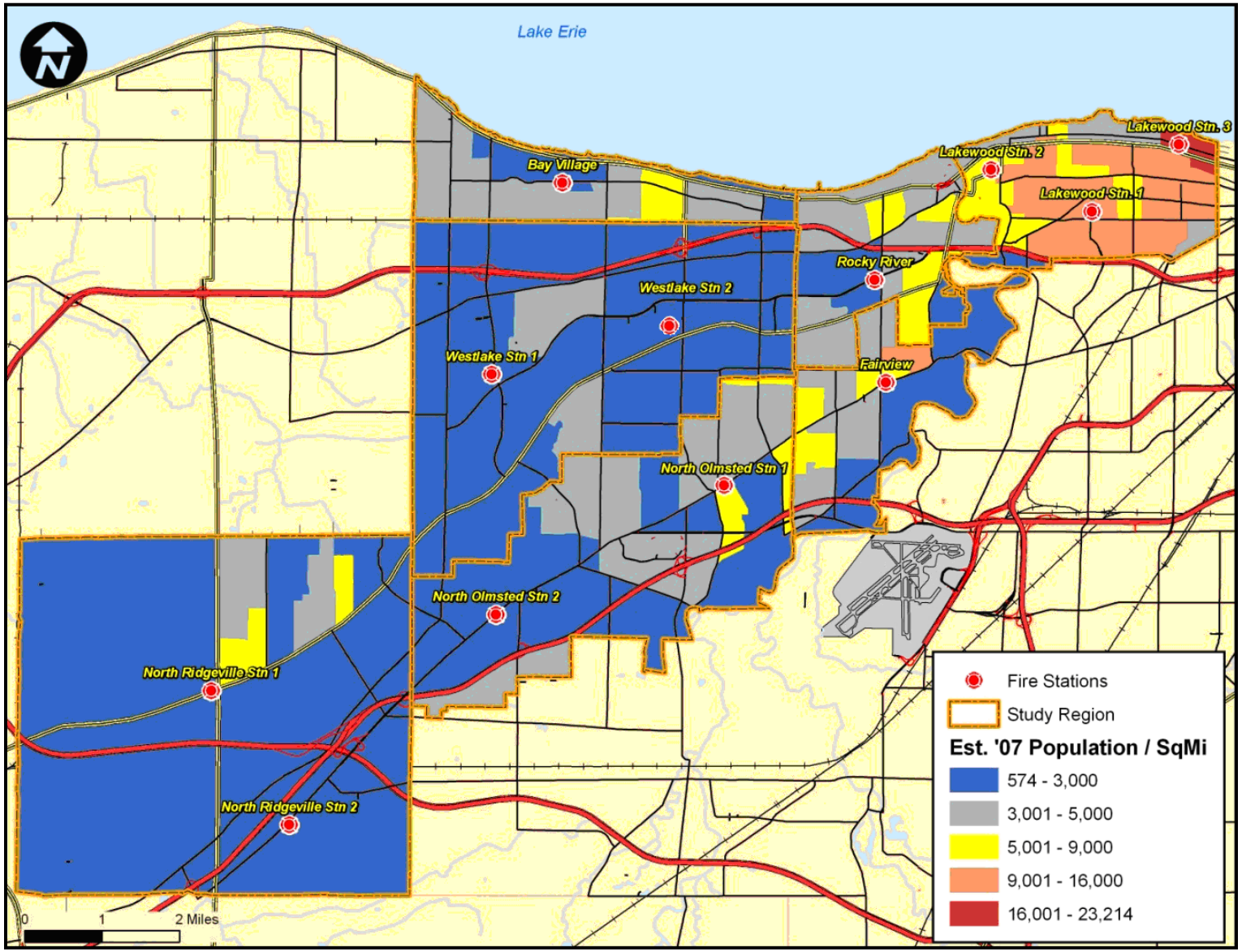
Figure 125: Regional Population Growth History



It is also useful to assess the distribution of the population within the region, since there is a direct correlation between population density and service demand. The following map displays the population density of the region based on estimated 2007 population per square mile within census block groups.

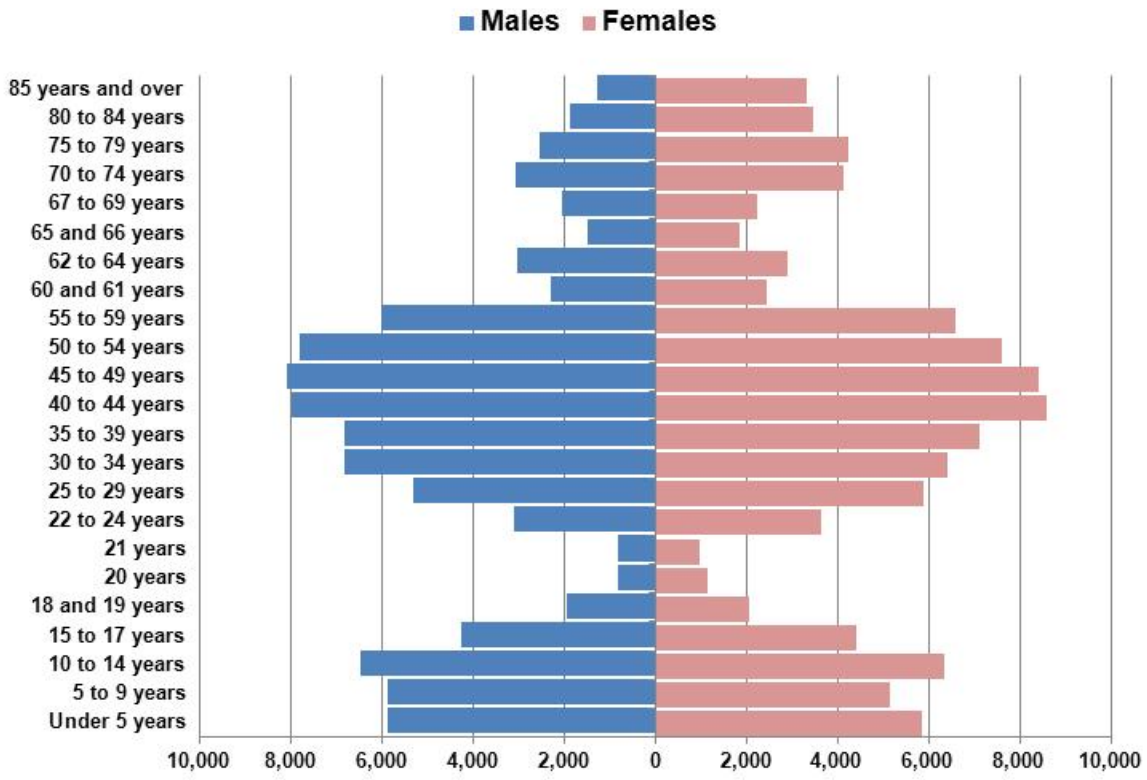
[63] Population estimate for 2007 is from the U.S. Census Bureau.

Figure 126: Regional Population Density



Higher concentrations of population are found within the cities of Lakewood, Rocky River, and Fairview Park, as expected since they are the closest to the City of Cleveland. As one of the factors that influences emergency service demand, population and its composition with regard to age and socioeconomic characteristics were examined. The following chart shows the region's estimated population segmented by age groups.[64]

Figure 127: Regional Estimated Population by Age



A total of 16 percent of the population is 65 years of age or older and 6 percent of the population is under five years of age, placing a total of 22 percent of the area's population in the significant target age groups that pose the highest risk in residential fire incidents. Although the bulk of the population is aged less than 64 years of age, the rate of growth over the decade in the age 50 and older categories presents unique challenges to the fire service. As this cohort group ages, they enter an age prone to medical incidents, which can be expected to create a significant increase in service demand for emergency medical incidents as the over age 65 cohort increases in percentage of overall population.

[64] The U.S. Census Bureau ACS only had estimated population composition by certain municipalities with populations over 60,000, Decennial data was used otherwise.

In 2000, the U.S. Census Bureau estimated daytime populations for select areas within the country. This is important for emergency services to gauge the increase in service demand that can be expected from daytime population levels. As illustrated in the following table, all the communities within the study have an exodus population not unexpected when neighboring a major metropolitan city such as Cleveland.

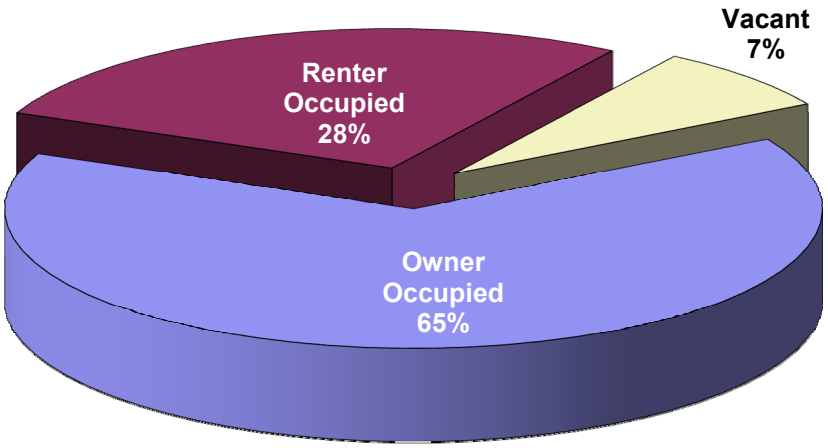
Figure 128: Daytime Population Estimates

City	2000 Residents	Total Workers in City	Total Workers Living in City	Estimated Daytime Population	Daytime Population Change Commuters		Workers Living & Working in City	
					No.	%	No.	%
Bay Village	16,087	2,799	8,045	10,841	-5,246	-32.6	1,311	16.3
Fairview Park	17,572	8,050	8,833	16,789	-783	-4.5	1,144	13.0
Lakewood	56,646	15,693	31,564	40,775	-15,871	-28.0	5,709	18.1
North Olmsted	34,113	14,201	17,661	30,653	-3,460	-10.1	3,506	19.9
North Ridgeville	22,338	6,289	12,255	16,372	-5,966	-26.7	1,613	13.2
Rocky River	20,735	9,366	9,742	20,359	-376	-1.8	1,874	19.2
Westlake	31,719	21,299	15,559	37,459	5,740	18.1	3,456	22.2

It should be noted that this daytime population estimate is based on employment data and does not consider traffic volumes, shoppers, and other visitors to the area.

The composition of housing is one indicator to levels of service demand. Areas with higher vacancies and rental property (outside of seasonal resort and higher educational institutional areas) correlate with higher demands upon the fire department. The following chart details the overall housing occupancy for the region from the U.S. Census Bureau.

Figure 129: Regional Housing by Occupancy



The breakdown of occupancy in the region indicates a reasonable rental and vacancy rate that reflects a positive socioeconomic indicator and correlates with an expected stable service demand for emergency services. In order to develop service demand projections, growth in terms of population based upon census and development are examined.

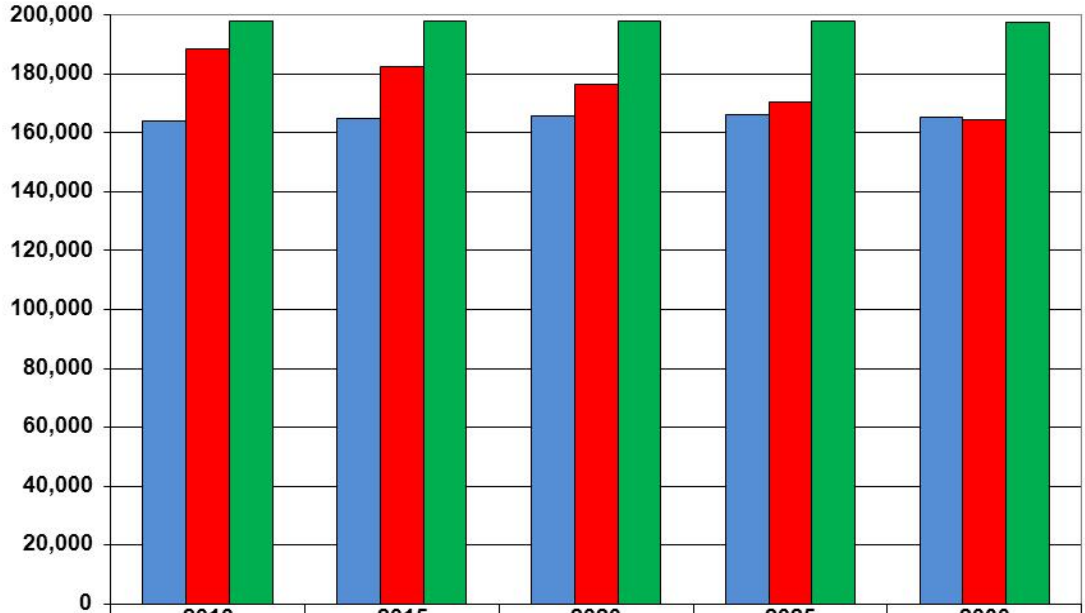
Census-Based Growth Projections

As indicated earlier in this section, the population of the region studied has decreased modestly in the last decade. Because of the built-out nature of most of the communities involved in this study, it is anticipated that additional population loss will be experienced into the future. In developing forecasts for population growth, ESCI typically develops a forecast based on several decades of census experience. Using census figures from 2000 through 2008, a mathematical forecast is created through the year 2030.

While census-based population projections provide a mathematically-based estimate of future population based on historical data, they often fail to account for expected trends in the growth rate of an area. These changes often result from redevelopment, annexation, changes in employment capacity, or other socio-economic factors not reviewed in a census-based projection. For this reason, ESCI also offers population projections based on review of available local development and business information.

In this case, ESCI reviewed information available from the Northeastern Ohio Area Planning Association (NOAPA). While some municipalities offered the review of comprehensive planning documents, these were incomplete for the study area, had differing dates of adoption, and contained altering methodologies for population projections. Some utilized the NOAPA projections and for consistency and completeness, these figures are utilized here. The NOAPA figures are from a report published in June 2005. In addition, a more recent request for updated projections was given by Traffic Analysis Zone (TAZ) for each study municipality. The resulting population forecast appears as follows.

Figure 130: Population Forecasts



	2010	2015	2020	2025	2030
NOAPA-taz	164,162	164,880	165,631	165,984	165,285
Census-Based	188,552	182,560	176,568	170,573	164,580
NOAPA	197,865	197,927	197,989	197,795	197,601

The NOAPA-TAZ projections appear most optimistic with a slight increase over the 20-year period, while the 2005 projections and ESCI's census–based method show a continued decrease in study area population. It is not the intent of this study to be a definitive authority for the projection of future population in the service area but rather to base our recommendations for future fire protection needs on a reasonable association with projected service demand. Since we know that the service demand for emergency agencies is based almost entirely on

human activity, it is important to have a population-based projection of the future size of the study area.

Development Considerations

The following considerations are based upon interviews with planning officials within each community.

Bay Village Fire Department

The City of Bay Village is primarily residential and is a mostly built-out community. Limited building heights (35 feet), a possible development of age-restricted condominiums, a redeveloped shopping area, and a nursing home expansion is the extent of the expected development.

Fairview Park Fire Department

The built out nature of the city prohibits large scale development that would increase population significantly, although planning officials expressed that some evidence of younger family population growth may spur overall growth in redevelopment. Planned development near the Lorain Road corridor includes a mixed use of high density housing, office, and retail space.

Lakewood Fire Department

The current comprehensive plan is from 1993, lending to some out-dated aspirations for certain areas within the city. Redevelopment along Detroit Avenue to upgrade existing commercial ventures is on-going. The city's Rockport Redevelopment Overlay hopes to foster a mixed use lifestyle within this area.

North Olmsted Fire Department

An increased interest by developers for senior-aged housing in North Olmsted may bring higher medical requests for the fire department. There are some approved developments that need to finish out, but the numbers are not significant. Otherwise, redevelopment is on-going.

North Ridgeville Fire Department

Because of the availability of developable land, North Ridgeville is anticipating significant growth. Over 3,400 units have been constructed since 1995 and an additional 3,782 are expected upon full completion of approved building projects. A dramatic increase in commercial and industrial development is also expected due to the existence of interstate highways and their interchanges within the city.

Rocky River Fire Department

Rocky River has plans for redevelopment in several small areas about the city but does not expect a significant increase in population.

Westlake Fire Department

Planning officials expect that most of the future growth will be within the northwest part of the city. New construction and redevelopment of existing single family housing into condominiums with some age restricted development will occur.

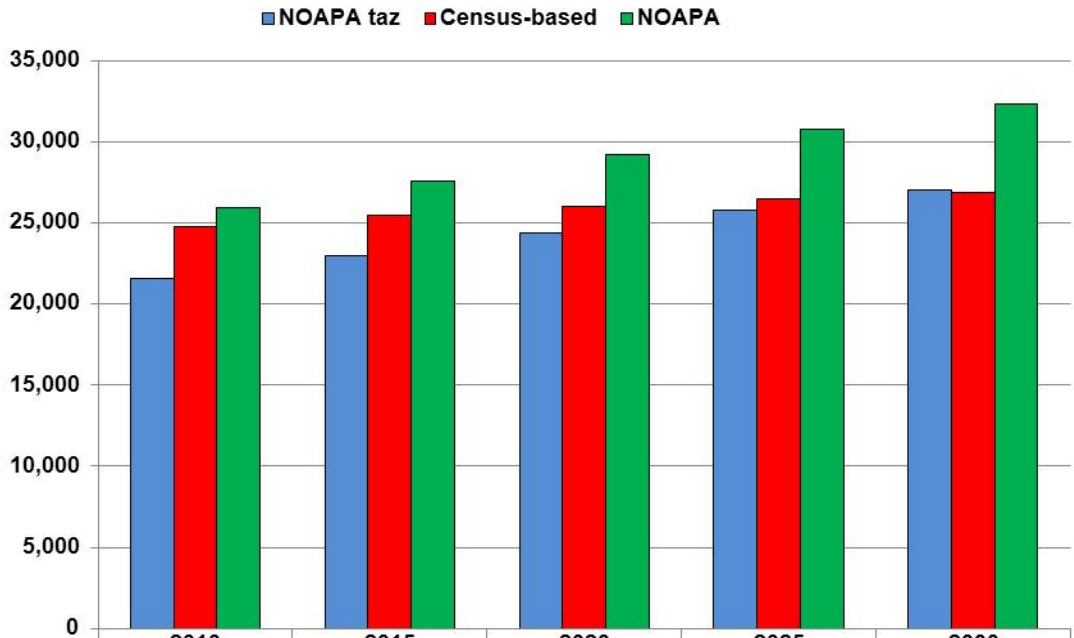
When supplied, the individual city comprehensive plans point to declining population levels and redevelopment into commercial/office areas as the need for owner-occupied housing continues to dwindle. It should be noted that the suburban sprawl outside the study area has been spurred, in part, by the availability of fuel for daily commuters. World events and supply may alter these factors, requiring a return to centralized population centers. Currently, among younger demographic cohorts, urban living is currently attractive and may become a lasting lifestyle within the Cleveland area.

Service Demand Projections

In evaluating the deployment of facilities, resources, and staffing, it is imperative that consideration be given to potential changes in workload that could directly affect such deployment. Any changes in service demand can require changes and adjustments in the deployment of staff and resources in order to maintain acceptable levels of performance.

For purposes of this study, ESCI utilized the population projections presented earlier and multiplied these by a forecasted incident rate derived from incident per capita rates to identify workload potential through the year 2030. The results of the analysis are shown in the following chart and table.

Figure 131: Workload Projections



	2010	2015	2020	2025	2030
NOAPA taz	21,546	22,968	24,407	25,795	27,018
Census-based	24,747	25,431	26,018	26,508	26,903
NOAPA	25,969	27,571	29,175	30,739	32,300

The frequency of most call types is projected to remain relatively consistent in relation to population growth. Requests for emergency medical aid are expected to continue to rise due to an increasing number of older adults.

Community Risk Analysis

The fire service assesses the relative risk of properties based on a number of factors. Properties with high fire and life risk often require greater numbers of personnel and apparatus to effectively mitigate an emergency. Staffing and deployment decisions should be made with consideration of the level of risk within geographic sub-areas of a community.

The community's risk assessment has been developed based on current land use within the fire departments' boundaries. These uses are found in zoning or land use designations. Hard copy zoning/land use maps were provided for most of the municipalities and are reviewed based upon the following criteria.

- Low risk – Areas zoned and used for agricultural purposes, open space, low-density residential, and other low intensity uses.
- Moderate risk – Areas zoned for medium-density single family properties, small commercial and office uses, low-intensity retail sales, and equivalently sized business activities.
- High risk – Higher-intensity business districts, mixed use areas, high-density residential, industrial, warehousing, and large mercantile centers.

Bay Village Fire Department

Being primarily a residential community, generally the risk level is low. Specific zoning/land use information was not provided but reference to the Needed Fire Flow maps presented earlier indicates there are a few properties of higher risk within the community. Usually, these occur on arterial routes through town.

Fairview Park Fire Department

The higher risk properties within this community are found alongside State Route 10, near the interstate exit in the southwest and along 210th Street in the north.

Lakewood Fire Department

Virtually the entire city is in the high risk category based upon the zoning map obtained from the city's website. The amount of high density housing, commercial, and industrial properties dwarfs the number of parks and low-density housing areas.

North Olmsted Fire Department

Similar to its neighbor to the north, Lorain Avenue corridor is the area of higher community risk properties, as are properties near one of the interstate interchanges.

North Ridgeville Fire Department

The areas of highest community risk in North Ridgeville continue along Center Ridge Road. Intersecting interstate routes and the access/egress points provide areas for industrial and commercial development.

Rocky River Fire Department

US Highway 6, Highway 20, and Detroit Road provide the corridors where higher risk properties within Rocky River are located.

Westlake Fire Department

In Westlake, higher risk industrial facilities are located on the north side of the city and the interstate. Highway 254 benefits from two interchanges on which commercial and office buildings are located. Another area of higher risk properties in Westlake is located along the U.S. Highway 20 corridor.

Feasible Delivery System Strategies

A regional fire protection study is intended to provide strategies that are long term in nature. It is the job of a master plan to identify the most critical issues the agencies will face over the long haul, out as much as 20 years in the future. ESCI initiated that process in the previous sections of this report where community growth, identified risks, and forecast service demands were evaluated. In developing a long-term strategy for fire protection services in the Westshore study area, the integrative use of knowledge acquisition, depth of expertise, and geographic modeling tools were employed.

Since the fire departments within the Westshore Study area are career departments in a metropolitan area, some have adopted or strive to adhere to the NFPA 1710 response time guidelines. With that as a guide, the following long term strategies are presented.

Long-Term Strategies for Facilities and Apparatus

The following section addresses the addition, relocation, or elimination of facilities and apparatus based upon a municipal and regional needs perspective.

Facilities

ESCI begins the formulation of facility deployment strategies by reviewing areas where gaps exist in the capability of the system to deliver target level performance. In addition, the analysis examines areas where there is overlap and redundancy in the capability of two or more stations. Resulting deployment strategies are developed in an effort to eliminate service gaps in those areas expected to have high service demand through the relocation of fire stations or reallocation of specific resources, if possible.

Often, any unnecessary redundancy in coverage by fire stations located too close together can also be eliminated. However, not all service redundancies or overlap discovered in the distribution analysis are necessarily undesirable. In areas of high service demand or high risk, the probability of resource-intensive incidents, as well as the rate of concurrent incidents, often increases. In such cases, a higher concentration of apparatus in an area can be desirable.

Most of the overlapping coverage that exists between municipalities is similar to that which occurs between Rocky River and Fairview. However, in Lakewood coverage redundancy exists between all fire stations. ESCI does not recommend the closure of existing fire stations in any of the municipalities because a widening of service gaps in coverage would result.

Service gaps exist in each of the municipalities with the exception of Lakewood. The extent of service demand coverage loss can be compared to overall municipal service demand to determine the need for relocation or the need for additional fire stations. The following table (Figure 132) shows the coverage of service demand from the first-due travel model for each community.

Figure 132: First-Due Apparatus Service Demand Coverage

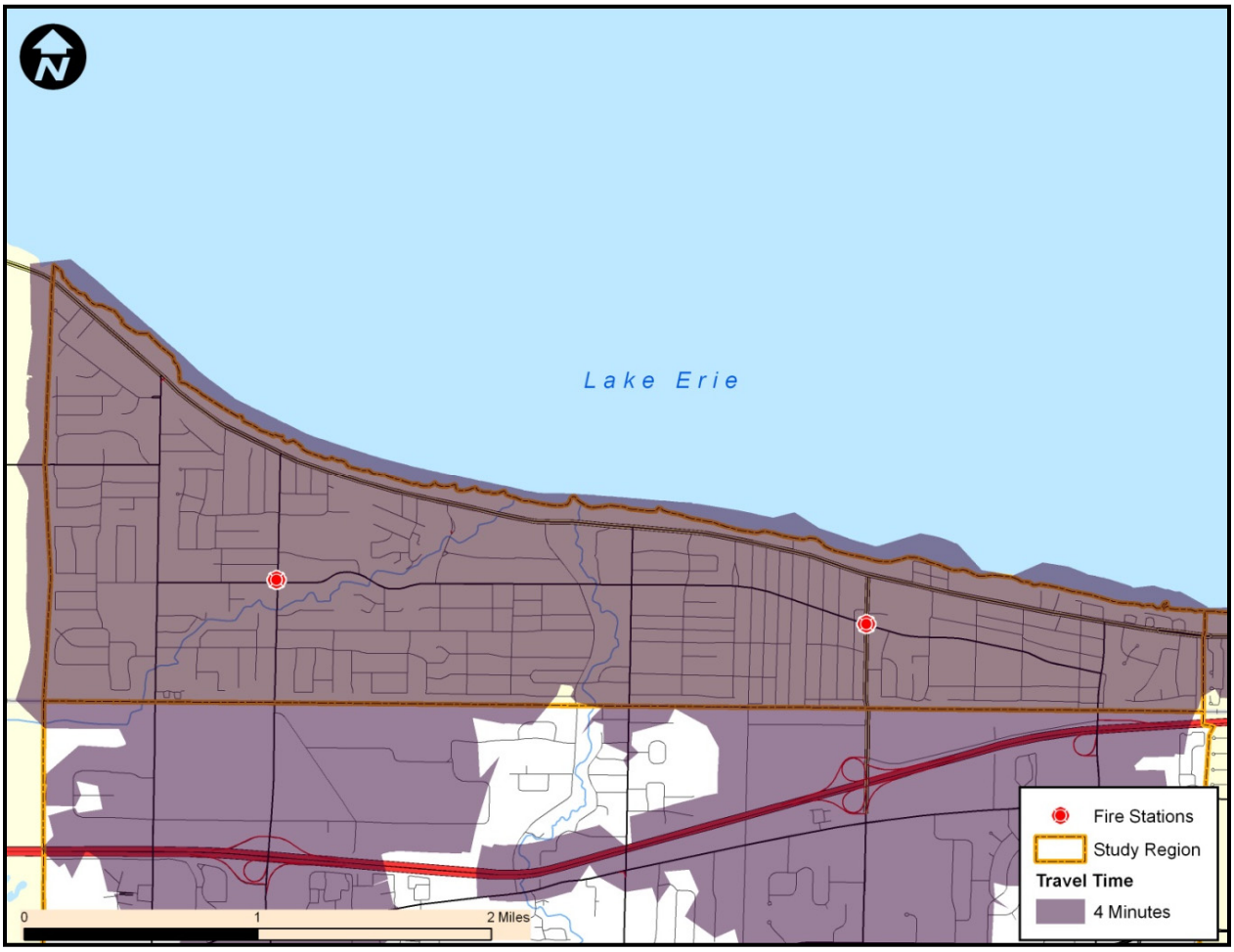
Jurisdiction	Percent of Coverage
Bay Village	71%
Fairview Park	91%
Lakewood	100%
North Olmsted	84%
North Ridgeville	74%
Rocky River	86%
Westlake	82%
Overall	**88%**

The analysis indicates that most municipalities fall below the standard of 90 percent coverage of service demand. This indicates the cities potentially cannot achieve the goal of response time performance as recommended in *NFPA 1710*. Of concern are jurisdictions with higher service demand and correspondingly lower service demand percent coverage, such as North Ridgeville, Rocky River, and Westlake. It is important to note at this point that the overall current service demand coverage in the region is 88 percent, which may be satisfactory given the capital costs of relocation or additional facility construction. Nonetheless, the following subsections identify facility deployment in each of the municipalities to achieve 90 percent service demand coverage.

Bay Village

The centrally located fire station leaves coverage gaps on the extreme east and west sides of the City. To achieve service demand coverage of 90 percent, the current fire station would need to close and two fire stations, one on each side of the village, would need to be constructed. Suggested locations would be near the intersections of Wolf Road and Bassett Street, and the second location near Wolf Road and Columbia Road. The following map (Figure 133) details these locations and the first-due travel time geographic extent.

Figure 133: BVFD Proposed Two-Station Deployment



Virtually 100 percent of Bay Village can be reached in four minutes or less from the two suggested fire station locations.

Rocky River

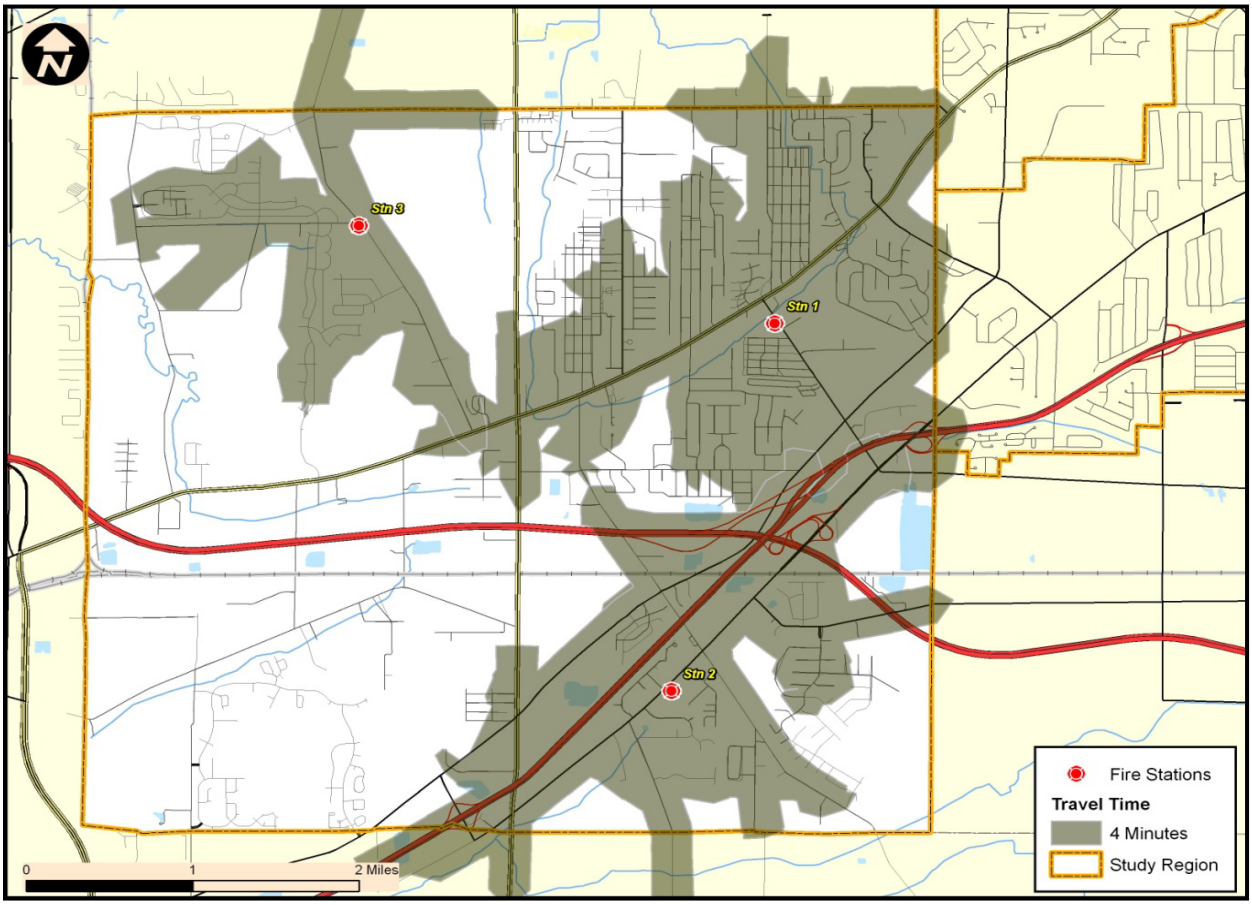
There is a dense cluster of service demand near the border of Bay Village off of Lake Road that cannot currently be reached in the modeled four-minute travel time. Approximately 90 percent of service demand within Rocky River could be reached if the fire station was moved about a quarter of mile north of Hilliard Boulevard on Wager Road.

North Ridgeville

Located at the crossroads of arterial roadways in the center of the city, NRFD's Fire Station No. 1 has the ability to reach far into the city in all directions. The greatest gap in service demand coverage is located in the northeast quadrant. The city has on-going and planned

developments throughout the area. Initial plans for the relocation of Fire Station No. 1 to the northeast quadrant and the construction of a new station in the northwest quadrant are shown in the following map (Figure 134).

Figure 134: NRFD Initial Proposed Fire Station Locations by Municipal Officials

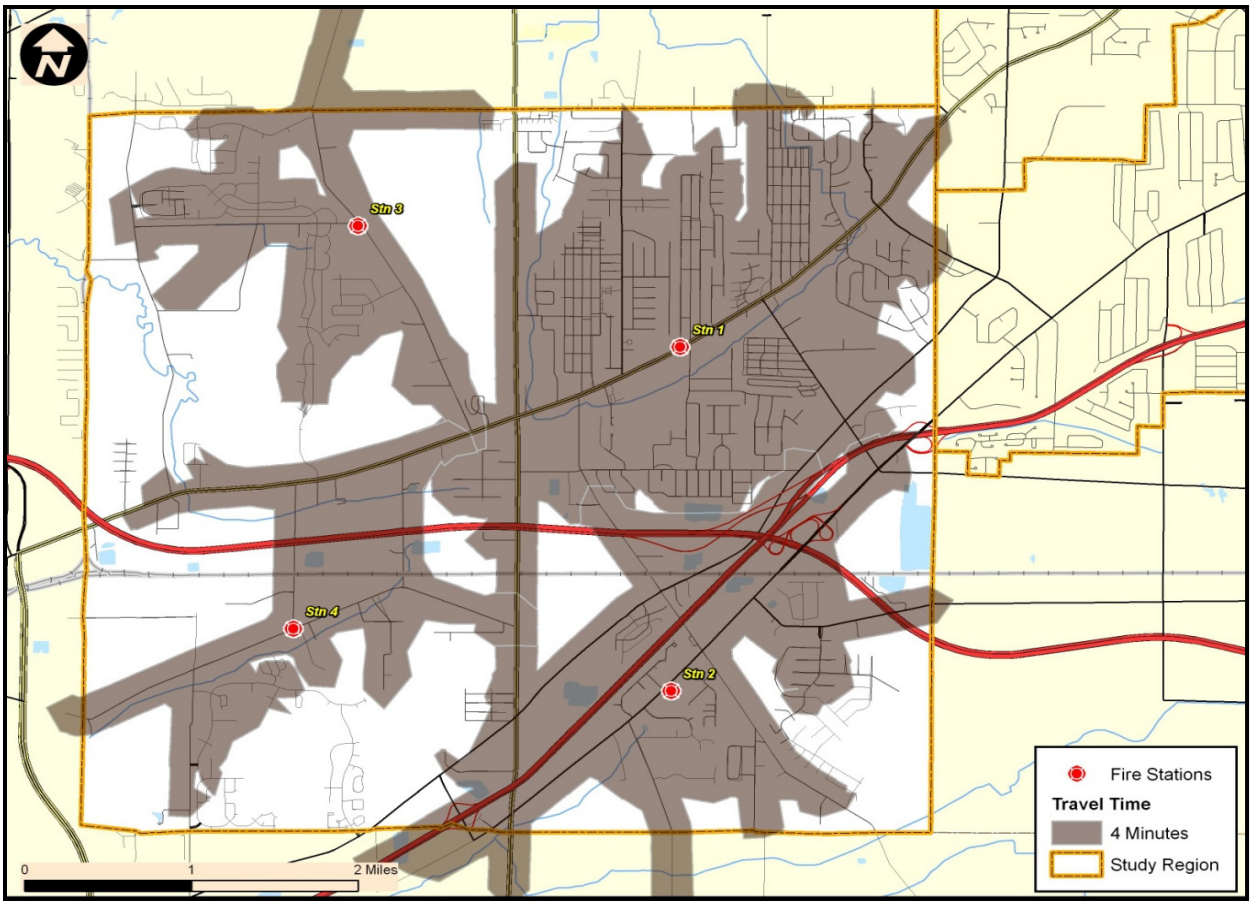


Relocating Fire Station No. 1, NRFD gains coverage in the extreme northeast but trades it for coverage in the north end, western Highway 20, and the center region area. ESCI suggests that Fire Station No. 1 should be located near the intersection of Wallace Street and Highway 20 for a balanced coverage in the northeast quadrant. We concur with the proposed site for Fire Station No. 3.

Because of the significant commercial growth in the western area along Center Ridge Road and residential development in the southwest quadrant, another fire station should be considered. A location in the general vicinity of the intersection of Sugar Ridge Road and Race Road would be an ideal location. The Waterbury Development has limited access; an emergency access road

into this area should be pursued for Shady Lane. The following map (Figure 135) details these locations and the first-due travel time geographic extent.

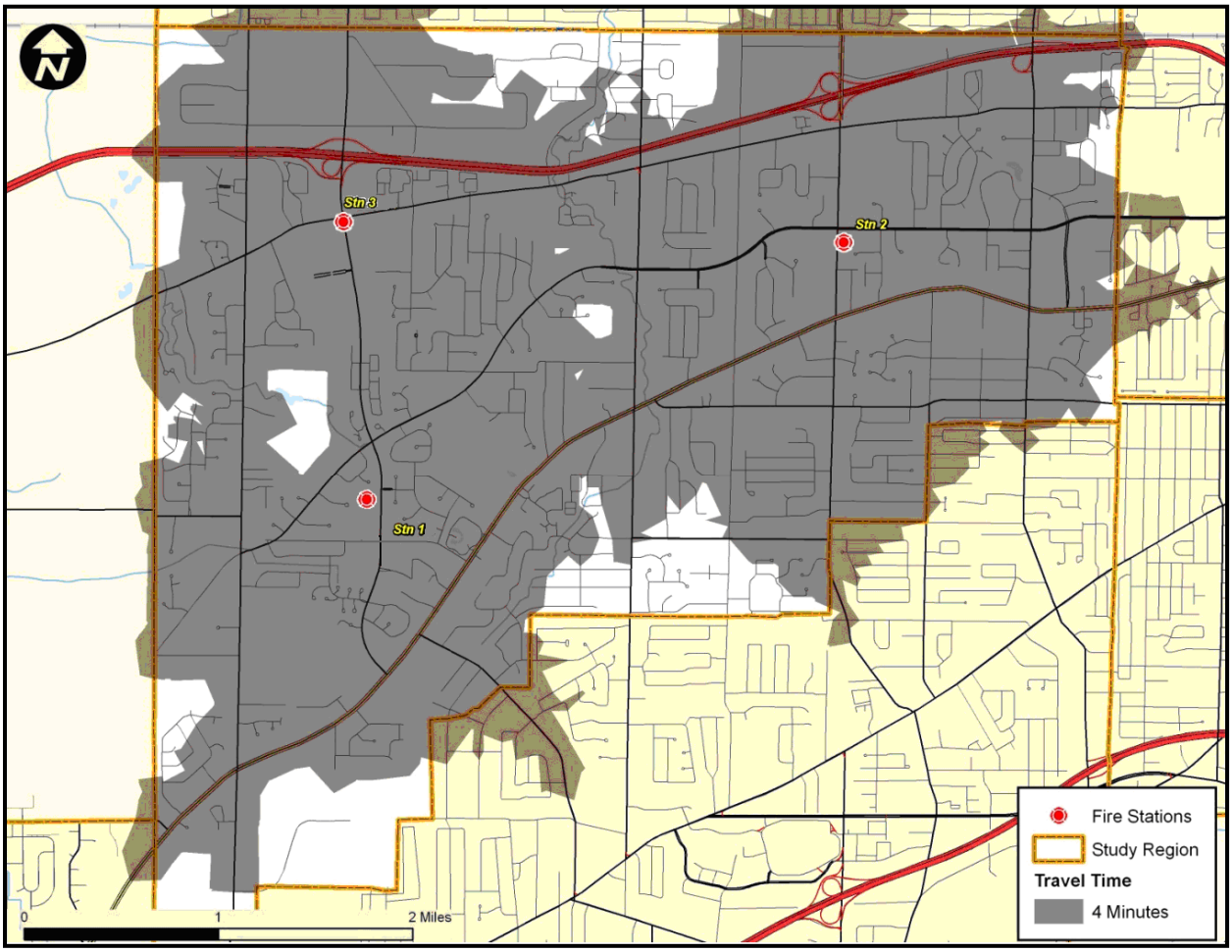
Figure 135: NRFD Proposed Four-Station Deployment



Westlake

The situation in Westlake is similar to the one in Bay Village. A third fire station on the west side of the city to the north of the current facility location would be needed for service demand coverage to exceed 90 percent. The north fire station (Fire Station No. 3) would be best sited at Crocker Road and Detroit Road. The following map (Figure 136) details these locations and the first-due travel time geographic extent.

Figure 136: WFD Proposed Three-Station Deployment



Apparatus

Each added fire station proposed in the preceding section would require, at a minimum, one engine (pumper) and suitable staff. The following table (Figure 137) details the recommended staffed apparatus in each jurisdiction for engines, trucks, and ambulances.

Figure 137: Apparatus and Staffing Plan[65]

Jurisdiction	Engine	Quint	Truck	EMS
Bay Village East		X		X
Bay Village West	X			
Fairview Park		X		X
Lakewood Fire Station No. 1	X		X	XX
Lakewood Fire Station No. 2	X			X
Lakewood Fire Station No. 3	X			X
North Olmsted Fire Station No. 1		X		X
North Olmsted Fire Station No. 2	X			X
North Ridgeville Fire Station No. 1		X		X
North Ridgeville Fire Station No. 2		X		X
North Ridgeville Fire Station No. 3	X			X
North Ridgeville Fire Station No. 4	X			X
Rocky River	X			X
Westlake Fire Station 1A		X		X
Westlake Fire Station 1B	X			X
Westlake Fire Station No. 2	X		X	X

To estimate the cost of adding capital fire pumpers for each fire department, the average replacement cost for each vehicle was used. The basis for vehicle acquistions can be found in Appendix L: Apparatus Replacement Cost Analysis.

Figure 138: Capital Apparatus Cost Estimation for Additional Fire Stations

Fire Department	Additional Cost
Bay Village	575,000
North Ridgeville	575,000
Westlake	575,000
Total	**$1,725,000**

A total of approximately $1.7 million for additional apparatus for the three new fire stations is anticipated. In a scenario where the fire departments combined into a single agency, it is likely that a smaller number of additional fire engines would be needed. This is possible through a reduction in the number of reserved pumpers that would be required for a single jurisdiction.

Bay Village Fire Department

Bay Village's high-rises and larger buildings are located on the east side, hence the need for the quint[66] apparatus. The workload is not high enough to have a dedicated EMS staff, so cross-

[65] Note: Green shaded boxes indicate cross staffed units.

staffing is acceptable in the unit located on the west side where the bulk of the residential development is located.

Fairview Park Fire Department

FPFD receives a much higher number of service requests for medical events than fire calls. Using a quint apparatus for both engine and truck duties is a reasonable utilization of resources.

Lakewood Fire Department

Lakewood, the busiest fire department in this study region, needs to maintain the resources it currently has deployed.

North Olmsted Fire Department

Current service demand is at a reasonable level to allow for cross-staffing between fire and EMS units. Call concurrency has not impacted the fire department's ability to respond to calls using this deployment model.

North Ridgeville Fire Department

NRFD will need to consider dedicated EMS staffed units at Fire Station Nos. 1 and 4 as development and population growth generate additional service demand.

Rocky River Fire Department

No apparatus or staffing changes are recommended for RRFD.

Westlake Fire Department

In Westlake, Fire Station No. 1A would be located near a planned industrial development and a quint apparatus in this fire station would be appropriate. Dedicated EMS staff for ambulances in the more residential areas of Fire Station Nos. 1B and 2 is recommended.

Options for Shared Services

Closest Fire Station Response Area

A previous section of this report considered additional facility, apparatus, and staffing deployment given the workload for each agency within their individual jurisdictions. Some agencies had travel time service demand coverage of the less than optimal 90th percentile

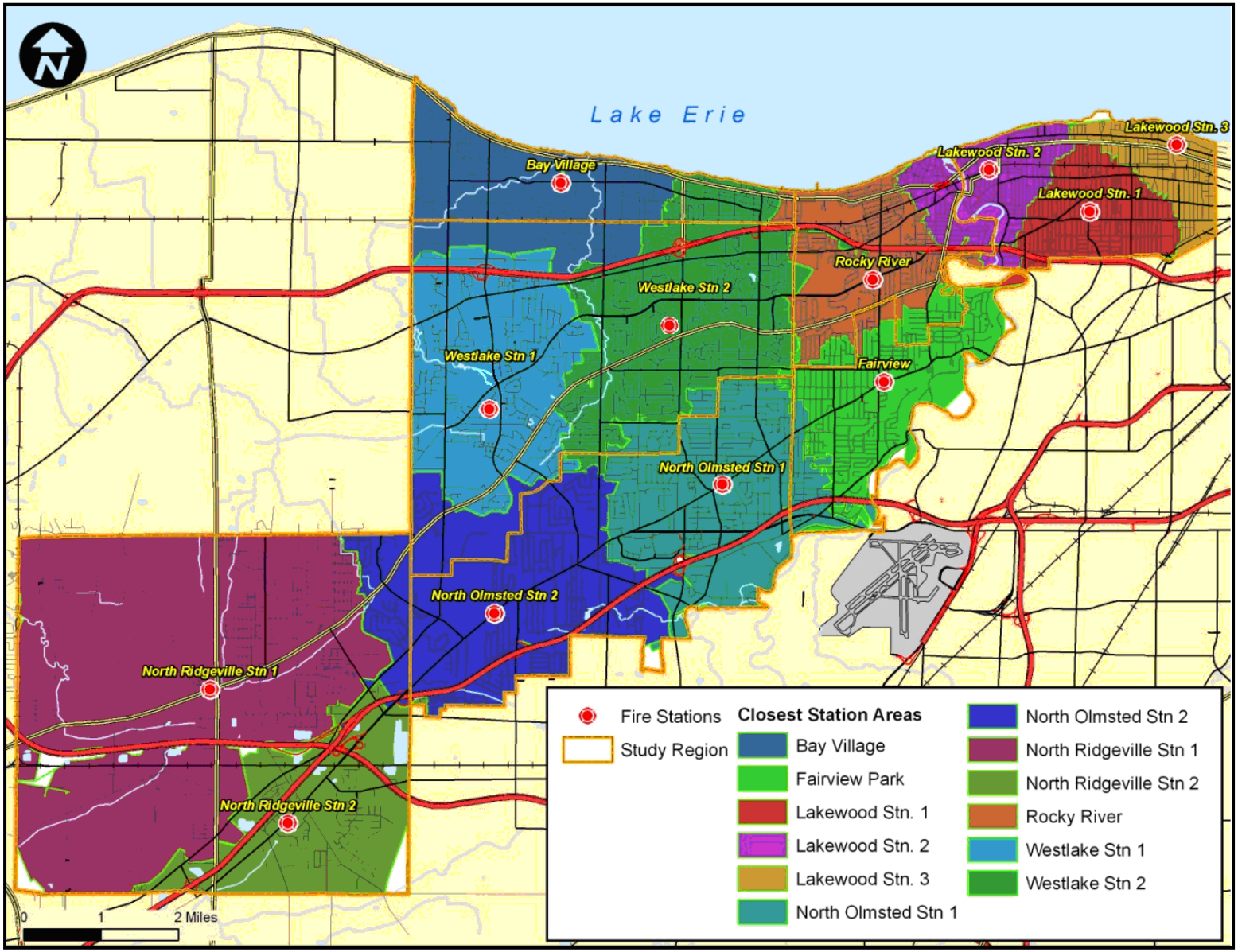
[66] A quint or quintuple combination pumper is a fire service apparatus that serves the dual purpose of an engine and a ladder truck. Quint, meaning five, refers to the five functions that a quint provides: pump, water tank, fire hose, aerial device, and ground ladders.

threshold. Although overall service demand coverage was calculated to be 88 percent, in certain cases individual jurisdictional coverage would require additional resources to individually achieve the 90th percentile coverage.

Because individually capital and operational costs can be prohibitive, an alternative method would be used. ESCI examined what effect a cooperative services arrangement where fire departments are viewed in a geographically regional perspective and the closest fire station is sent to incidents regardless of geo-political boundaries. There is a potential this could not only improve jurisdictional coverage but coverage for the region as a whole. In addition, it is possible that response time could be reduced and the amount of operating time for apparatus and personnel would also realize a reduction in workload and associated costs.

The following figure illustrates the closest station response (CSR) areas. It details the geographic extent of travel from all fire stations as if apparatus left the fire stations simultaneously and “raced” toward each other from every possible direction.

Figure 139: Closest Station Areas – All Departments



Opportunities for Cooperative Efforts

The previous sections surveyed the fire protection and emergency service systems of the Westshore study area's fire departments. ESCI addressed each agency individually, making unilateral and bilateral observations and recommendations based on an analysis of service, personnel, and equipment. This section will investigate the potential for emergency service improvements in the area based on the potential unification of these fire protection and emergency medical services components.

Prioritize relevance over tradition

- What are the effects on the public?
- What are the effects on our employees?
- What are the effects on our organization?
- Depth of available resources versus single agency response.

Partnering Strategies

Four basic strategies are available, beginning with a do-nothing approach and ending with complete unification of the fire departments into what is, essentially, a new emergency service provider. A description of the four methodologies is found below.

Autonomy

The departments can decide to continue as separate organizations by not taking advantage of any further partnering opportunities. Autonomy provides each governing board (council) with the most organizational control because under this strategy the agencies continue to make fire protection decisions considering only unilateral issues. The strategy represents a perpetuation of the status quo. It is useful as a means by which to measure the other strategies.

Functional Consolidation

Public entities usually have broad authority under law to enter interlocal (intergovernmental) service agreements (ILAs) for the purpose of cost and service efficiency. Ohio is no different in this regard. The laws of the State of Ohio address the issue, allowing intergovernmental contracts for any lawfully authorized function, service, or facility.

Under the applicable statutes, governmental entities may elect to cooperate or contract for any lawful purpose. ILAs allow individual organizations to share resources, improve service, and save money at the *program* level. Most commonly, fire departments enter partnering agreements for programs such as firefighter training, fire prevention, closest force response, and administrative/support services.

In many cases, functional unification is sufficient to accomplish the cooperative goals of the agencies without considering operational agreements or mergers. It is common in the industry to functionally join such activities as purchasing, firefighter training, fire prevention, public education, apparatus maintenance, and command standby. The keys to success of a functional unification strategy lie in a trusting relationship between partner agencies, the completeness of the agreement that sets up the program, and a cooperative approach to the management of the program.

In the course of its analysis, ESCI identified and discussed a number of possible regional partnerships. Each of the regional recommendations represents an opportunity for functional unification. Such programs usually carry the advantage of being low-cost and low-risk improvement strategies. Often, the programs serve as a foundation on which agencies build the experience and trust necessary to implement more complete unification strategies. ESCI has listed the more common types of partnering strategies below with a short explanation of each.

Figure 140: Concepts of Functional Program Consolidation

Program	Strategy
Administrative and Support Services	Seamless administrative and support services provided area-wide through an Interlocal Agreement. Operational functions of the fire departments remain separate. Often used as an interim program before implementation of operational and legal unification.
Operating Standards	Common operational standards developed and adopted across the Westshore area. Promotes the efficiency of mutual/automatic aid operations
Closest Force Response	Uniform response of the closest emergency apparatus regardless of jurisdiction. Provides quickest aid to citizens.
Duty Officer	Responsibility for response to structural and incidents requiring multiple units with supervision shared by chief officers on a rotating schedule. Increases efficiencies with current personnel staffing.
Firefighter Training	Regional training program for career personnel. Provides for consistent training of personnel to the Westshore fire departments.
Fire Prevention	A region wide (or larger area) fire prevention program pools all existing resources. Provides uniform message across a wider area.
Specifications and Purchasing	Assures fire apparatus and equipment interoperability and compatibility between the Westshore fire departments. Increases fireground effectiveness and efficiencies.
Joint Fire Stations	Allows for the placement of fire stations in locations based on service demand and risk. Spreads the cost of capital construction projects across a greater base and provides for improved emergency response efficiencies.
Specialty Apparatus and Equipment	Broadens the expense of apparatus and equipment with high cost and lower frequency use across multiple fire departments. Will lower acquisition and operational costs to the communities.
EMS Services	Offers greater marginal use of existing apparatus and personnel. Increases overall efficiencies of an EMS system.

Operational Consolidation

This strategy joins two or more entities, in their entirety, through the execution of an ILA. The resulting fire department features a single organizational structure and chain of command. Depending on the form of the agreement(s) establishing the organization, employees may remain with the original employer, transfer to one of the other employers, or transfer to an entirely new entity (such as a service authority).

The unique feature of an operational consolidation is that existing governing boards are preserved. The management **team** of an operational unified program reports to each political body, usually through a joint oversight board established expressly for the purpose. The political entities prepare and adopt separate budgets and retain responsibility for overall policy and taxation. The unified department is funded by ILA, usually through the melding of individual budgets or by the apportionment of cost in accordance with a predetermined formula.

Like program consolidations, operational consolidations are sometimes considered as an intermediate step leading to a full merger. The main advantage of the strategy offers governing boards the ability to negotiate and monitor desirable outcomes for the management of a particular service. This gives a higher level of comfort in going forward with the decision to unify fire service across a geographical region.

A disadvantage of operational consolidation is inherent administrative inflexibility due to the political complexity of the arrangement. An administrative team, who must answer to two or more political bodies, might become whip sawn by critical issues and limited in an ability to respond to change due to contractual requirements. Consequently, conflicting policy directives may sometimes be troublesome in an operationally consolidated agency.

Much depends on the founding political relationship, the contractual agreement, and the skills of management to assure the success of a long-term functional consolidation. Even so, many ILAs[67] are in effect throughout the nation, successfully centralizing the administrative, support, and operational services of fire departments. A particularly complex (but very successful) one is located in Orange County, California, where the Orange County Fire Protection Authority provides fire and emergency medical services to more than 20 cities and the unincorporated areas of the county. A joint board made up of one elected representative from each municipality and one from the county at large provides governance for the Orange County Fire Authority.

[67] Note: May be called IGA Intergovernmental Agreement or JPA Joint Powers Agreement in other parts of the country.

Legal Unification

Under certain circumstances in law, fire departments can join into a single entity. This formal approach unites not only programs but also fire department organizations themselves. State laws addressing political subdivisions usually detail a process for legal unification.

Typically, state laws draw a distinction between words like *annexation*, *merger*, and *consolidation* when speaking of legal unification. Organizationally, however, the outcome of any such legal process results in one unified agency. The major differences between the legal strategies relate to governance and taxation issues. In many states, some process of *inclusion* exists that essentially involves the annexation of one entity to another, preserving the governing board and taxing authority of the surviving agency. A legal merger, on the other hand, usually entails the complete dissolution of two or more public agencies with the concurrent formation of a single new entity (and board) in place of the former. The key feature of both forms of legal unification (merger and inclusion) is a single tax rate applied to the whole of the resulting jurisdiction. Both processes typically require an affirmative vote of the residents.

Analysis of Partnering Strategies

ESCI usually makes no distinction between unification, consolidation, or merger, tending to use each term interchangeably. The reader should note that when referring to the union of programs or agencies, the operative words are *functional and legal.*

Governing boards should pursue the process of joining two or more fire departments only after concluding that unification is cost-effective and is likely to provide better and/or more efficient service to the public. Each agency's legal counsel should research the particular statutory steps necessary to implement a particular unification strategy. The different processes are not commonly difficult to accomplish, but because the transfer of public assets and liabilities may be involved, the procedure itself can be relatively precise. It is important, therefore, that the agencies have the benefit of competent legal advice throughout the process.

The decision to choose one unification strategy over another is a matter of local policy. Most often, officials choose a preferred course for analytical reasons; however, in certain cases politics or law may rule. For example, many states provide no basis in law for the legal unification of the fire departments of two cities, unless the jurisdictions act to merge the entire city governments. The common recourse in that case is to join the fire departments in accordance with an interlocal service agreement or contract law.

Most states actively support cooperation between governments as a matter of policy in the interest of furthering the economy and efficiencies of local government. Generally, functional and operational strategies are always available as options, whereas the legal unification of fire departments is dependent on circumstance.

Fiscal Analysis

Financial analysis is an important part of the analysis of partnership alternatives. To this end, we develop a computer-driven model budget for each fire department. A modeled budget is designed to impartially represent the monetary policies of each agency equally, to neutralize the normal differences usually found in unilateral fiscal practices, and to account for any financial peculiarities (such as budgetary back loading). The modeling technique assures that an "apples to apples" comparison is made of the agencies, which allows an estimation of the *public cost* of each department's operation and provides a means for financial evaluation of the outcome of integration. The modeled budget yields a baseline estimate of the public cost of service; in addition, the methodology provides the ability to calculate the cost of the partnering strategies.

Creating a Financial Baseline

Each city in this study is unique and has independent methods of budgeting. For this reason it is necessary to create a means of comparison, a baseline. The process to convert the financial records of each agency to a model budget requires certain conventions and assumptions. First, the 2009 annual budgets of the seven fire departments are reformatted. We categorize the line item accounts of each into three major classifications: personnel services, materials and services, and capital outlay. The classifications are further sub-divided to permit the tracking of program cost (such as fringe benefits, maintenance, and grants). All jobs are identified and indexed to compensation paid during the baseline year (2009). Each position is extrapolated to the model budget based on the costs associated with the job (salary and benefits) for a full year and expressed in FTEs (full-time equivalency units).[68]

We identify all non-tax revenues and subtract them from agency expenditures to produce the estimated general operating tax requirements of each jurisdiction. We consider that the resultant sum fairly estimates the amount of public tax support that each agency requires to sustain the current level of fire and emergency medical services, regardless of the source of the

[68] Note: During the course of this project, depressed economic conditions have continued to impact the financial resources available to each of the cities. As a result, the number of fire department personnel often changed from month to month. Accuracy in the number of FTEs was based on the latest data available at the time this report was developed.

jurisdiction's tax revenues. A corresponding modeled property tax rate is generated for the fire departments by applying the calculated general operating requirements of the organization against the assessed value in 2008.

Note that the model tax rate is calculated to permit the *comparison* of the effects of the proposed action only. The model tax rate may not match the actual tax rate of the agency for a number of reasons. For example, any back-loaded program or position will increase the model budget and resultant tax rate because each is calculated on a full year of services. On the other hand, the accumulation of fund balances tends to drive down the modeled tax rate in comparison to the actual rate. We do not intend that the ESCI model budget exactly mimic each agency's current or future budget. Instead, the modeling process provides a stable base by which to measure and compare the effects of the proposed change.

Generally, we use a set of standard conventions when combining the modeled budgets of the individual agencies for analysis. Depending on local situations, we may apply other special protocols to our calculation of the financial impact of restructuring. Regular and special conventions observed in this study are:

- Jobs: To facilitate the analysis, we assume that in combining any or all of the agencies an agreement is reached in which all full-time, dispatch, and part-time positions are preserved but not necessarily converted to exactly the same jobs in the new organization.
- Job Classifications: Differences exist between the job classifications, titles, and structure of the departments. Although we combine the seven departments and carry out financial analysis of a consolidation based on the existing organizations, we note that in the long term the departments may need to restructure their administrative and support sections to better suit the new character of any collaboration or a consolidated department.
- Staffing: The model assumes that the existing staffing total of all fire stations continues with an equivalent number of employed FTE positions. However, in some options, redistribution of personnel and to meet deployment objectives has occurred. Any reduction in the total number of personnel is via the abolition of positions that were authorized but not funded.
- Compensation: Some job classifications within a separate agency may have more than one level of compensation assigned. If we are not able to identify the actual salary that is paid in such cases, we usually weight our compensation estimate to about 90 percent of the high end of the salary scale to allow for a tendency (over time) for a group of workers to reach maximum wage. In this case, for many departments, we were able to use the payroll report to identify existing salaries; consequently, the model makes compensation assumptions that are very close to the actual amounts paid by that

agency. When merging organizations, we assume that the highest salary paid to similar classifications prevails.[69]

- Created Positions: In most circumstances, the salary costs for the jobs of any unified agency are calculated on the highest compensation level of current (or similar) positions. We may assign an assumed compensation to new positions created for the purposes of analysis. Occasionally, some employees or groups are compensated at a rate much higher than comparable positions in the other agencies. In these cases, we usually assume that pay for the higher position is "red circled"; essentially holding the current employee at that level until normal increases in other classifications close the gap. When compensation levels appear to be very much higher than comparable positions, we may assign (what we consider to be) a normally expected rate of compensation to avoid adversely weighting the model.

- Governing Board Expense: Districts usually maintain line item accounts associated with governance expenses (mileage, per diem, reimbursement, elections, insurance, and meetings). Under the option of creating a district, governing body expenses are not factored in to the modeled budget when an alliance is considered.

- Budgetary Line Items: We use the model budget as a template in the process of generating a merged budget for the partnering strategies. Budgetary modifiers are assigned to line items depending on the factors that are likely to change that allocation in a consolidation. Each modifier adjusts the corresponding line item in proportion to the overall impact on the departments. For example, the allocations of certain line items are largely dependent on the number of employees of the department; consequently, a modifier for those line items will adjust the corresponding line items of the merged budget in proportion to the change in the number of employees. The ESCI budget model includes modifiers for career administrative staff, career operational staff, total personnel, stations, offices, engines, medic units, ladder trucks, vehicles, emergencies, assessed value, and population.

- Capital Equipment and Facilities: Financial analysis assumes the existing facilities and apparatus are maintained after any consolidation but may be altered in accordance with the budget modifiers relating to equipment and facilities.

- Revenue: When a partnering strategy involves unification of departments through a merger, consolidation, or a new organization (such as joining two or all agencies), the non-tax revenues of the departments are combined. In some instances, however, agreed-upon terms (contract) dictate how revenue is collected and distributed.

Forecasting Financial Results

The process described above provides a kind of "snapshot" of the fiscal effects of collaborative efforts and a consolidation as if the action takes place during the fiscal 2009 budgetary year. The baseline permits a comparison of the existing fiscal policies of the agencies with the

[69] Specifically, if each agency has the same job classification (e.g., captain) but those positions are paid different salaries, we assume that the compensation of that job in the merged department will be paid at the highest former rate.

budgetary and taxation changes relating to the cooperative model. This methodology yields a comparison of the "what if" of a merger against the baseline of current taxation.

While comparing the cost of emergency service to the outcome of merger in the modeled budget year is helpful, it begs the inevitable question: What might integration cost in the future? If the merger is financially feasible now, might it remain that way in the future or will changes in labor, materials, capital, and demographics change the outcome?

To assist in answering this question, we project the financial result of any proposed consolidation through a ten-year planning horizon. The forecast does not attempt to predict the finances of the departments because changes in law and politics are certain to make such forecasting wrong. Rather, ESCI's analysis shows how trends in the CPI-U[70] (Consumer Price Index), the cost of labor, the assessed value of the cities, and demographics may act on the outcome of a consolidation based on 2009 policy and law. A projection of escalating cost merely shows that the departments may be under increasing financial pressure over time not that tax rates will actually increase. On the other hand, a prediction of declining cost suggests smoother financial sailing for the departments. The assumptions made in forecasting a consolidation are listed below:

- Administrative Staffing: The number of administrative and support jobs are maintained at the ratio now existing. Otherwise, nonspecific staff positions are added to the models as warranted by an increase in the forecast population and a corresponding increase in the number of operational personnel (see discussion of operational staffing below). In this process a merger of the departments would allow for greater specialization of administrative personnel and a cleaner delineation of responsibility.

- Operational Staffing: Firefighting positions are maintained in the consolidated models in accordance with the median of north central fire departments serving similar populations.[71] If the forecast population of the region increases, additional nonspecific operational staff positions could be added to the model as the benchmark exceeds baseline positions. In the case of four of the cities, FEMA (Federal Emergency Management Agency) and NFPA do not report career positions for departments serving a similar population base; consequently, we maintain the existing proportion of career jobs to population at or near current levels.

- Compensation: The costs associated with salaries, overtime, and benefits are assumed to increase by the ten-year average CPI-U compounded each year.

[70] CPI for All Urban Consumers.
[71] FEMA/NFPA, "*Four Years Later—A Second Needs Assessment of the U.S. Fire Service, A Cooperative Study Authorized by U.S. Public Law, 108-767, Title XXXVI, FA-303/October 2006*". The study divides the U.S. into Northeast, North Central, South, and Western regions. Fire departments within each of the four regions are categorized by service area population.

- Budgetary Line Items: All materials, services, and capital budget line items are assumed to increase by the historical ten-year CPI-U for Cleveland-Akron, OH Regional CPI-U each year (2.13 percent) through year 2019. In addition, budget line items are adjusted in accordance with the aforementioned modifiers to account for changes in staffing, stations, offices, vehicles, emergencies, assessed value, and population.

- Capital Lease: Some fire departments have purchased fire apparatus and other capital equipment through a lease purchase agreement. The consolidated budget model and the budget model assume the lease to be fully paid in the current fiscal year or as specified by the leasing contract.

- General Fund Capital Purchase: The purchase of capital equipment from the general fund of the city budgets and the consolidated budget is assumed to continue but compounded by the CPI-U and as adjusted by modification factors.

- Stations and Apparatus: No additional fire stations or apparatus for a consolidated agency would be required.

- Non-tax Revenue: All non-tax revenue of the departments is assumed to increase in accordance with the average change in the CPI-U. Additionally, revenue associated with any new services is modified in accordance with the expected change in the population being served.

- General Obligation Debt: We do not include a calculation of general obligation debt associated with the construction of new fire stations or the purchase/equipping of emergency apparatus in any of the general fund models. Such expenditures usually fall outside of general fund budgeting and must be independently authorized by voters in an election for that purpose.

- Assessed Value: The assessed value (AV) of the cities is assumed to increase in accordance with the trend over the last ten years. In addition, we assume that during the next decade, new construction in the region will equal the trend.

- Population: Population generally increases in relation to the change in new construction. We use the forecast for the cities as stated in this report.

- Legacy Liability: Certain liabilities have been sustained by each city and are assumed for this purpose to remain with where they were incurred. Legacy liabilities may involve pension funds, workers' compensation claims, hazard mitigation, and lawsuits (would include open and pending actions). Going forward, new liabilities would be with any newly created agency or divided among collaborating fire departments as acknowledged in an agreement.

Figure 141 details the combined modeled baseline budget of the seven departments for 2009.

Figure 141: Combined Modeled Budget by Category, Fiscal Year 2009

Personnel Services	
Administrative	$1,955,130
Operational	19,091,816
Overtime	1,595,068
Benefits	12,682,867
PS Total	**$35,324,881**
Materials & Services	
Materials	$1,130,804
Services	3,382,344
Reserve Services	0
Maintenance	404,248
Municipal Overhead	0
MS Total	**$4,917,396**
Capital Outlay	**186,680**
Total Requirements	**$40,428,957**

Total costs for personnel services are $35,324,881, with benefits accounting for 36.0 percent and overtime for 4.5 percent of total expenditures. Materials and services and capital outlay are approximately 13.0 percent of the total modeled budget.

Operational Personnel FTEs

The following figure lists each department's (operational) personnel resources and includes only those who are assigned to emergency field operations. All positions are expressed in terms of full-time equivalency units (FTEs), where one unit is equal to one full-time worker for one year.

Figure 142: FTEs – Field Operations Staffing Summary

Rank/Title of Position	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD	Total
Assistant Chief (Shift Commander)			3.00					**3.00**
Captain	3.00	3.00	12.00	3.00	3.00	3.00	3.00	**30.00**
Paramedic Supervisor			3.00					**3.00**
Lieutenant	3.00	3.00		6.00	6.00	6.00	6.00	**30.00**
Firefighter/Paramedic	20.00	21.00	20.00	30.00	21.00	18.00	29.00	**159.00**
Firefighter/EMT			10.00		3.00			**13.00**
EMT-Paramedic			10.00					**10.00**
Firefighter/Mechanic			3.00				3.00	**6.00**
Firefighter			23.00					**23.00**
Total	**26.00**	**27.00**	**84.00**	**39.00**	**33.00**	**27.00**	**41.00**	**277.00**

A total of 277 FTEs of operational personnel are assigned to fire suppression, EMS, and service delivery in the seven cities.

Administrative Personnel FTEs

One of the primary responsibilities of every fire department's administrative and support staff is to ensure that the operational elements of the organization have the ability and means to achieve the emergency mission. Efficient, effective administration and support are fundamental to the success of the department. Without sufficient oversight, planning, documentation, training, and maintenance, the operational parts of the department will fail any operational test.

While it is common for certain administrative personnel to be assigned responsibilities on the emergency scene, such duty typically constitutes only a minor part of the overall time spent on the job. Consequently, we take into account only the administrative and support functions of these positions when evaluating the management of a fire department.

A summary of the administrative and support complement of the seven fire departments is shown in the Figure 143.

Figure 143: FTEs – Administrative/Support Staffing Summary

Rank/Title of Position	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD	Total
Fire Chief	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**7.00**
Assistant Fire Chief					2.00		1.00	**3.00**
Administrative Assistant		1.00	1.00	1.00	1.00	0.50	1.00	**5.50**
Fire Marshal			1.00				0.75	**1.75**
Fire Inspector			1.00			1.00	1.50	**3.50**
Fire Prevention Lieutenant	1.00						1.00	**2.00**
Fire Prevention Secretary							1.00	**1.00**
Fire Prevention Captain				1.00				**1.00**
	2.00	**2.00**	**4.00**	**3.00**	**4.00**	**2.50**	**7.25**	**24.75**

A total of 24.75 FTEs are involved in the administrative and support functions of the seven fire departments. Statistically, the departments maintain a ratio of 8.20 percent of administrative personnel to operational personnel. Based on experience with similar organizations, ESCI has determined that municipal emergency service agencies require a ratio of 10 to 15 percent administration and support to operational personnel. However, in this instance many functions normally provided internally by the fire departments are provided by city services.

Compensation and Benefits

Each of the seven fire departments uses career staffing to carry out its functions. Career fire department personnel receive pay and benefits in accordance with the terms specified in the CBAs (Collective Bargaining Agreement) made between each city and the individual IAFF, AFL-CIO (the union) local. Typical forms of compensation and benefits are provided to the full-time staff members of the departments, including salary, comprehensive medical/dental insurance, disability insurance, life insurance, deferred compensation, and retirement pension.

Wage and benefit packages for members appear to be competitive when compared to other organizations in this study. Furthermore, it appears that the wage and benefit packages provided by the cities do not generally present a significant threat to the welfare of the organizations. There is, however, a need for continued monitoring of the regional cost of living and employment picture. Cuyahoga and Lorain Counties have a number of agencies that have wage and benefit packages that provide a slightly higher rate of compensation. These issues may play into a department's ability to recruit and retain career personnel.

The type, amount, variety of pay classification, and benefits vary from department to department. The following figure (Figure 144) summarizes the annual wage by job title and fire department.

Figure 144: Annual Salary by Job Title and City, 2009

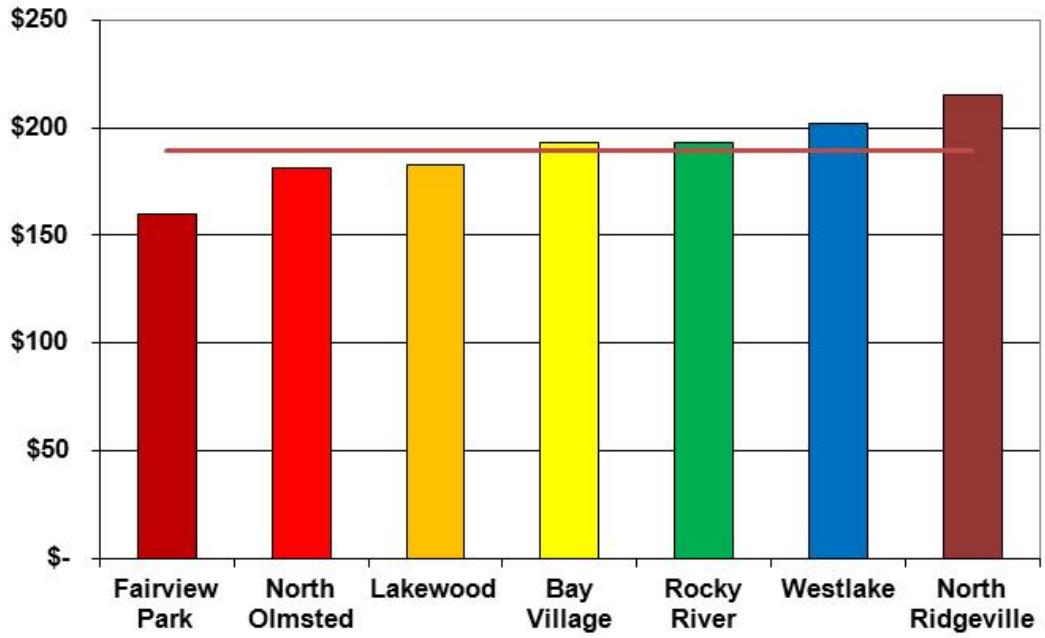
Rank/Title of Position	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD
Fire Chief	95,046	89,011	100,838	96,512	93,413	85,659	110,900
Assistant Fire Chief					84,718		91,200
Administrative Assistant		45,071	46,669	38,730	42,885	45,061	
Fire Marshal			73,328				71,926
Fire Inspector			67,135			72,472	51,376
Fire Prevention Lieutenant	68,630						73,637
Fire Prevention Secretary							40,200
Fire Prevention Captain				81,338			
Assistant Chief (Shift Commander)			84,223				
Captain/Paramedic	77,998						
Captain	76,179	83,539	73,328	76,017	73,101	81,168	81,737
Paramedic Supervisor			60,894				
Lieutenant/Paramedic	70,269						
Lieutenant	68,630	73,928		68,793	64,706	72,472	73,637
Firefighter/Paramedic	63,305	65,423	61,031		57,262	64,707	66,639
Firefighter/EMT	62,370		61,031		55,836		
Firefighter			61,031	60,879			
EMT-Paramedic			51,445				
Firefighter/Mechanic			67,134				69,658

Comparables

The following figures provide a look at how the fire departments compare to each other using per capita cost for fire and EMS, incidents and cost per incident, and assessed valuation per capita. While each figure provides factual information, they should be taken as intended—a snippet of data and an interesting fact. Much of the financial information is background and can be applied to an option that yields an outcome for comparison.

Figure 145 shows the cost per capita using the annual operating budget for each fire department and an average of the seven. The operational cost is based on the 2009 fiscal year but excludes any monies budgeted for capital purchases, contingency, and transfers to reserves.

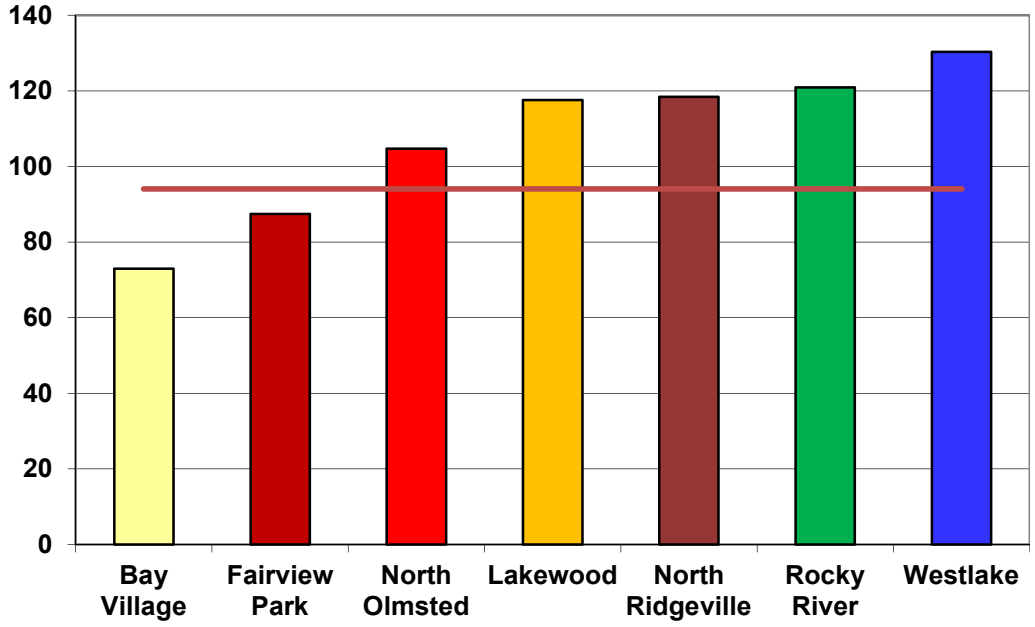
Figure 145: Fire Protection Cost and Average per Capita



The average per capita cost to operate the fire departments is approximately $190. Fairview Park, at $160 per capita or 84 percent of average, is the lowest; and North Ridgeville, at $216 per capita, the highest at 114 percent of average.

Human activity is the impetus for the number of incidents an emergency agency will have. Demography is also a factor. For example, as the population in an area ages, the number of calls for EMS will generally increase. The following figure (Figure 146) compares the number of incidents per 1,000 population and shows the average (indicated by a solid line) for the seven cities.

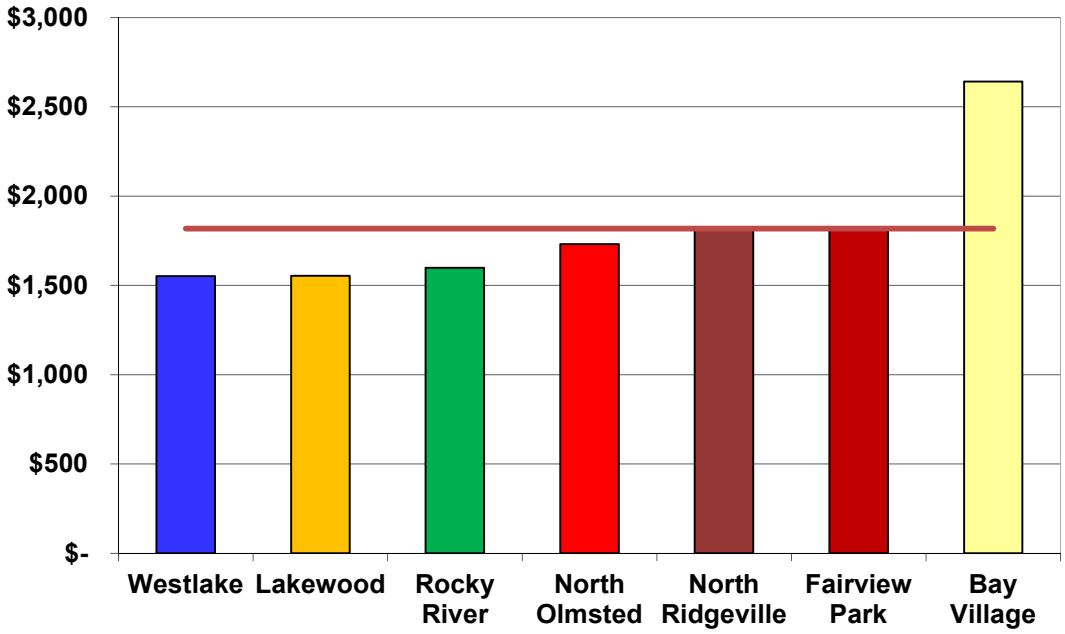
Figure 146: Incidents and Average per 1,000 Population



In 2009, Westlake FD had 130 responses and Bay Village FD had 73 responses per 1,000 population. The seven cities had an average of 94 responses per 1,000 population in 2009.

The following figure (Figure 147) illustrates the cost per incident using the operating budget and the average cost per incident for the seven fire departments. The operational cost is based on the 2009 fiscal year but excludes any monies budgeted for capital purchases, contingency, and transfers to reserves.

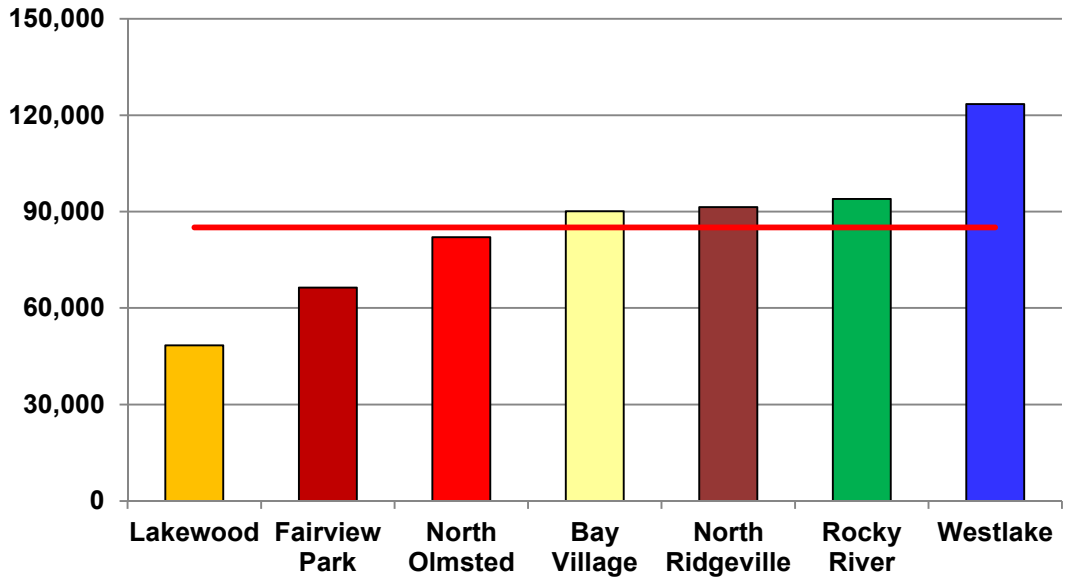
Figure 147: Cost per Incident and Average



The average cost per incident is approximately $1,818. Westlake FD, at $1,552, has the lowest cost per incident and Bay Village FD, at $2,462, the highest.

The next figure (Figure 148) shows the AV (assessed value) per capita. This information can be used to determine if a correlation exists between the AV, cost, and number of incidents per capita.

Figure 148: Assessed Value and Average per Capita



The average AV per capita is $85,118. The City of Westlake (at $123,484) has the highest and the City of Lakewood (at $48,448) the lowest AV per capita. Lakewood's AV is 39.23 percent of Westlake and 56.92 percent of average.

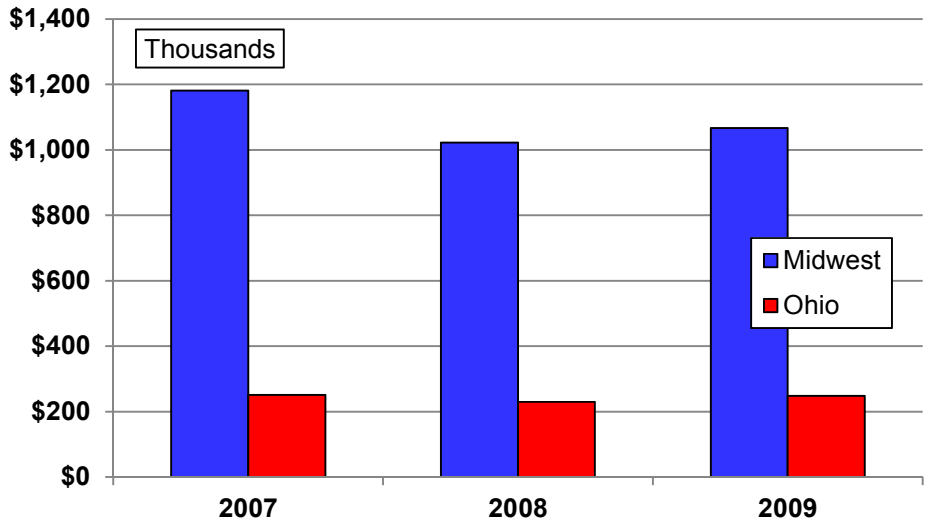
The Influence of Economic Factors on Future Cost

Many factors influence the amount of revenue (and thus the dollars available for expenditures) associated with the operation of the cities, including the fire departments. Some of the factors include unemployment, the fluctuating cost of petroleum products, the potential for decreased revenue from property taxes based on the current housing crisis, inflation (CPI-U), and the impact of development in the cities. While many causes have a detrimental impact, new development is generally positive. As a caveat, actually achieving a benefit from new development requires planning.

Fluctuation of Regional Housing Sales

The data used in the illustration is the regional, state of Ohio, and Cleveland region information for sales of existing homes. Local data for the cities may vary, but it provides a reflection of the trend in the region. Existing home sales trend between 2006 and 2008 is illustrated in the following figure.[72]

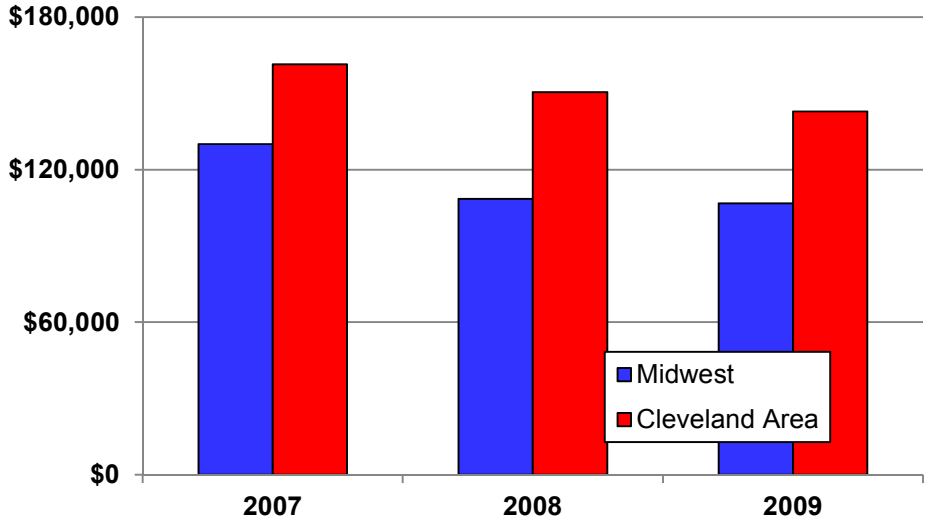
Figure 149: Sales of Existing Homes



While the number of existing homes sold declined in 2008, sales have rebounded slightly in 2009. For further evidence of how the housing market and the economy are responding, ESCI looked to the median sales price of the sold homes. The following figure captures the median sale price of existing single-family homes for the Midwest region and the Cleveland-Elyria-Mentor, OH, metropolitan area from 2007 through 2009.[73]

[72] Sales of Existing Homes—Midwest, National Association of Realtors.
[73] Ibid.

Figure 150: Midwest and Cleveland Area, Median Sales Price of Existing Homes, 2007 – 2009



From 2007 through 2009, the median sales price of homes in the Cleveland area has decreased 12.95 percent. In comparison the Midwest region has seen a decrease of 21.72 percent in the median sales price of homes.[74]

While the number of existing homes sold declined in 2008, sales have rebounded slightly in 2009. For further evidence of how the housing market and the economy are responding, ESCI looked to the median sales price of the sold homes. The following figure captures the median sale price of existing single-family homes for the Midwest region and the Cleveland-Elyria-Mentor, OH, metropolitan area from 2007 through 2009.

Figure 150 indicates that the real estate market has not stabilized. However, more recent events (including the loan industry bailout and economic stimulus initiative) indicate that it is still too soon to make a call on the future direction of the housing industry. It is likely the industry will be a buyer's market for several years, which will keep the sales prices down. While the long-term impact of this trend on the Assessed Value (AV) of homes is unknown; it could be argued that TAV will decrease.

Annual Unemployment Rate

The U.S. Department of Labor, Bureau of Labor Statistics produces an assortment of data sets and reports that are useful for economic analysis and trending. One such data set (the Local Area Unemployment Statistics program) produces monthly and annual employment,

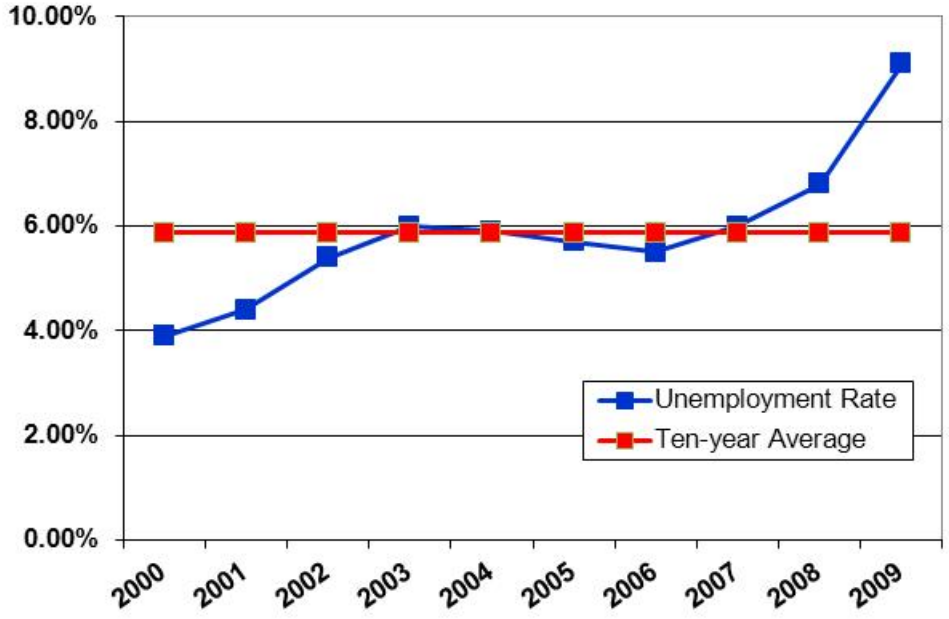
[74] Ibid.

unemployment, and labor force data for census regions and divisions, states, counties, metropolitan areas, and many cities by place of residence. Estimates in these reports are considered key indicators of local economic conditions. Unemployment is one gauge of economic health and is a statistic that is familiar to almost everyone.

Unemployment statistics are based on persons aged 16 years and older who had no employment during the reference week, were available for work (except for temporary illness), and had made specific efforts to find employment during the four-week period ending with the reference week. Persons who were waiting to be recalled to a job from which they had been laid off need not have been looking for work to be classed as unemployed.

The following figures (Figure 151 and Figure 152) show a ten-year historical review and annual average of the rate of unemployment for the Cleveland-Akron, OH, Metropolitan Statistical area.[75]

Figure 151: Historical and Average Unemployment Rate, 2000 – 2009



[75] U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics Series, LAUS Unit, LAUS system output file, Cleveland-Akron, OH, Statistical area.

Figure 152: Historical and Average Unemployment Rate, 2000 – 2009

Year	Annual Unemployment	Average
2000	3.90%	5.87%
2001	4.40%	5.87%
2002	5.40%	5.87%
2003	6.00%	5.87%
2004	5.90%	5.87%
2005	5.70%	5.87%
2006	5.50%	5.87%
2007	6.00%	5.87%
2008	6.80%	5.87%
2009	9.10%	5.87%
Average	**5.87%**	**5.87%**

Unemployment has averaged 5.87 percent over the ten-year period 2000 through 2009. For 2009, unemployment in the Cleveland-Akron, OH, Metropolitan Area increased approximately 34 percent over 2008.[76]

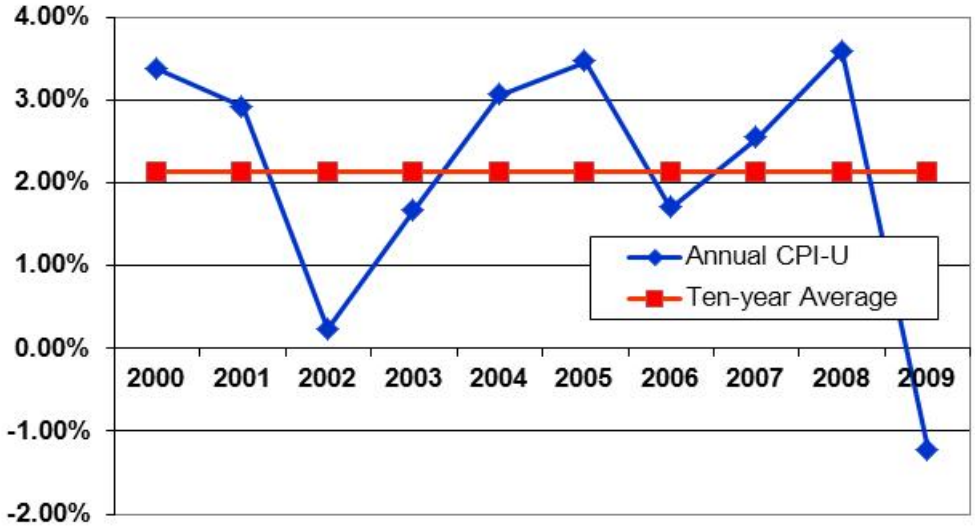
According to most recent report released by the Bureau of Labor Statistics, for April 2010 preliminary figures show that the unemployment rate for the area stands at 8.9 percent.

Annual Inflation Rate

Inflation is also an important consideration when forecasting cost. For the purpose of this analysis, we use the average Consumer Price Index for all urban consumers (CPI-U) reported for the 2000 through 2009 period for the Cleveland-Akron, OH, Metropolitan Statistical Area as compiled by the U.S. Department of Labor.[77]

[76] Ibid.
[77] U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Index—All Urban Consumers, Series Id: CUURA210SA0, CUUSA210SA0 Not Seasonally Adjusted, Area: Cleveland-Akron, OH.

Figure 153: Historical and Average CPI-U, 2000 – 2009



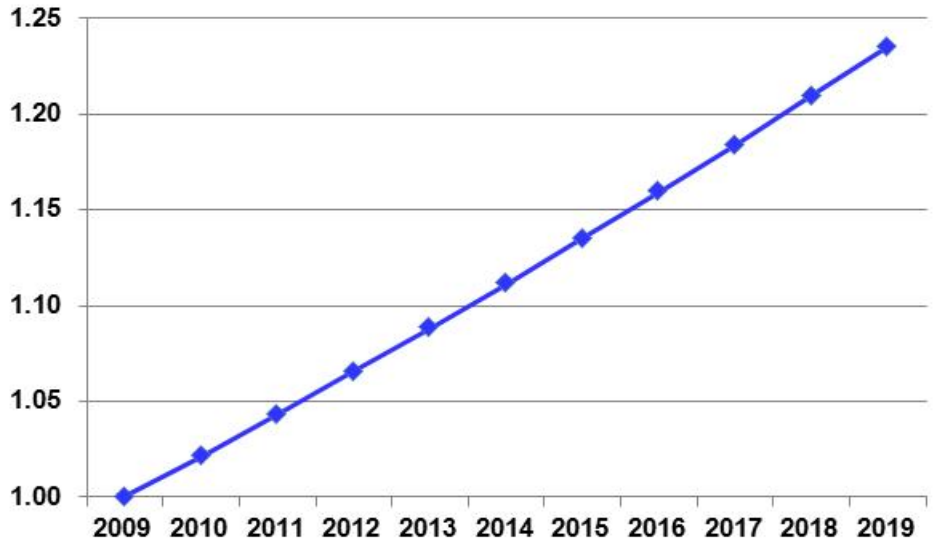
The historical ten-year average CPI-U for Cleveland-Akron, OH, area between 2000 and 2009 was 2.13 percent.

Figure 154: Historical and Average CPI-U Percentage, 2000 – 2009

Year	CPI-U	Average
1999	3.38%	2.13%
2000	2.92%	2.13%
2001	0.23%	2.13%
2002	1.67%	2.13%
2003	3.06%	2.13%
2004	3.47%	2.13%
2005	1.70%	2.13%
2006	2.55%	2.13%
2007	3.59%	2.13%
2008	-1.24%	2.13%
Average	**2.13%**	**2.13%**

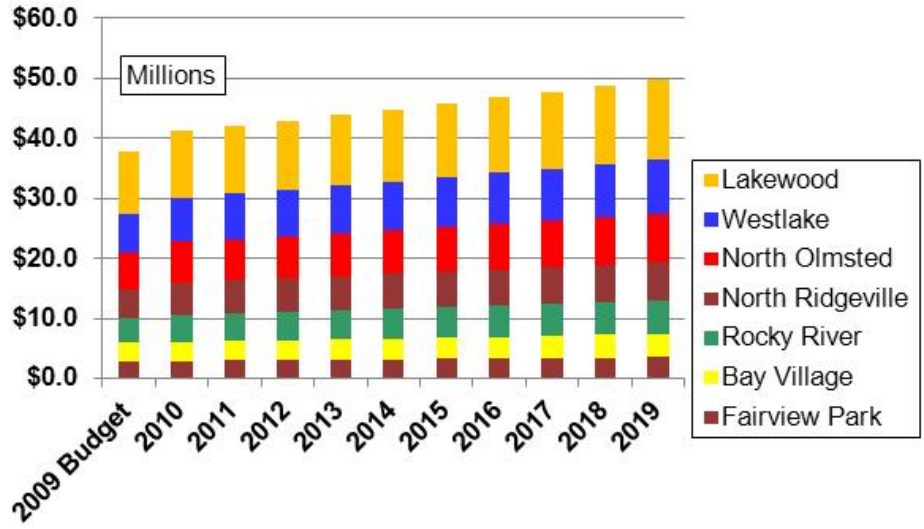
The following figure (Figure 155) uses the historical CPI-U data to forecast the impact on the fire department budgets through 2019. This rate is used for analysis purposes during the feasibility study (the actual CPI-U for any given year could be higher or lower).

Figure 155: CPI-U Forecast Budget Impact, 2009 – 2019



The annual average CPI-U increase is applied to each category of the approved 2009 budget to forecast the impact on the future financial stability of the departments. The following figure depicts the budget impact in each year through 2019.

Figure 156: CPI-U Budget Impact Forecast, 2009 – 2019



The historical CPI-U was applied to the 2009 budgets of $37.6 million for the seven fire departments. Forecasting forward ten years, the budgets are forecast to grow to $49.8 million.

Inflation will increase the cost of operations 23 percent in 2019. This amount is exclusive of any additional positions or wage and benefit increases.

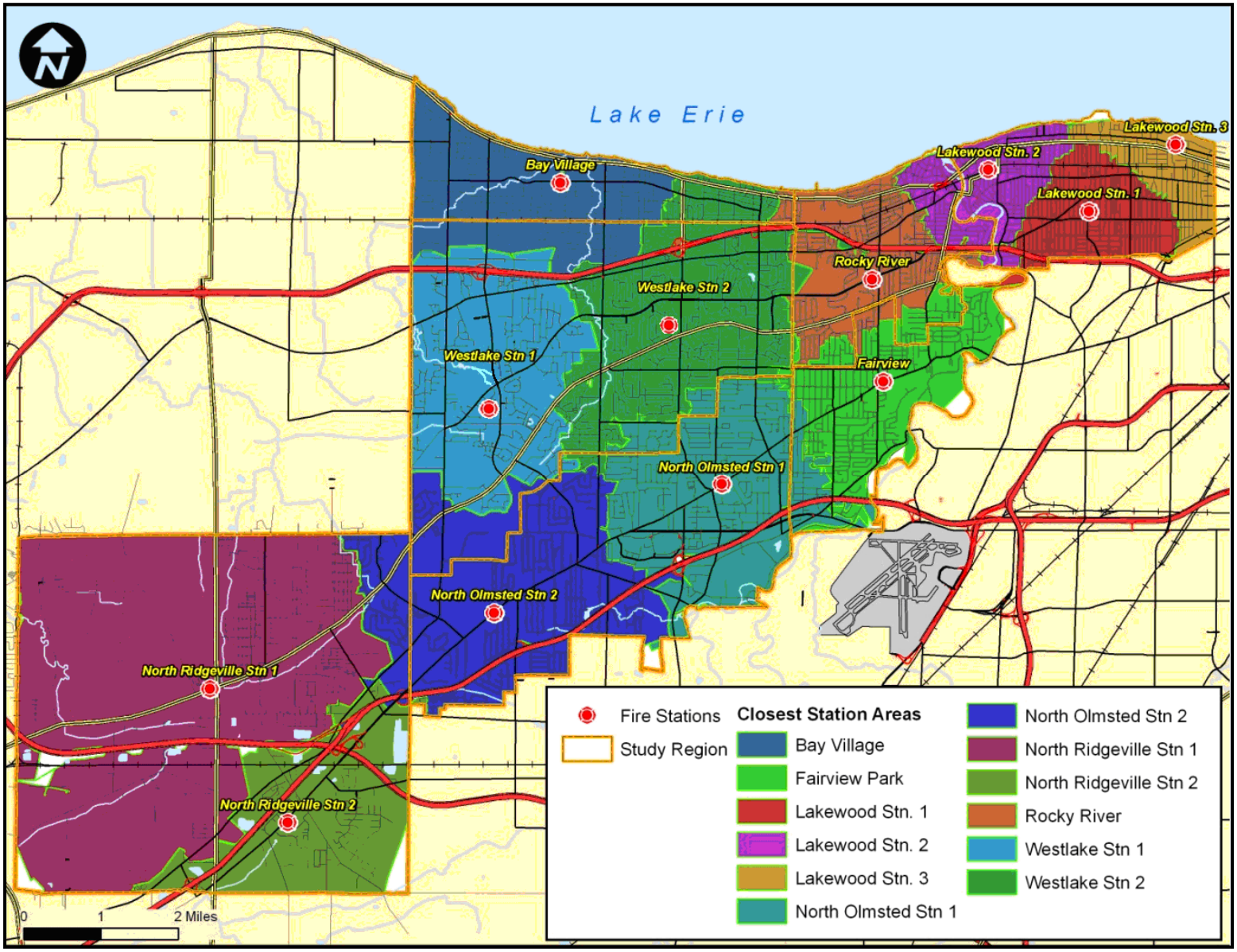
Feasible Options for Shared Fire Protection Services

Strategy A: Formation of a Single Fire Agency with all Participating Agencies

Service Level

Given that there are no recommended changes in the locations of fire stations or apparatus, the departments participating in this study (as one operational entity) can benefit from abandoning the adherence to political boundaries and instead institute a closest response area based upon current fire station locations. However, it is likely that additional fire stations would be necessary to achieve a uniform level of service and meet service demand. The primary service improvement from this strategy is realized from faster response times (effectiveness) and potentially lower apparatus maintenance costs (efficiency) for the consolidated organization. The following figure (Figure 157) illustrates the optimal response areas for each station in the Westshore area. The former political boundaries are overlaid atop these areas for visual comparison purposes only.

Figure 157: Closest Station Areas – All Departments



As expected, almost all fire stations can serve a portion of an adjoining jurisdiction faster than the host fire station. The following subsections will discuss the benefit or cost to each jurisdiction individually followed by summary tables that illustrate the effect upon the regional as a whole.

Bay Village Fire Department

The Bay Village Fire Station cannot reach the east side of its jurisdiction faster than Westlake's Fire Station No. 2 and Rocky River FD; however, it can reach the northwestern area of Westlake faster than WFD Fire Station No. 1. As such, its workload increases significantly from current levels as does its time traveling to incidents (although the time increase is slight).

Fairview Park Fire Department

FPFD is able to reach into areas of Rocky River faster than RRFD but cannot reach its own southwest area faster than North Olmsted Fire Station No. 1. The net result is a decrease in workload and travel time to incidents.

Lakewood Fire Department

Lakewood Fire Station No. 2 is able to reach almost a third of Rocky River's area faster than RRFD. This increases the department's overall workload and time operating apparatus responding to these additional incidents. Again, this affects only Lakewood Fire Station No. 2.

North Olmsted Fire Department

NOFD is able to reach the vast majority of its jurisdiction faster than the surrounding stations within this study. It is also able to reach into southwest Fairview Park, southern Westlake, and the northeastern area of North Ridgeville faster than the host fire stations. Not surprisingly, the workload for this department increases significantly as does travel time to incidents.

North Ridgeville Fire Department

Because NRFD Fire Station No. 1 currently cannot reach the town's northeast area faster than North Olmsted Fire Station No. 2, the net effect is a decrease in workload and travel time costs. However, a proposed change in location for Fire Station No. 1 would provide coverage to this area.

Rocky River Fire Department

RRFD is able to reach into the very eastern extent of Bay Village faster than BVFD, but neighboring stations in Lakewood (Fire Station No. 2) and Fairview Park are able to reach large areas of Rocky River faster than the host station. Expectedly, workload is reduced the most of any department, as is time spent responding to incidents.

Westlake Fire Department

WFD Fire Station No. 2 is able to reach a large area of Bay Village faster than BVFD, but WFD Fire Station No. 1 cannot reach its northern area faster than BVFD. Both stations are also unable to reach their southern areas faster than North Olmsted FD can. The net effect is a slight decrease in workload and a sizable decrease in travel time.

Closest Station Response Summary

While individually each fire department would be affected by a regional approach to response areas, the Westshore Region overall would benefit from such a practice. ESCI begins by analyzing the amount time spent traveling to incidents by each closest station within each jurisdiction versus within each closest station response (CSR) area. The results are illustrated in the table (Figure 158) that follows.

Figure 158: Strategy A – Travel Time Comparison[78]

Travel Time (hours) to Incidents			
Station	**Current**	**CSR**	**Difference**
Bay Village	24.50	27.90	3.40
Fairview Park	41.54	33.99	(7.55)
Lakewood 1	60.05	60.05	0.00
Lakewood 2	18.00	31.65	13.65
Lakewood 3	57.52	57.52	0.00
North Olmsted 1	60.63	71.64	11.01
North Olmsted 2	44.92	67.96	23.04
North Ridgeville 1	91.96	78.81	(13.15)
North Ridgeville 2	19.11	16.04	(3.08)
Rocky River	105.52	73.61	(31.91)
Westlake 1	75.63	70.21	(5.42)
Westlake 2	100.85	84.27	(16.58)
Westshore Region	**700.24**	**673.65**	(26.59)

Half of the fire stations in the region experience a decrease in time travelling to incidents; this would translate into a faster overall response time to emergencies in all jurisdictions—a reduction of over 26 cumulative hours of response time over the study period. Next, the workload of each fire department is expressed as a percentage of increase or decrease compared to the current model of responding only to jurisdictional calls.

Figure 159: Strategy A – Workload Change by Agency

Fire Department	Service Demand Change	Workload Change
Bay Village	122	27.11
Fairview Park	-115	-9.51
Lakewood	357	8.29
North Olmsted	254	11.73
North Ridgeville	-191	-8.87
Rocky River	-262	-12.38
Westlake	-165	-4.92

An increase in projected call volume for Lakewood Fire Station No. 2 may be difficult to manage and require an additional resource, such as an additional EMS unit.

[78] "Incident in Current District" represents the total of all incidents that were able to be geocoded in ESCI's Geographic Information System (GIS) software. Geocoding of incidents is necessary to develop travel time models. Mutual aid incidents were also removed from the dataset to ensure that an accurate accounting of 'in district' incidents was recorded. The resulting total incidents for each department are, therefore, conservative and the "Difference in Travel Time" would only increase with the addition of more geocodable incidents.

Finally, it is important to analyze whether this CSR configuration improves service demand coverage against the modeled allowance for travel time (four minutes) to meet the *NFPA 1710* response time performance guideline. The following table details the results of this analysis.

Figure 160: Strategy A – Change in Service Demand Coverage (Four-Minute Travel Time)

Department	Jurisdiction	CSR Area	% Change
Bay Village	71%	77%	6%
Fairview Park	91%	94%	3%
Lakewood	100%	100%	0%
North Olmsted	84%	84%	0%
North Ridgeville	74%	77%	3%
Rocky River	86%	90%	4%
Westlake	82%	89%	7%
Westshore Region	**87%**	**90%**	**3%**

Bay Village FD, Rocky River FD, and Westlake FD have the greatest increase in service demand coverage when geographic responsibility shifts to a CSR configuration. Bay Village benefits from service demand in Westlake and reduction in an area on the east side of town. Rocky River's result is purely from a reduction in geographic area, as is Westlake's result. The distance between nearby stations does not favor North Olmsted's ability to increase its service demand coverage. Nonetheless, the overall change in service demand coverage within the region surpasses the 90th percentile benchmark. This again would translate in improvement in response time to emergencies within the region.

Level of Cooperation

- Operational

Timeline for Completion

- Long-term

Section

- Administration and Operations

Affected Stakeholders

- All Agencies

Objective

- Consolidate fire and EMS entities into a single operational unit, either through Interlocal Agreement (ILA) or the establishment of a new fire district.

- Provide increased fire and emergency service efficiency in the areas served by the current fire departments.

Summary

The fire departments in the study area already benefit from some limited collaborative efforts, particularly in regard to emergency response and suppression activities; and it is natural that continuing the long-term strategy of cooperation should eventually lead to the whole area forming a single fire agency. If the fire departments continue this progression by implementing even some of the partnering strategies found in this study, taking the next logical step seems inevitable. A cost analysis of this strategy at full deployment shows an annual cost avoidance of over $595,511 (based on 2009 fiscal year dollars).

Discussion and Financial Analysis

A concept for staffing of administration and support services of a combined fire and EMS department lists position/title and the number of FTEs. Keep in mind that an FTE is not equivalent to a position in that an FTE accounts for benefit leave time and other absences that must be filled with additional or off-duty personnel.

Figure 161 is one concept for allocating positions in a consolidated agency for administrative and support services.

Figure 161: Strategy A – Concept of Administration and Support Services Staffing

Position Title	Number of Positions
Fire Chief	1.00
Deputy Chief	5.00
Captain Deputy Fire Marshal	1.00
Lieutenant Fire Prevention Officer	2.00
Fire Inspector	3.00
Captain Training Officer	1.00
Lieutenant Training Assistant	1.00
Administrative Assistant	3.00
Facilities Maintenance	1.00
Fleet Services	1.00
Clerical Support	2.00
Secretary Fire Prevention	1.00
Undetermined Support Position	2.00
Total	**24.00**

A total of 24 FTEs are assigned to the administration and support functions under the above concept. The staffing involves the realignment of functions, newly created positions, and 2.00

FTEs that are listed as undetermined. Significant additions were made under the reallocation and combining of the departments, personnel dedicated to fire and EMS training and support services (facilities and fleet maintenance). The following table compares the current staffing for administration and support to the concept model.

Figure 162: Current to Proposed – Administrative and Support Staff

Position Title	Current	Proposed	Change
Fire Chief	7.00	1.00	- 6.00
Deputy Chief	3.00	5.00	2.00
Fire Marshal	1.75	0.00	- 1.75
Captain Deputy Fire Marshal	1.00	1.00	0.00
Lieutenant Fire Prevention Officer	1.00	1.00	0.00
Fire Inspector	3.50	3.00	- 0.50
Captain Training Officer	0.00	1.00	1.00
Lieutenant Training Assistant	0.00	1.00	1.00
Administrative Assistant	5.50	3.00	- 2.50
Facilities Maintenance	0.00	1.00	1.00
Fleet Services	0.00	1.00	1.00
Clerical Support	0.00	2.00	2.00
Secretary Fire Prevention	1.00	1.00	0.00
Undetermined Support Position	0.00	2.00	2.00
Total	**23.75**	**23.00**	**- 0.75**

While there is only a net decrease in positions of 0.75 FTE, the concept assigns personnel to functions that did not previously have dedicated personnel.

The figure below shows a concept of the number of FTEs for staffing operations of a single consolidated fire agency.

Figure 163: Strategy A – Concept of Operational Staffing

Position Title	Number of Positions
Assistant Chief (Shift Commander)	6.00
Paramedic Supervisor	3.00
Station Captain	20.00
Lieutenant	32.00
Firefighter/Paramedic	152.00
EMT/Paramedic	10.00
Firefighter/EMT	10.00
Firefighter/Mechanic	0.00
Firefighter	22.00
Total	**255.00**

A total of 255 FTEs are assigned to the delivery of emergency services under the above concept. The staffing involves the realignment of some functions, addition of a second battalion (two battalion chiefs per shift), and the rank of captain having the responsibility, authority, and accountability for a single fire station. Lieutenants have day-to-day responsibility for company-related duties and for carrying out the assignments organized by the station captain.

Figure 164: Current to Proposed – Emergency Services Staff

Position Title	Current	Proposed	Change
Assistant Chief (Shift Commander)	3.00	6.00	3.00
Paramedic Supervisor	3.00	3.00	0.00
(Station) Captain	30.00	20.00	-10.00
Lieutenant	30.00	32.00	2.00
Firefighter/Paramedic	159.00	152.00	-7.00
EMT/Paramedic	10.00	10.00	0.00
Firefighter/EMT	13.00	10.00	-3.00
Firefighter/Mechanic	6.00	0.00	-6.00
Firefighter	23.00	22.00	-1.00
Total	**277.00**	**255.00**	**- 22.00**

The net reduction in operational personnel would be accomplished through attrition and voluntary reassignment to administrative and support functions based on knowledge, skills, and abilities, as well as the needs of the fire department.

Ambulance Deployment

Requests for medical assistance and rescue situations account for the majority of the service demand for the Westshore fire departments. However, the volume of these incidents is driven by human activity during the daytime hours as well as demographic and socioeconomic factors. An analysis of these types of calls was undertaken to determine the number of ambulance units generally needed throughout the day and evening, as well as to determine which areas would need to house these units to best provide coverage of service demand.

Each department's medical/rescue calls[79] were tabulated and combined on a per hour basis for the last full year of data provided. An average service time on calls was applied to the average per day by hour volume to enable the analysis of commitment time per hour per day. While, it would be efficient to have these units committed to calls at all times, this is not practical. The workload on emergency response units can be a factor in response time performance. The busier a given unit, the less available it is for the next emergency; thus, the higher its "failure

[79] Lakewood Medical/Rescue volume was determined by the identifiable calls and the ones that were left blank with the assumption that the vast majority of these were likely medical/rescue types.

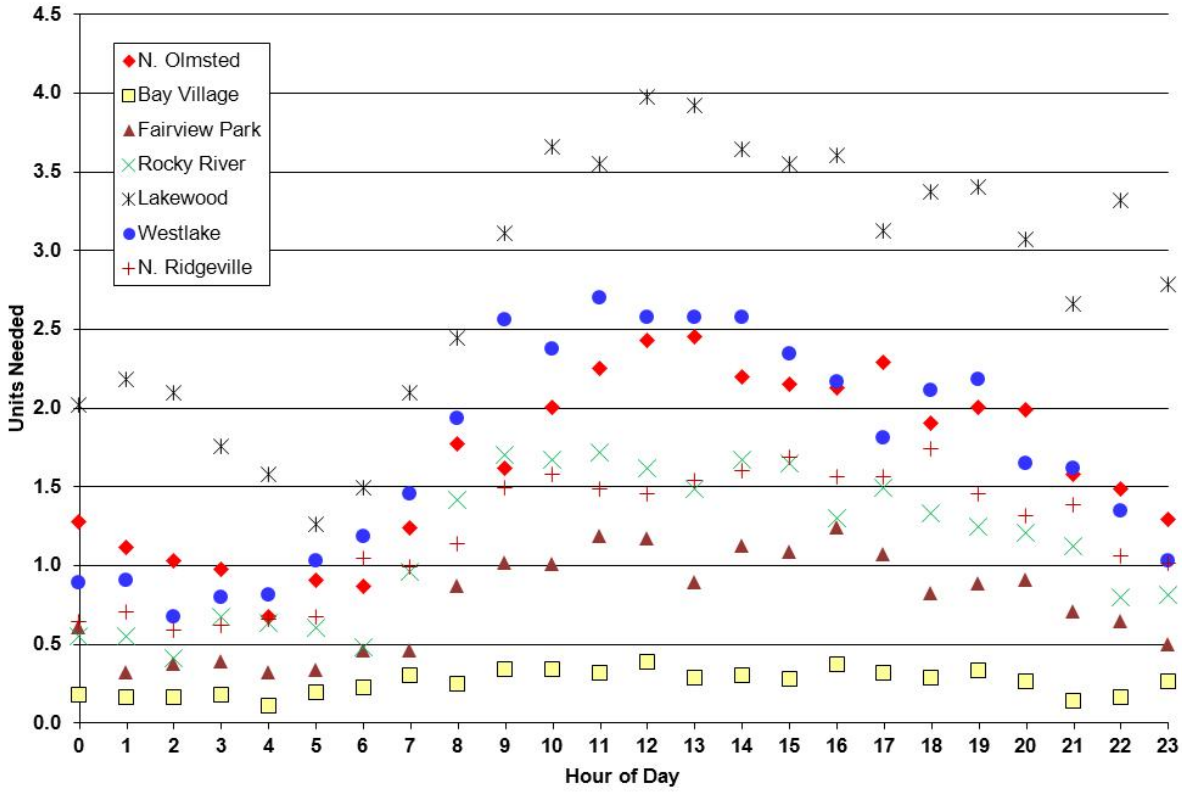
rate".[80] If a response unit is unavailable, then an alternate unit and/or a unit from a more distant fire station must respond, increasing overall response times. A cushion of surplus response capacity above average values must be maintained due to less frequent but very critical times, when atypical demand patterns appear in the system. Multiple medical calls (see Concurrency Analysis), fires, multi-casualty events, or multiple alarm calls are all examples.

Utilization rate is an important workload indicator. It describes the amount of time a unit is not available for response since it is already committed to an incident. The larger the number, the greater its utilization and the less available it is for assignment to an incident. Because of cross staffing and dual roles of firefighter/paramedics, extensive training as well as station duties, meals, public education, prevention, and rest breaks are factored into an appropriate level of commitment to emergencies. Recommended utilization rate maximums for fire department rescue units are typically around 0.20, while sole ambulance service agencies can be higher due to less training needs and profit-driven incentives. Higher utilization rates and ancillary duty levels would contribute to employee burnout, which will correlate with higher recruitment and training costs.

During the early morning hours the region can be served by as few as five units. Specifically, the ambulances should be deployed at minimum within the departments as depicted in the following figure.

[80] "*Failure rate"* is the term that refers to the percentage of calls for which a unit is unavailable when it would normally be the closest and most appropriate unit. When an alternate unit must be dispatched, this is considered a "call failure" for the normally assigned unit.

Figure 165: Ambulance Need by Location



Service areas where the ambulance need has been determined to be less than 0.5 units for that hour of the day would be served by a neighboring unit that exceeds that figure. The following figure gives the specific values of the analysis.[81]

[81] Values for units are rounded to the nearest full unit number.

Figure 166: Ambulance Unit Need by Location and Hour of Day

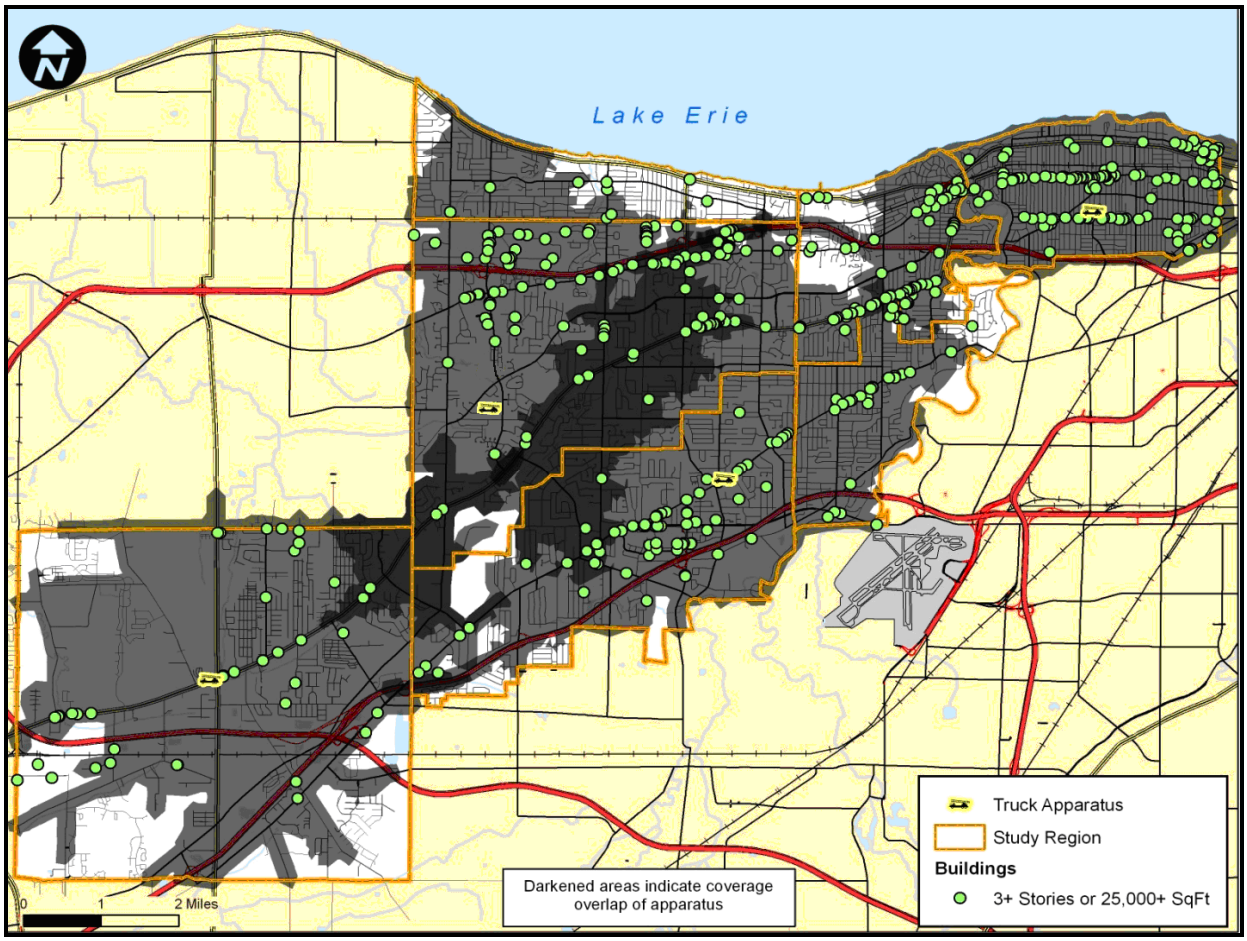
Hour	BVFD	FPFD	LFD	NOFD	NRFD	RRFD	WFD	Total
00:00	0.18	0.60	2.01	2.00	0.64	0.55	0.89	**7**
01:00	0.16	0.32	2.18	1.11	0.70	0.55	0.90	**6**
02:00	0.16	0.37	2.10	1.03	0.59	1.00	0.67	**6**
03:00	0.18	0.38	1.75	0.97	0.62	0.67	0.79	**5**
04:00	0.11	0.32	1.58	0.67	0.66	0.63	0.81	**5**
05:00	0.19	0.33	1.26	0.90	0.67	0.60	1.03	**5**
06:00	0.22	0.00	1.49	0.86	1.04	1.00	1.18	**6**
07:00	0.30	0.45	2.10	1.23	0.99	0.96	1.45	**7**
08:00	0.25	0.86	2.44	1.77	1.14	1.41	1.93	**10**
09:00	0.34	1.01	3.11	1.62	1.49	1.70	2.56	**12**
10:00	0.34	1.00	3.66	2.00	1.58	1.67	2.37	**13**
11:00	0.32	1.18	3.55	2.25	1.48	1.71	2.70	**13**
12:00	0.38	1.16	3.97	2.42	1.45	1.62	2.58	**14**
13:00	0.29	0.89	3.92	2.45	1.53	1.48	2.58	**13**
14:00	0.30	1.12	3.64	2.19	1.60	1.67	2.58	**13**
15:00	0.27	1.08	3.55	2.15	1.68	1.64	2.34	**13**
16:00	0.37	1.23	3.60	2.12	1.56	1.30	2.16	**12**
17:00	0.32	1.07	3.12	2.29	1.56	1.49	1.81	**12**
18:00	0.29	0.82	3.37	1.90	1.74	1.33	2.11	**12**
19:00	0.33	0.88	3.40	2.00	1.45	1.25	2.18	**11**
20:00	0.26	0.90	3.07	1.99	1.32	1.21	1.64	**10**
21:00	0.14	0.70	2.66	1.58	1.38	1.12	1.62	**9**
22:00	0.16	0.64	3.32	1.48	1.05	0.79	1.34	**9**
23:00	0.26	0.49	2.78	1.29	1.01	0.81	1.03	**8**

The fire departments in the Westshore Region could employ the peak load ambulance deployment noted in the preceding table as an alternative to a static deployment model. Peak loading is more efficient than static deployment models and is seen as more effective in aiding those who are injured or ill. In areas where an ambulance is not available and must come from a further distance, the host engine should be dispatched to render aid in the most expeditious manner. In areas where and when the unit needs are below 0.5, the department may elect to cross-staff the ambulance with on-duty firefighters. Since the incidents of fire-related emergencies are relatively low compared to the level of medical/rescue requests, departments may elect to fully staff the ambulances and instead cross-staff fire apparatus.

Truck Deployment

The following figure lists the optimum locations for aerial devices (ladder trucks) to provide coverage for the Westshore region. Four ladders trucks are capable of response to nearly all of the structures over three stories or 25,000 square feet.

Figure 167: Ladder Truck Coverage and Deployment



Optimal coverage is possible by locating a ladder truck at each of the following fire stations:

- North Ridgeville Fire Station No. 1
- Westlake Fire Station No. 1
- North Olmsted Fire Station No. 1
- Lakewood Fire Station No. 1

The fire station location and deployment of engines, aerials, medic units, and total emergency response units are summarized in Figure 168.

Figure 168: Apparatus Deployment by Fire Station

Fire Station	Engine	Aerial	Medic	Total
Bay Village Fire Station	1		1	2
Fairview Park Fire Station	1		1	2
Lakewood Fire Station No. 1	1	1	2	4
Lakewood Fire Station No. 2	1		1	2
Lakewood Fire Station No. 3	1		1	2
North Olmsted Fire Station No. 1	1	1	1	3
North Olmsted Fire Station No. 2	1		1	2
North Ridgeville Fire Station No. 1	1	1	1	3
North Ridgeville Fire Station No. 2	1			1
Rocky River Fire Station	1		2	3
Westlake Fire Station No. 1	1	1	2	4
Westlake Fire Station No. 2	1		1	2
Totals	**12**	**4**	**14**	**30**

A total of 30 response units would be assigned to emergency response.

The following figure illustrates the recommended deployment of emergency response personnel.

Figure 169: Proposed Emergency Services Staff Deployment

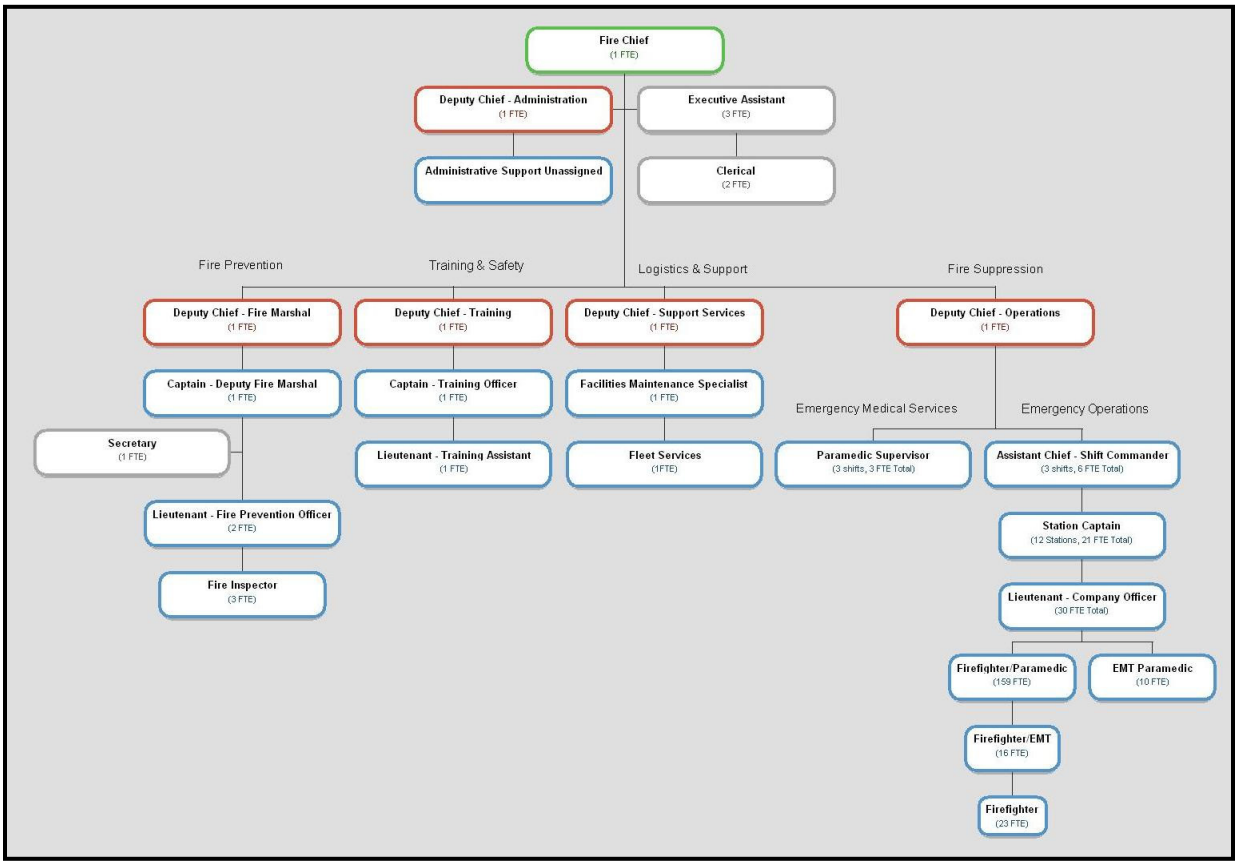
	AC	PM Super	Capt	Lieut	FF/PM	FF/EMT	Total
Bay Village Fire Station			1	2	12	2	17
Fairview Park Fire Station	3		1	2	12	2	20
Lakewood Fire Station No. 1			3	4	18	4	29
Lakewood Fire Station No. 2			1	2	12	2	17
Lakewood Fire Station No. 3			1	2	12	2	17
North Olmsted Fire Station No. 1			3	4	18	4	29
North Olmsted Fire Station No. 2	3	3	1	2	12	2	23
North Ridgeville Fire Station No. 1			3	4	18	4	29
North Ridgeville Fire Station No. 2			1	2	6	2	11
Rocky River Fire Station			1	2	12	2	17
Westlake Fire Station No. 1			3	4	18	4	29
Westlake Fire Station No. 2			1	2	12	2	17
Total	**6**	**3**	**20**	**32**	**162**	**32**	**255**

The deployment is based on positions rather than FTEs as presented earlier and would basically divide the consolidated department into two battalions, each with a primary area of responsibility. Assistant Chief (Shift Commander) No. 1 (or the designation chosen) would oversee the western portion of the response area and Assistant Chief No. 2 would oversee the

eastern response area. Personnel numbers above minimum staffing are assigned to each fire station. This is done to maintain minimum staffing levels of three on engines and ladder trucks and two on ambulances for vacation, sick leave, sick injury, training leave, or other compensated leave.

The following figure combines the restructured administrative and support with operations and presents a concept of an integrated organizational structure for Strategy A. Each of the five deputy chiefs have divisional assignments over a major department functional area and are direct reports to the fire chief.

Figure 170: Concept Organizational Chart



This chart represents one concept for the organizational structure of the consolidation of the seven fire departments. It is seen as a starting point for formalizing a structure that includes departments and functions agreed upon by the collaborating agencies. Detailed discussions should follow any decision to proceed with integrating the fire departments.

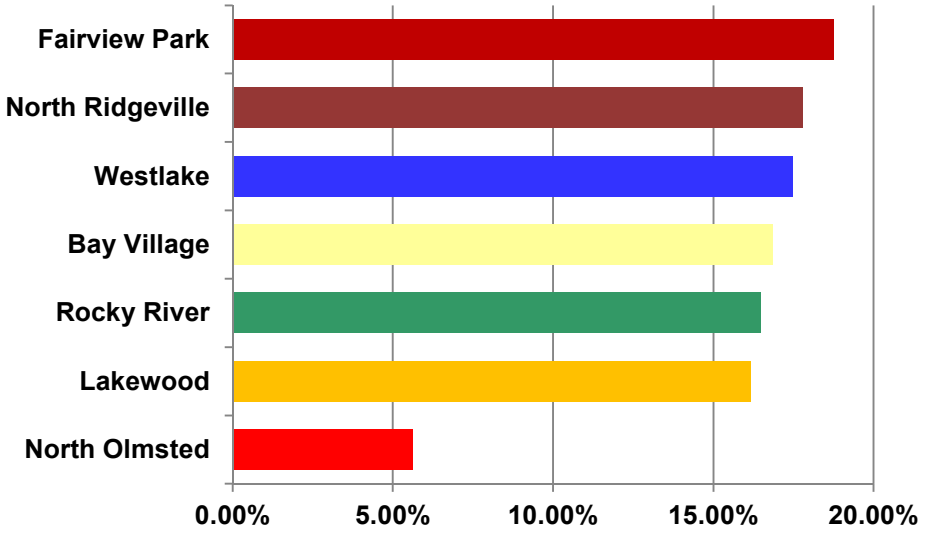
Fiscal Considerations

The same service at a reduced cost is always desirable. Increased cost accompanied by a higher level of service is frequently acceptable, but sometimes increased cost becomes a political lightning rod if accompanying benefits are perceived as few. Whether that happens or not in this case depends greatly on how the citizens of the area see the change, and how politics drive the issue. Certainly, a frequently mentioned "deal killer" during the stakeholder interviews for this study is increased cost.

A major portion of the fire department budgets that may impact cooperative efforts is the cost of the pension plans. Actuarial liability, employee contributions, group demographics, years of service, benefits, and plan assumptions are dynamics that will affect the contribution amount of the employer. Current pension contributions are established at 24 percent. For clerical employees covered by PERS, the employer contribution is 14 percent.

The following figure illustrates the percentage of the personnel services budget that is dedicated to the employer pension contribution made by each fire department.

Figure 171: Percentage of Personnel Services Budget for Pension by City



The percentage varies from a low of 14.81 percent to a high of 18.75 percent of the personnel services budget. The average contribution for the seven cities was 15.60 percent. Variations in the amount contributed are most likely related to budgeting methods for the individual cities.

The figure below shows the baseline cost of an integration of the seven fire departments. The modeling uses the staffing model with 278.00 FTEs. Debt, pension contributions, and dispatch

service payments were included in the calculation. If the fire departments do pursue a consolidation, the liabilities could be transferred to the new organization. For this example, the assumption is that the debt remains where it was incurred.

Figure 172: Baseline Cost of Strategy A: Fiscal Year 2009

Personnel Services	Baseline	Modeled	Difference
Administration	1,995,330	1,678,565	(-316,765)
Operations	17,420,123	17,408,606	(-11,517)
Overtime	937,998	909,858	(-28,140)
Benefits	11,400,934	11,201,285	(-199,649)
PS Total	**31,754,385**	**31,198,314**	**(-556,071)**
Materials and Services	**Baseline**	**Modeled**	**Difference**
Materials	1,572,464	1,556,739	(-15,725)
Services	3,456,396	3,437,194	(-19,202)
Reserve Services	0	0	0
Maintenance	451,318	446,805	(-4,513)
Municipal Overhead	0	0	0
MS Total	**5,480,178**	**5,440,738**	**(-39,440)**
Capital Outlay	**186,680**	**186,680**	**0**
Total Requirements	**$37,421,243**	**$36,825,732**	**(-$595,511)**

Based on fiscal year 2009, cost modeling shows that an integrated fire department would result in a lower total cost to operate. The full cost avoidance of $595,511 could be achieved in one to two years of attrition.

> *As stated in the baseline assumptions, some job classifications in the separate departments may have more than one level of compensation assigned. If ESCI is not able to identify the actual salary that is paid in such cases, ESCI usually weights compensation estimates to about 90 percent of the high end of the salary scale to allow for a tendency (over time) for a group of workers to reach maximum wage. In this case, for most departments, ESCI was able to use the payroll report to identify existing salaries; consequently, the model makes compensation assumptions that are very close to the actual amounts paid by that agency. When merging organizations, ESCI assumes that the highest salary paid to similar classifications prevails.*

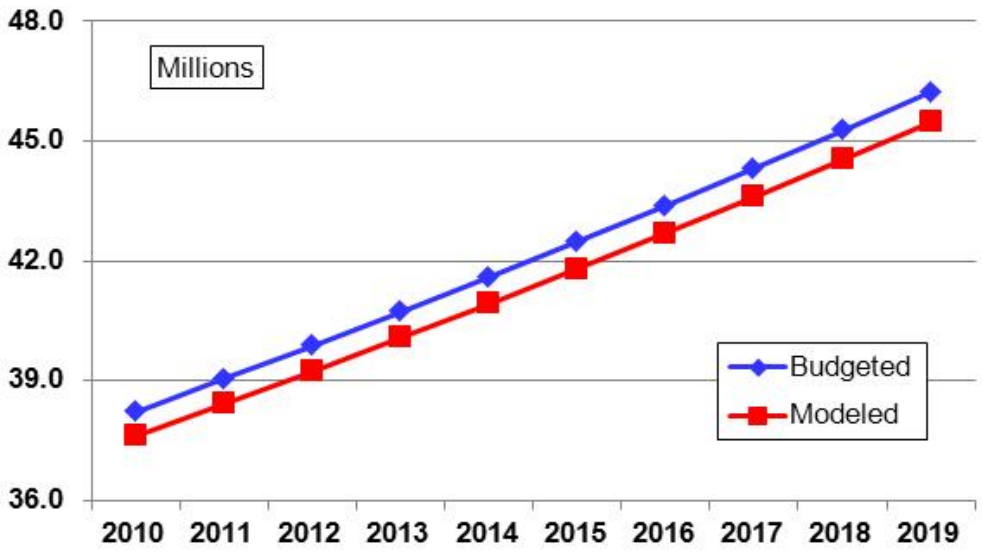
Overtime is reduced by approximately $28,140 from the combined use by the seven fire departments' total of $937,998. The overtime shown in the baseline rate is equivalent to the current annual expenditure. Strategies to further reduce this are dependent on the policies established by the AHJ (authority having jurisdiction) and provisions of the working agreements with labor.

Additional cost avoidance can be realized by a reduction in the number of frontline and reserve fire apparatus requirements. A portion of the savings should be used to establish a capital reserve fund for the replacement of capital apparatus and equipment.

Recommendation 76: A portion of the monies realized as cost avoidance should be applied to a reserve fund for capital purchases: facilities, apparatus, equipment, and maintenance.

To gauge future costs, the historical ten-year average CPI-U was applied to budgeted expenditures for fiscal year 2009 and the modeled rate. In the following figure, expenses are forecast forward ten years.

Figure 173: Forecasted Budget and Model Expenditures, 2010 – 2019



In fiscal year 2019, based on the CPI-U, expenditures are forecast to be $46,220,357 (based on the 2009 budgets of the seven fire departments). The model expenditures are forecast to be $45,484,820, a difference of $735,538. For the ten-year period, the projected cost avoidance is $7,296,389.

IAFF CBAs (Collective Bargaining Agreement) with Employees

A labor agreement is a contract between the management representatives of a city or other political unit and the designated representatives of a labor group. The purpose of a labor agreement is to memorialize in written form the wages, hours, benefits, and terms and conditions of employment afforded to covered employees. Labor agreements (also referred to

as Memorandum of Understanding or MOU) also outline an orderly and equitable means of resolving any misunderstanding or conflict between the parties. Each of the cities in this study has a collective bargaining agreement with members of the fire departments with work rules that are diverse.

For the fire departments participating in this study to work more closely together, labor and management groups need to address the differences between labor agreements. One way to move forward is to begin the process of aligning the labor agreements of the seven fire departments during future collective bargaining processes.

Training

Each of the study agencies currently plans, develops, and delivers training internally with staff that has assumed these additional responsibilities over and above their daily duties. Under this strategy, ESCI suggests the addition of a training officer to coordinate training for the new organization while still relying on individuals within each of the current stations to assist in delivery of the training program. Support in the form of an assistant training officer can be used to provide remote training on location at the fire stations.

Fire Prevention

Currently, only the Lakewood FD uses a dedicated fire marshal to administer and enforce fire codes. Westlake FD budgets 0.75 FTEs to the fire marshal position.

Figure 174: Current to Proposed – Fire Prevention Staff

Position Title	Current	Proposed	Change
Fire Marshal	1.75	1.00	-0.75
Fire Inspector	3.50	3.00	-0.50
Fire Prevention Lieutenant	2.00	2.00	0.00
Fire Prevention Secretary	1.00	1.00	0.00
Fire Prevention Captain	1.00	1.00	0.00
Total	**9.25**	**8.00**	**- 1.25**

Under this strategy, the consolidated organization would still rely on one fire marshal (deputy chief)[82] to coordinate and oversee the overall fire prevention program for the new agency and would continue to rely on the building departments in each city to conduct plan reviews and test fire suppression systems. On-duty personnel would continue to conduct company-level

[82] The position of fire marshal is recommended to be at the rank of deputy chief.

inspections throughout the seven cities based on an assignment schedule developed by the fire marshal.

Facilities and Apparatus

A prior discussion of facilities and apparatus offers an idea of general costs. Definitive capital expenses for the options can only be determined after establishment of terms of an agreement on the desired level of service.

Policy Action

A number of policy options exist for integrating the fire and emergency services of the fire departments in the study area. Some of the following options might be deemed inappropriate in this situation by the local elected officials, who are much more in touch with local political will and culture; but these options are worthy of discussing for future opportunities. The options include the following:

- Form a consolidated fire department through an interlocal agreement (ILA). This would leave all existing funding and governance mechanisms in place and require extensive negotiation of interlocal agreements for the formation, governance, and operation of a single fire and EMS department. Equitable funding would be negotiated through the ILA. This policy option would only operationally merge the fire protection system of the study area, requiring local action and proper notification for reversal.
- Gain voter approval to form and fund a joint fire district.

Critical Issues

Organizational consolidations and mergers fail for many reasons. Sometimes law prohibits the idea at the outset. Other times the proposal may be doomed by the unfavorable outcome of a public election, or the reality of finance. These issues aside, however, four major pitfalls can cause even the most feasible consolidation to go wrong. We think of these pitfalls as the "Four Horsemen" of failed partnerships. Specifically, the four are command, communication, control, and culture.

- **Command:** Undertaking any partnership as complex as a consolidation absolutely requires effective leadership be demonstrated consistently at all levels. Policymakers and administrators must guide their respective agencies, yet (at the same time) they must cooperate with partner organizations. Differing leadership styles may cause repressed friction at best and open conflict at worst. Problems with sharing control and making decisions sends the wrong message to the members of the organization, which can lead to an unraveling of even the best proposal.
- **Communication:** Silence or limited information from leaders about potential or upcoming partnerships breeds fear, mistrust, and misinformation among affected

persons. The leadership of collaborating organizations must agree to communicate actively with all affected groups. Everyone must be provided the same information at the same time. Most importantly, leaders must demonstrate two-way communication skills by carefully listening to (and acting on) the concerns of all constituents.

- **Control:** Consolidation often fails because of organizational or personal ego issues. The tenets of leadership require that someone be in charge; but in the interest of greater good, some of those in leadership positions must agree to yield power. Some who are used to operating in a position of control may have trouble adjusting to new roles that require more collaboration. Personal sacrifice in the interest of community good may not always win out.

- **Culture:** Two schools of thought exist regarding organizational culture. The first camp views culture as implicit in social life, naturally emerging as individuals transform themselves into social groups (tribes, organizations, communities, and nations). The second camp offers that culture is comprised of distinct observable forms (language, use of symbols, customs, methods of problem solving, and design of work settings) that people create and use to confront the broader social environment. This second view is most widely used in the evaluation and management of organizational culture, but the first is no less important when considering bringing two discrete organizations into a closer relationship.

  The general characteristics of a fire department encourage the creation of a culture unique to that organization. The paramilitary structure, the reliance on teamwork, and the hazards of the work builds strong bonds between the members, who tend to share group behaviors, assumptions, beliefs, and values. Bringing multiple groups together with cultures formed through different experiences always results in a change to both organizational cultures. If the partnership is successful, no one culture will overcome the other—instead, a new culture will evolve from the two. If the organizational cultures are incompatible—well, frankly, the partnership will often fail.

Leaders must be aware of organizational culture and its role in the wellness of the agency's heart and soul. Early recognition by leadership of the importance of culture to the success of a partnership can help to overcome differences and build on strengths.

Guidance

- **Consult with service partners.** The elected officials (city councils) should begin a dialog with each other and with service partners and neighboring fire agencies regarding the proposed consolidation. Establish which agencies are likely to actively participate in reaching the goal.

- **Consult with legal counsel.** The councilors should consult with legal counsel regarding the statutory options and requirements for consolidation.

- **Joint adoption of a regional fire and EMS Vision.** The city councils of the seven cities should formally adopt a Regional Fire and EMS Vision.

- **Organize the Steering Committee.** The city councils instruct the committee to formulate and report on all elements of a consolidation plan. Establish leadership roles of the chair and other committee members. Create meeting guidelines and elect leadership. Set meeting dates and times. Review and adopt the work plan. Meetings

are ongoing, as is the review and revision of the work plan. Committee performs as a clearinghouse for all information concerning the effort so that service partners speak with a unified voice.

- **Name the consolidated department.** As an element of the work plan, the Steering Committee should establish a suitable name for the consolidated fire department. The name should reflect the identity of the whole protected area.

Other Possible Strategies: Discussion

With seven agencies in the study and given the geographic layout of the cities, many other possible combinations exist, assuming contiguity was necessary to achieve best efficiency in an operational consolidation. Even then, while contiguous borders are a typical factor in operational consolidations, they are not absolutely necessary. Even more possible combinations open up if contiguity is not an absolute.

Although there are a number of options available to the fire departments serving the study region, ESCI has determined that four operational consolidation variations were feasible. Three of the four options involved a combination of fewer than the seven fire departments. The only option found to have a high probability of being accomplished was the formation of a new organization involving all seven fire departments. The consolidation strategy along with detailed information regarding implementation and potential critical issues that must be addressed follow. ESCI chose to analyze what it considered to be the most likely strategy after reviewing our understanding of the political, cultural, and financial issues in the region.

As the process of discussion moves forward among elected officials, if it appears that there is sufficient political, operational, and community interest in a combination of agencies not demonstrated in this report, additional forecasting of operational efficiencies, operating costs, and capital costs could be performed relatively quickly.

Funding Alternatives

Prior to discussing alternative assessments, fees, or other increases to the current revenue stream, the policymakers of the study agencies should clearly define the level of community emergency service in measurable terms (commonly referred to as standards of cover). For example, standards of cover specify the service (fire protection), the quantity (a fire engine and four firefighters), the quality (within six minutes of dispatch), and the accuracy (85 percent of the time). Once service is defined in specific and measurable terms, the tasks of determining cost and the consideration of funding alternatives become more focused.

Potential funding alternatives can be grouped into two general categories: untapped revenues and redirected funds. Untapped revenue is represented by existing funding alternatives that are not fully used, like a tax increase or the implementation of a new tax, and by the identification of fees that do not fully recoup service cost. Redirected funds are existing revenue identified as not contributing toward the essential goals of the organization and, therefore, may be more efficiently allocated to other programs or functions.

Redirected Funds

There are essentially three methods that can be used to redirect public funding: 1) proving that money could be spent more effectively, 2) showing that a population or area is not receiving its fair share of service, and 3) changing a policy so that a program can access a funding stream that currently exists.[83] In order to redirect funding, leadership researches what funding is available, who controls the funding, what the policies are, and whether or not allocation patterns can be changed.

For the study region, this would involve altering the methodology for calculating the cost of serving the region. A formula for apportioning service cost may factor in assessed valuation, population, service demand, level of service, and area size. One option for leveling cost fluctuations is to employ a formula using multiple factors (population and assessed valuation, for instance). A more complete discussion of the principles of cost allocation is included later in this section.

Charitable Foundation

Forming a charitable foundation can provide a method for individual community members and business owners to make tax-deductible contributions to the fire department. Fire department foundations have been established in various other cities and fire districts for an assortment of purposes.[84] Some of the functions have been to provide:

- Humanitarian assistance to those who have been adversely affected by disaster, tragedy, injury, or other misfortune, and to work actively toward preventing or minimizing the impact of such misfortunes.
- Additional equipment and necessary upgrades to enhance emergency medical services, such as a bike medic program and the purchase of cardiac monitors and automated external defibrillators.

[83] *Sustainable Funding for Program Strategies*, Lessons Learned from an Ambitious Community Change Effort, June 2005, Urban Health Initiative, Seattle, WA.
[84] Fire departments with established charitable foundations include the City of Baltimore, MD; Tualatin Valley Fire & Rescue, Beaverton, OR; and Clackamas County Fire District No. 1, Milwaukie, OR.

- Financial resources to upgrade aging fire stations and facilities.
- Personal protective gear for firefighters and paramedics, self-contained breathing apparatus, and specialized training.
- Creation of an arson task force to improve investigation and prosecution of arson fires, and increase collaboration among local, state, and federal agencies.

Other endeavors for which charitable foundations have been involved consist of educational scholarships for students pursuing fire and EMS careers, programs to feed disadvantaged in the community, and bicycle safety helmets without cost.

Principles of Cost Allocation

Local governments provide services (such as fire protection) based on an assumption of public interest rather than the need for profitability, as in the private sector. Consequently, the limiting market forces of supply, demand, and price are not typically found at the forefront of policy decisions concerning fire protection. While elected officials may spend significant time and effort debating the overall cost of fire protection, it is very unusual that the point of service price is considered. In this light, it is not surprising that local governments find it difficult to establish a fair market price for essential services when entering into partnerships.

Usually when a single local government provides fire protection to its residents, that community bears the entire financial burden because of the presumption that everyone benefits from the service. In the case of municipalities, the full cost of the service may not be easily determined because administrative and support expenses are frequently borne by other municipal departments and not documented in the fire department's budget. It all works because individual users of the service are not charged; therefore, the real price of that service is never an issue. On the other hand, when two or more communities share in providing fire protection, elected officials must assure that each community assumes only its fair *pro rata* share of the cost, thereby fulfilling an obligation to act as stewards to the best interest of their respective constituencies.

However, while purely economic considerations may suggest that those who benefit from a service should pay in direct proportion to the level of benefit (the "benefits received" principle), social and political concerns may also enter into the price-setting process. For example, ESCI recently completed an evaluation of the fire protection system comprised of the City of John Day and the John Day Rural Fire Protection District located in eastern Oregon. The fire district provides no emergency service of its own, contracting instead with the city fire department for all

operations within the district's territory. The fire district compensates the city for a percentage of the fire department budget (minus certain budgetary transfers and any funds not spent during the previous year) equivalent to a rolling five-year average of district alarms compared to city alarms.

A close examination of the John Day fire protection system shows that if emergency response was no longer required by the fire district, the city's fire protection budget would not change appreciably. Said another way, city fire response to the district adds virtually no marginal cost to the city. Consequently, any money that the district can afford to pay for city fire protection is money that the city does not have to raise through other taxes or fees. Here, the benefits received principle is less a factor than is the principle of greatest public good. District residents pay what is essentially a discounted rate for fire protection; but without the district's contract, the city would be forced to cut services.[85] In this case, the John Day City Council finds it in the best interest of city taxpayers to provide fire protection outside of city boundaries at a rate that can be viewed as discounted to less than full cost.

It also happens that the John Day contract calls for fire response in the district to be equivalent to that in the city. While it is true that alarms in the district receive the same dispatch assignment of personnel and equipment, the realities of geography make it impossible for service in the district to be equal to that in the city. Response to district emergencies requires greater travel distances, which equate to longer response times, which lowers the presumed level of service. Given the deployment of resources in the system (one station, equipment, and personnel located in the center of the city), it is physically impossible to provide equivalent fire response to district residents.

It can be concluded, therefore, that the task of apportioning the cost of an allied fire protection system among partner agencies will likely require a fair amount of analysis and negotiation. The process should be approached with the recognition that any agreed-on allocation formula must fit the local situation, it should serve the best interests of the partners over the long-term, and everyone (especially the public) should easily understand it. It is also essential that the process be maintained completely transparent at the governance level. We generally advise clients to keep cost apportionment formulas fair, simple, and intuitively logical to assure that the

[85]City taxpayers pay a property tax equivalent of $1.072 per $1,000 of assessed value for fire protection. District taxpayers pay the equivalent of $0.843 per $1,000. Without contract income, city taxes would jump to $1.539 to maintain protection.

public accepts and supports the endeavor. Many other agencies have implemented cost allocation formulas for determining the amount of funding each participant will contribute.

Cost Allocation Options

What follows is an alphabetical listing of system variables that can be used (singly or in combination) to allocate cost between allied fire departments. Each option is summarized by the concept, its advantages and disadvantages, and other factors that should be considered. Regardless of the option(s) chosen to share the cost of fire protection, the resulting interlocal service agreement needs to address the issues of full cost versus marginal cost and should be clear about the inclusion of administrative or overhead cost. In addition, service contracts often must reconcile the exchange of in-kind services between the participating agencies.

Area

Concept: The cost of emergency service can be apportioned based on the geographic area served relative to the whole. For instance, the jurisdictional boundaries of the study municipalities represent about 75.1 square miles. The following figure displays the services area in square miles and the percentage for each city.

Figure 175: Cost Allocation by Service Area

Jurisdiction	Service Area in Square Miles	Percentage of Total
Bay Village	7.1	9.45%
Fairview Park	4.7	6.25%
Lakewood	6.7	8.93%
North Olmsted	11.6	15.45%
North Ridgeville	23.5	31.29%
Rocky River	5.6	7.45%
Westlake	15.9	21.18%
Total	**75.1**	**100.00%**

Apportionment founded on service area alone may work best in areas that are geographically and developmentally homogeneous.

Pro: Service area is easily calculable from a variety of sources. Size of service area is generally remains constant with few if any changes.

Con: Service area does not necessarily equate to greater risk or to greater workload.

Consider: Service area may be combined with other variables (such as assessed value and number of emergencies) to express a compound variable (such as assessed value per square mile and emergencies per square mile).

Assessed Value

Concept: The assessed value (AV) of municipalities is established by the local tax assessor under laws of the state. Usually, higher-valued structures and complexes carry a greater risk to the community from loss by fire; consequently, assessed value also tends to approximate the property at risk within a municipality. Fire departments are charged with being sufficiently prepared to prevent property loss by fire. Therefore, the cost of contracted fire protection may be apportioned relative to the assessed value of the allied jurisdictions. Typically, AV is used to apportion cost of shared service by applying the percentage of each partner's AV to the whole.

Figure 176: Cost Allocation by Assessed and Actual Value

Jurisdiction	Assessed Value	Percentage of Assessed Value	Actual Value	Percentage of Actual Value
Bay Village	$507,145,820	9.13%	$1,448,988,057	9.02%
Fairview Park	408,165,240	7.35%	1,166,186,400	7.26%
Lakewood	960,543,900	17.30%	2,744,411,143	17.08%
North Olmsted	910,324,211	16.39%	2,799,034,922	17.42%
North Ridgeville	682,070,410	12.28%	1,948,772,600	12.13%
Rocky River	714,739,290	12.87%	2,042,112,257	12.71%
Westlake	1,370,873,670	24.68%	3,916,781,914	24.38%
Total	**$5,553,862,541**	**100.00%**	**$16,066,287,293**	**100.00%**

For example, the 2008 AV of the City of Bay Village is listed as $507,145,820; the City of Fairview Park, $408,165,240. An apportionment of cost for the two cities based on AV would be 55.41 and 44.59 percent, respectively. A slight variation occurs if the actual value is applied to the formula.

Pro: AV is updated regularly helping to assure that adjustments for changes relative to new construction, annexation, and inflation are included. Because a third party (the auditor/assessor) establishes AV in accordance with state law, it is generally viewed as an impartial and fair measurement for cost apportionment. Fire protection is typically considered a *property-related service* and, thus, apportionment tied directly to property value has merit.

Con: AV may not reflect the property risk associated with certain exempt property, such as schools, universities, government facilities, churches, and institutions. AV may not always represent the life risk of certain properties, such as nursing homes or places of assembly, which might dictate more significant use of resources. In addition, some large facilities may seek economic development incentives through AV exemptions or reductions. Adjustments may need to be made to AV if such large tracts of exempt property in one jurisdiction cause an imbalance in the calculation. Last, AV typically includes the value of land, which is not usually at risk of loss by fire. Depending on the local circumstance, however, this may not be a significant factor if the relative proportion of land value to structure value is reasonably uniform over the whole of the territory.

Consider: Some states discount AV depending on the class of property (commercial or residential), which may skew the overall proportion of those properties compared to risk. This does not appear to be the case in Cuyahoga and Lorain Counties. As an additional consideration, county auditor/assessors usually establish the AV in accord with the property tax cycle, which can lag somewhat behind the budget cycle of local agencies and the time when service contracts are reviewed or negotiated.

Deployment

Concept: Payment for service based on the cost of meeting specific deployment goals. Deployment goals may be tied to the physical location of stations, equipment, and personnel (strategic deployment) or by stating the desired outcome of deployment (standards of cover). For example, a strategic goal could specify the location of two stations, two engines, and ten on-duty firefighters. A standard of cover might state the desired outcome of the same deployed resources as two engine companies and ten emergency workers on the scene of all structure fire emergencies within eight minutes 85 percent of the time. While both strategic and outcome goals can be used effectively to assist in allocating cost, ESCI views outcome goals to be more dynamically linked to the quality of service and therefore preferable to strategic goals. This alternative is highly variable due to the independent desires of each community in regard to outcome goals.

In order to present an example of how this type of funding alternative may be applied, ESCI developed a weighted scoring system that uses the region's critical task analysis discussed earlier in this report. This type of scoring system for each municipality allowed the ranking of

each area based on the assigned risk as well as the apparatus, manpower, and Needed Fire Flow (NFF).

Pro: Deployment is intuitively linked to the level of service. The outcome of deployment based on a standard of cover can be monitored continuously to assure compliance. Such deployment can be adjusted if standards are not met. This assures the continuous quality of emergency response throughout the life of a service contract.

Con: Strategic deployment may not equate to better service because such goals are prone to manipulation wherein resources may be sited more for political reasons and less for quality of service reasons. Outcome goals require common reporting points and the automatic time capture of dispatch and response activities to assure accuracy. Record-keeping needs to be meticulous to assure the accurate interpretation of emergency response outcomes.

Consider: Contracts for deployment-based fire protection should address the inclusion of administrative or overhead cost, as well as capital asset cost, depreciation, rent, and liability insurance.

Service Demand

Concept: Service demand may be used as an expression of the workload of a fire department or geographical area. Cost allocation based on emergencies would consider the total emergency response of the service area and apportion system cost relative to the percentage of emergencies occurring in the jurisdictions. ESCI was able to filter existing computer-aided dispatch data to determine the percentage of service demand within each municipality.

Pro: Easily expressed and understood. Changes in the workload over the long-term tend to mirror the amount of human activity (such as commerce, transportation, and recreation) in the corresponding area.

Con: Emergency response fluctuates from year to year depending on environmental and other factors not directly related to risk, which can cause dependent allocation to fluctuate as well. Further, the number of alarms may not be representative of actual workload; for example, one large emergency event requiring many emergency workers and lasting many hours or days versus another response lasting only minutes and resulting in no actual work. Last, emergency response is open to (intentional and/or unintentional) manipulation by selectively downgrading minor responses, by responding off the air, or by the use of mutual aid. Unintentional skewing

of response is most often found in volunteer fire systems, where dispatch and radio procedures may be imprecisely followed. Further, service demand does not follow a predetermined ratio to land area. As such, the service demand per square mile ratios may produce large variations.

Consider: Using a rolling average of alarms over several years can help to suppress the normal tendency for the year-to-year fluctuation of emergencies. Combining the number of emergencies with the number of emergency units and/or personnel required may help to align alarms with actual workload more closely; however, doing so adds to the complexity of documentation. In a similar manner (and if accurate documentation is maintained), the agencies could consider using the total time required on emergencies as an aid to establish the comparative workload represented by each jurisdictional area.

Fixed Rate

Concept: The use of fixed fees or rates (such as a percentage) to calculate allocation of shared cost is more common between municipalities and independent fire districts. Occasionally, fixed-rate contracts involve the exchange of in-kind services.

Pro: The concept is simple and straightforward. A menu of service options and the fees corresponding to those alternatives can be developed by the contractor agency. The contracting agencies can tailor a desired level of service based on risk and community expectation by choosing from the various menu items.

Con: Partnering communities may change (i.e., population, jobs, commerce, structures, and risk) at divergent rates, causing disconnection between the rationale used to establish the fee and the benefit received. A fixed-rate contract may be difficult to coherently link to the services provided and/or received, which can lead to a lack of support by officials and the community.

Consider: Partnering agencies need to assure that provision for rate adjustment is included in the agreement, including inflation. The agreement should address the issue of full cost versus marginal cost. The inclusion or non-inclusion of administrative and/or overhead cost also requires statement, as does the reconciliation of in-kind service exchange. The ownership and/or depreciation of capital assets should be addressed, as should rent, utilities, and liability insurance. In the case of a fixed fee, the agreement should establish how the participation of other public agencies in the partnership would affect cost.

Population

Concept: Payment for service can be based on the proportion of residential population to a given service area. The following figure lists the population by city and the percentage of the total number of individuals living in each service area.

Figure 177: Cost Allocation by Population

Jurisdiction	Population Served	Percentage of Population
Bay Village	16,087	8.08%
Fairview Park	17,572	8.82%
Lakewood	56,646	28.44%
North Olmsted	34,113	17.12%
North Ridgeville	22,338	11.21%
Rocky River	20,735	10.41%
Westlake	31,719	15.92%
Total	**199,210**	**100.00%**

Pro: Residential population is frequently used by governmental agencies to measure and evaluate programs. The U.S. Census Bureau maintains an easily accessible database of the population and demographics of cities, counties, and states. Estimates of population are updated regularly. Laypersons intuitively equate residential population to the workload of fire departments.[86]

Con: While census tracts for cities frequently follow municipal boundaries, this is not the case with fire district boundaries, forcing extrapolated estimates, which can fail to take into account pockets of concentrated population inside or outside of the fire district boundaries. Residential population does not include the daily and seasonal movement of a transient population caused by commerce, industry, transport, and recreation. Depending on the local situation, the transients coming in (or going out) of an area can be very significant, which can tend to skew community risk. Residential population does not statistically link with emergency workload; rather, human activities tend to be the linchpin that connects people to requests for emergency assistance.

For example, if residential population actually determined emergency workload, emergencies would peak when population was highest within a geographic area. However, in many communities where the residential population is highest from about midnight to about 6:00 a.m.

[86] The average citizen may easily associate population to emergency workload, but no statistical link can be made between the two.

(bedroom communities), that time is exactly when the demand for emergency response is lowest. It turns out that emergency demand is highest when people are involved in the activities of daily life — traveling, working, shopping, and recreating. Often, the persons involved in such activities do not reside in the same area.

Consider: The residential population of unincorporated areas can sometimes be estimated by using the GIS mapping capability now maintained by most counties and municipalities. By counting the residential households within the area in question, then applying demographic estimates of persons per household, it may be possible to reach a relatively accurate estimate of population within the area in question. Alternately, residential population can be estimated by using information obtainable from some public utility districts by tallying residential electrical meters within a geographic area and then multiplying by the persons per household.

Some areas experience a daily or seasonal influx of people who are not counted as residential population. This transient population can be estimated by referring to traffic counts, jobs data, hotel/motel occupancy rates, and, in some cases, state or national park administrators. Residential population plus transient population is referred to as *functional population*. Where functional population is significantly different from residential population, service agreements based on population should be adjusted to account for it.

The study area is unique in that considerable transient population may be present depending on the season or special events taking place. Basing cost allocation only on residential population may seem to disregard the effect of these transient populations on the regional emergency services system, but ESCI believes that the nature of transient populations and the character of the region result in a nearly equal impact on each of the jurisdictions. Visitors to the region tend to move in and through all study agencies. ESCI believes that the fact that transient populations shift in this manner negates any disproportionate impact on the fire departments, creating instead a *background* effect that need not be considered for the purpose of apportionment.

Multiple-Variable Allocation

Frequently, even though everyone may agree on the benefit of allied fire protection, officials find it difficult to reach an accord on the cost. The differences between community demographics and/or development, along with changes that occur within the system over the long term, can cause the perception of winners and losers. This can be especially prevalent when a single

variable is used to apportion cost. A service contract based on more than one allocation determinate may help solve these problems.

For example, ESCI is familiar with a 9-1-1 dispatch center in Oregon that serves more than 20 fire agencies of all sizes and types—large, small, metropolitan, and rural; on-duty career and on-call volunteer. Here, the service contract includes three determinates applied to each agency.

- **Base charge** — Ten percent of the dispatch center's budget is divided equally between all agencies. This charge is based on the acknowledgement that each agency is equally responsible to maintain the dispatch center on continuous stand-by, irrespective of size of the agency or its use of the dispatch services.
- **Usage charge** — 45 percent of the dispatch center's budget is divided between the agencies in accordance with the number of emergency dispatches made for each during the preceding year. The member agencies determined that this charge fairly assesses the overall use of the 9-1-1 dispatch system by each.
- **Risk charge** — 45 percent of the dispatch center's budget is divided between the agencies in accordance with the relative percentage of each department's AV. The member agencies determined that this charge is relational to each department's community risk and that it is closely associated with the overall ability to pay.

By apportioning the dispatch center cost over three variables, the members of this alliance have been able to reach a long-term agreement that fits the diversity of the partnering agencies. Other partnerships in other geographical areas may require a different solution involving different combinations of variables. In summary, we restate something said earlier — when choosing a cost-sharing strategy for partnered fire protection, it is important to keep any apportionment formula fair, simple, and intuitively logical to assure that the public accepts and supports the endeavor.

Allocation Summary

The information provided previously serves as a detail of each funding alternative presented. Given the lengthy discussion provided with each alternative, ESCI has compiled the information into a summary table illustrating how each funding alternative would be distributed among the study municipalities. In addition to the individual funding alternatives, several multiple-variable scenarios are also provided as an example of how this type of methodology can be applied and modified.

Figure 178: Summary of Cost Allocation Factors – 2009

Jurisdiction	Area	Assessed Value	Facility Deployment	Service Demand	Population
Bay Village	9.45%	9.13%	10.00%	5.28%	8.08%
Fairview Park	6.25%	7.35%	10.00%	6.91%	8.82%
Lakewood	8.93%	17.30%	16.67%	29.97%	28.44%
North Olmsted	15.45%	16.39%	11.67%	11.28%	16.06%
North Ridgeville	31.29%	12.28%	15.00%	16.06%	11.90%
Rocky River	7.45%	12.87%	21.67%	29.97%	11.28%
Westlake	21.18%	24.68%	15.00%	11.90%	18.60%

The following figure shows the three multiple cost allocations by variable and weight of percentage of apportionment.

Figure 179: Multiple-Variable Cost Allocation Models

Multiple Variable – Weight by Percentage	
Multiple Variable No. 1	
Area	0%
Assessed Value	50%
Deployment	15%
Service Demand	20%
Population	15%
Total	**100%**
Multiple Variable No. 2	
Area	5%
Assessed Value	75%
Deployment	5%
Service Demand	5%
Population	10%
Total	**100%**
Multiple Variable No. 3	
Area	10%
Assessed Value	25%
Deployment	25%
Service Demand	15%
Population	25%
Total	**100%**

Functional Cooperative Effort Strategies

The formation of an interlocal service agreement or other cooperative efforts fails for many of the same reasons as a legal merger. As with the creation of a fire district, sometimes law prohibits the idea at the outset and other times the proposal may be doomed by the unfavorable outcome of a public election or the reality of finance. These issues aside, however, the same four major pitfalls of cooperative effort that were discussed in the previous strategy presented in this report can also cause even the most feasible regional oversight strategy to go wrong.

A – Develop a Joint Support and Logistics Services Division

Level of Cooperation

- Functional

Timeline for Completion

- Long Term

Section

- Support Services

Affected Stakeholders

- All Agencies

Objective

- Develop a joint Support Services Division that promotes improved operational readiness and achieves procurement efficiencies by eliminating duplication in the acquisition and distribution of supplies.
- Create a uniform set of standards for apparatus, small equipment, PPE (personal protective equipment), emergency supplies, and IS/IT services.
- Develop a joint preventative maintenance and repair service program for physical assets, apparatus, small equipment, and IS/IT systems.

Summary

Throughout nearly every public or private emergency preparedness institution, the state of readiness and effectiveness is highly dependent upon support services. Support services assure the materials necessary to keep an agency operational and functioning are available. Each department participating in this study (whether large or small) provides some form of support services within its organization. Support services offered under a joint support and logistics division can be modular and may include:

- Standardization of apparatus, equipment, and PPE.

- Standardization of fire/EMS/rescue supplies.
- Centralized purchasing and distribution.
- Centralized fleet and equipment maintenance.
- Mobile maintenance services.
- A preventative and safety maintenance program for facilities, apparatus, equipment, and other physical assets.

The purchasing program can create joint bids for supplies and equipment and can achieve additional benefits such as integrated inventory of supplies that can accommodate lag times in deliveries from manufacturers and suppliers.

Discussion

Support Services Division – At the heart of any fire department are the activities and functions that support the delivery of emergency services. Support services keep agency assets in operational readiness and ensure that enough supplies, tools, and equipment are available for emergency workers to mitigate the emergency. Every agency in this study dedicates a certain level of daily effort in maintaining emergency apparatus and equipment.

Although all of the study departments are emergency services providers, they are also businesses that spend tens of thousands of dollars each year to ensure emergency mission readiness. Like all businesses, fire departments need to be receptive to new practices to maximize the effectiveness of budget dollars. Such practices may take the form of economies of scale, administrative efficiencies, paperwork reduction, technological advances, and innovative cost saving concepts.

Acquiring and maintaining physical assets (facilities and grounds), IS/IT systems, vehicles, and equipment is a labor intensive process requiring good policies and attention to detail. The procurement and distribution of routine supplies is also an important behind-the-scenes process that needs hands-on work and meticulous record keeping. Because of the variety and size of the participating fire departments, these support services are currently provided by a variety of full-time, part-time, and/or suppression employees. In all cases, filling the demand for support services is a constant necessity in any organization and vital to ensure the operational readiness of the agency.

Key elements of a joint support and logistics services division are:

- Assessment of current assets.
- Assessment of current levels of support service activities.
- Standardization of apparatus, equipment, and supplies.
- Standardizing preventative maintenance programs and recordkeeping.
- Centralization of apparatus and equipment repair and maintenance.
- Provisions for mobile repair and maintenance services during emergency incidents.
- Centralization of supply and equipment acquisition and distribution.
- Development of a facilities and grounds maintenance program.
- Standardization of IS/IT services.

As listed above, a key to realizing the benefits of shared support services is standardization of apparatus, equipment, and supplies. In this exercise alone, standardization assures greater financial and operational efficiency and effectiveness. Fundamentally, this is the most important aspect of forming a joint support division.

Standardizing specifications for the purchase, repair, and maintenance of apparatus, SCBA (self-contained breathing apparatus), communication devices, and miscellaneous equipment often equates to less out-of-service time. Support personnel will need to be certified for repairing and maintaining fewer apparatus and equipment types. Fewer parts need to be stocked for repair and maintenance. Such practices are described as "economies of scale."

NFPA 1911 points out that repairs by qualified technicians may provide longer apparatus life, safer operations, and the early detection of maintenance and repair problems.[87] The result is often a short and long-term saving on rolling stock and small equipment. A centralized repair and maintenance facility cooperatively organized as a support services division ensures that routine maintenance and repairs of physical assets are completed in a timely manner. Maintaining public assets in this way is a demonstration of stewardship.

[87] National Fire Protection Association, *Standard 1911: Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus*, 2007 Edition.

The standardization of apparatus, equipment, and supplies plays strongly into the overall effectiveness and efficiency of daily emergency operations. Standardized support functions are a key part of unified emergency operations and response – especially when equipment from multiple Westshore fire departments work together at large-scale emergencies.

Logistics Services – A multi-agency purchasing program could improve management of the agencies' supply chains. In theory, the agencies would collectively create or contract for a logistics center to manage procurement and distribution. The logistics center would work with each of the agencies to standardize supplies and equipment. The program would follow state and organizational purchasing guidelines and make supplies and equipment available to all of the member agencies.

Distribution can be managed internally or through agreements with suppliers to gain the advantages of collective purchasing and supply: 1) a larger, collective bid process for supplies can achieve lower prices and attract additional competitors; 2) the logistics center can negotiate terms of the conditions of the sale that might not be available to smaller purchasing centers; and 3) it can conduct collective bidding processes that are applicable to all of the agencies.

Coordination is important to the success of a joint purchasing program. Each of the agencies currently conducts purchasing of virtually all supplies and equipment independently. As such, a joint effort will reduce the work required by any single agency to provide purchase and provide supplies.

Critical Issues

- Coordination issues
  - A cross-functional committee of system purchasing agents and EMS system participants can work together to design purchasing rules for each agency.
  - The committee can provide a standardized equipment list for the agencies. The agencies can share bidding processes so that the bidding procedure used by the purchasing agent can be used by all agencies.
  - Agencies must work closely with the cross-functional committee to ensure that the goods are received and distributed to the appropriate location.
  - Fire agencies should have agreements in place to specify inventory and purchasing plans.

- Receiving and distribution considerations
  - Fire agency partners should design distribution plans to deliver goods directly to the appropriate location. Using a joint purchasing system, the agencies will no longer have to receive goods at the agency; instead, they can receive goods at the appropriate station or ambulance location.
  - The agencies can jointly determine the proper level of inventory to maintain within the system. The use of system-wide inventory planning ensures that the most cost-effective inventory management can be established for the system participants.
- Financial and fiscal considerations
  - Marginal costs of creating system-wide purchasing infrastructure should be compared against the reduced level of effort of individual agencies.
  - Cost savings can be achieved through reducing inventory carrying costs, reducing transaction costs, and achieving economies of scale through larger volume purchasing.
  - The participating agencies should agree on contributions to account for more difficult to discern costs such as freight charges and unit costs for warehousing space.

Guidance

- Develop a system-wide, cross-functional committee to explore a joint purchasing process.
- Work with elected officials to adopt purchasing requirements that help the agencies meet purchasing goals and guidelines.
- Establish standards for fire and EMS system equipment and supplies.
- Establish inventory standards and methods for distributing equipment and supplies.
- Develop specific standards for apparatus, equipment, PPE, SCBA, communication equipment, and supplies.
- Inventory and evaluate current physical assets, apparatus, equipment, and operational/facility supplies.
- Contract for or align agencies to provide logistics and supply services.
- Evaluate other cooperative support service programs throughout the area.
- Determine support components that would best benefit all departments immediately and long term for program expansion.
- Evaluate current levels of support functions and identify successful elements to incorporate into the joint program.
- Create PLLs (prescribed load list) for apparatus (sometimes referred to as an ASL or (authorized stockage list).

- Ensure that all aspects of a joint support division are based upon recognized local, state, and national standards as well as manufacturers' recommendations for repair and maintenance.

- Determine the most efficient and effective location for support functions. This may include multiple facilities that are strategically located.

- Develop a mobile maintenance/repair program.

- Evaluate value in outsourcing of support services.

Fiscal Considerations

- Financial support may be necessary, as agencies will be required to meet the costs of creating or modifying existing logistic systems.

- The soft costs generated by cross-functional committee meetings necessary to accomplish objectives of the program.

- New, additional, or reassignment of FTEs to operate support service functions.

- Incremental costs of transitioning to standard apparatus, PPE (Personal Protective Equipment), SCBA (Self-Contained Breathing Apparatus), and small equipment.

- Conversion of existing facility or acquisition of real property for a logistics, support services, and maintenance center.

- Expected cost savings and operational benefits will result from:

    - Elimination of duplication of services, administration, training, supplies, parts, and equipment.

    - Standardization of equipment, parts and operational/facility supplies.

    - Effective acquisition, accountability, and distribution of supplies and equipment.

    - Bulk purchasing.

    - Preventive maintenance of physical assets, apparatus, and equipment for optimum safety and readiness.

    - The elimination or reduction of "outside" costs for repair, maintenance, and servicing of physical assets and equipment.

B – Develop a Regional Fire Safety Education Coalition

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Fire Prevention

Affected Stakeholders

- All Agencies

Objective

- Provide for the cost effective, regional dissemination of public fire safety education.

Summary

Preventing fires is known to be far more cost effective than extinguishing them. One widely recognized and very successful method of preventing fires is through a multi-faceted public fire safety education program.

Discussion

Successful public education programs use a range of communication methods, many of which cannot be limited to a specific geopolitical boundary. Television and radio, for instance, are regional media that over-arch jurisdictional limits delivering information to citizens in a wide variety of communities. For fire safety campaigns to be most effective, each must be designed to target a specific audience and each must be crafted for the means of delivery.

Creation of a regional public education coalition will help to standardize fire safety messages across the region and work to reach more of the target audience. This, in turn, will allow for reduced cost to each agency through sharing while improving the quality of programs in those communities with few or no public education resources. Costs can also be reduced through quantity purchasing of handouts and other public education materials. Increased training can be made available to the public education staff, engine company crews, and others to enhance the quality of the fire prevention effort in those communities now lacking such programs.

Guidance

- Formalize the creation of the coalition through a written agreement.
- Involve others from outside the area and from non-traditional groups (insurance industry, educators, Ohio State Fire Marshal, media).
- Create standardized messages that can be used across the county.
- Learn from others. Model the coalition after other successful regional public fire safety education programs.

Fiscal Considerations

- The elimination of duplicated staff effort in the creation and distribution of public fire safety education messages reduces soft costs.
- Cost savings can be achieved through group purchasing of materials and other media.
- Departments currently without a presence in public education efforts would see a cost increase.

C – Develop a Regional Juvenile Fire Setter Intervention Network

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Fire Prevention

Affected Stakeholders

- All Agencies

Objective

- Provide an effective means for intervening in juvenile-set/caused fires.

Summary

Statistical analysis nationwide clearly demonstrates the growing problem of juvenile fire setting. While fires set by juveniles have always been a problem, fire cause determination and fire data reporting systems have not always been adequate to identify the extent of the phenomenon. Many jurisdictions simply do not realize the extent of juvenile-set fires in their community.

The lack of involvement by the fire departments, law enforcement agencies, mental health professionals, schools, juvenile court, and other affected interests throughout the region limits the effectiveness of the overall fire prevention efforts of the individual departments.

Discussion

The establishment of an effective, multi-discipline, multi-agency Juvenile Fire Setter Intervention (JFSI) Network will allow shared expertise, services, knowledge, and (most importantly) information to the benefit of all agencies and communities. A network of trained professionals from all the needed disciplines, working together, allows for more accurate assessment of individual fire setters to determine the nature and depth of intervention required. A regional program also:

- Allows for sharing the workload between agencies.
- Facilitates appropriate referral to professional services when needed.
- Makes possible effective prosecution on those few occasions when juvenile-set fires are verified as arson.

Guidance

- Develop a regional program modeled on already established and successful JFSI networks.
- Include all the needed professional disciplines.
- Provide important, on-going training.
- Involve only those fire agency personnel who desire to participate.
- Formally organize the structure of the network for long-term sustainability.

Fiscal Considerations

- Reduced fire loss to the community through reduction in juvenile-caused fires.
- Potential increased training requirement and cost.
- Potential overtime for training and for intervention.

D – Create a Unified Occupational Medicine Program

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Administration

Affected Stakeholders

- All Agencies

Objective

- Provide a fire-service related occupational and health program.

Summary

A single method and source for providing occupational and health services may provide savings through economies of scale. *NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs*, provides the minimum requirements for a fire-service related occupational safety and health program.[88] Along with *NFPA 1500*, *NFPA 1582*, the *Standard on Comprehensive Occupational Medicine Programs for Fire Departments*, and related documents, provide guidance for the creation of occupational health programs and for establishing medical requirements for current and future firefighters.

Discussion

There is a need for all fire departments to have access to a group of professionals with expertise in the occupational medicine field. Occupational medicine is dedicated to promoting and protecting the health of workers through preventive services, clinical care, research, and educational programs. One aspect of a program is keeping up to date with health and safety regulations, standards, and current practices. Occupational medicine specialists review current practices to see if the agencies meet new regulations, make modifications if needed, and assist the departments in adopting any changes.

The importance of employee health and welfare and the potential liability associated with the lack of such programs necessitates that fire departments establish close professional

[88] National Fire Protection Association, *Standard 1500: Standard on Fire Department Occupational Safety and Health Program*, 2007 Edition.

relationships with occupational medicine specialists to assure that emergency workers are protected by the most up-to-date occupational health and safety programs possible.

Occupational safety and health programs (sometimes referred to as Industrial Medicine) vary in depth, form, and delivery. A fire department may employ a physician full time, contract with a provider organization, or conduct part of a program in-house while contracting for the remaining services. Any number of hospitals or medical centers in the greater Cleveland area has programs that may meet the needs of the regional agencies.

One such occupational medicine program that ESCI is familiar with uses the fire department wellness coordinator to conduct audiometric, spirometric, and vision screenings before personnel complete their annual physical evaluation. The occupational medicine provider then conducts blood draws at individual fire stations. Consequently, at the time of the medical physical the physician has at his/her disposal not only the firefighter's historical but also current medical screening records.

The medical physical, stress test, and all other components of the evaluation are done as part of the fire department's regular training rotation at a regional training center. Through a professional relationship developed with a medical service provider over several years, the fire department in this example was able to receive this level of service at a very competitive price.

The legal requirements for a fire department occupational safety and health program have been established. How a fire department administers and supports the program determines the success and the resultant benefit. In the example, the department previously had to hire extra staff or pay employees overtime to take annual medical physicals. The occupational medical program resulted in the saving of more than $15,000 through reduced overtime cost; however, some funding is still required for medical follow-ups and for employees not able to meet the schedule.

An additional advantage of using a local occupational safety and health provider is the ability to quickly evaluate and treat non-threatening injuries suffered by employees.

Guidance

- Determine required and desired specifications for an occupational safety and health program.
- Create a single personnel policy for occupational safety and health.

- Develop a request for proposals (RFP) for soliciting vendors to supply occupational safety and health services.

- Investigate the purchase of audiometric, spirometric, and vision testing equipment for use in conducting in-house medical evaluations. This should include the certification of personnel to conduct the testing.

- Conduct baseline testing for firefighters without previous audio and lung function baseline records.

Fiscal Considerations

- The purchase of a single set of testing equipment for audiometric, spirometric, and vision screening requires a capital outlay of approximately $15,000. Classes for training and certification in audiometry and spirometry average $1,000 per class, exclusive of salary.

- Occupational medicine programs are often menu driven. Items selected for inclusion in the program determine the final cost. Additional financial factors involve whether the fire departments elect to exceed mandated requirements, perform some of the occupational medicine functions internally, or consolidate the occupational medicine program with interrelated programs. Interrelating programs that share functions include wellness, infectious disease, FIT testing, EMS, and hazardous materials.

E – Create a Unified Wellness and Fitness Program

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Administration

Affected Stakeholders

- All Agencies

Objective

- Provide a wellness and fitness program that promotes the improved health and well-being of personnel in all divisions and at all ranks.
- Increase fitness levels and decrease injuries.
- Reduce frequency and number of sick/sick injury incidents.
- Reduce the number of days used for sick/sick injury leave.

Summary

Wellness and fitness programs have proven beneficial to employers and employees alike. Onsite visits by licensed wellness experts are part of an all-inclusive program. Services offered under a comprehensive wellness program may include:

- Wellness screening
- Health coaching
- Wellness and fitness educational materials
- Support groups
- Presentations
- Fitness evaluations
- Newsletters
- Nutritional information
- Health risk assessment
- Fitness training

Discussion

The benefits of wellness and fitness programs have, in some instances, been quantified anecdotally without specific documentation. Documented individual incidents and case studies over a longer period of time have now yielded conclusive data as to their benefits. Two case studies are used here to illustrate this point.

First, during an annual visit for his medical and fitness evaluation, a battalion chief with the Indianapolis, Indiana, fire department was found to have an abnormal heart rhythm. He had considered himself to be in excellent condition, competing in track and field events since 1996. He was immediately removed from duty and sent to a cardiologist for a heart catheterization. He was diagnosed with severe blockages in four coronary arteries. Within two days of his medical evaluation, he underwent quadruple bypass surgery. His cardiologist told him he wouldn't have lived another two weeks without intervention. Remarkably, the battalion chief returned to work and was back exercising within six weeks of surgery. The father of four and grandfather of two is thankful to be alive, attributing his good fortune to the IAFF/IAFC Wellness and Fitness Initiative.

The second example involves a mid-sized fire department employing both career and volunteer personnel. The department was in need of a fitness/wellness program and subsequently contracted with Oregon Health Sciences University to provide an evidence-based program custom tailored for its diverse group of firefighters. The primary goals of the program were to "increase fitness levels and decrease injuries." Results of the study spanning seven years conducted by OHSU Health Management Services included these findings:

- Greater than 30 percent increase in the number of participants.
- A decrease in average total cholesterol.
- A decrease in average LDL cholesterol from 130 to 120.
- Participants with BP in the high normal range or above dropped from 18.3 percent to 8.5 percent.
- Participants with moderate or high coronary risk dropped from 61.7 percent to 35.4 percent.
- Participants with an overall wellness score of good or excellent increased from 41.7 percent to 58.5 percent.
- Annual number of days lost (workers compensation days) dropped from a high of nearly 300 days to below 50 days. During the study period, the fire department increased the number of career personnel two-fold.

Guidance

- Determine the components of a wellness and fitness program that would best benefit all departments.
- Involve a broad cross section of employees in the development process.
- Investigate multiple programs and providers for best fit.
- Coordinate activities with established fitness and safety committees.
- Train in-house peer fitness trainer/coaches.
- Incorporate wellness and fitness services as an element of recruit academies.
- Include volunteers, staff, and support personnel in wellness and fitness services.
- Provide initial and recurring wellness education to personnel.
- Provide a newsletter (paper or virtual) for all personnel.
- Incorporate wellness in training sessions.
- Provide for a periodic appraisal of the wellness and fitness program.

Fiscal Considerations

- The cost per employee of a wellness and fitness program can vary widely. An annual per employee cost may range from as low as $25 to as high as $100 depending on many factors, such as:
  - Frequency of employee contact
  - Range of services desired
  - Equipment need
  - Inclusion of ancillary offerings (newsletter, peer fitness coach training)
- The soft costs associated with on-duty time required for wellness and fitness instruction need to be addressed before carrying out a plan.
- Potential cost savings may result from:
  - Reduced work related injury leave days
  - Reduced sick leave usage
  - Reduction in medical benefits used
  - Improvement in employee fitness and morale

F – Adopt and Implement a Computerized Training Records Management System

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Training

Affected Stakeholders

- All Agencies

Objective

- Provide a fully integrated comprehensive training records management system (RMS).

Summary

Computerized RMS provides for ease of data entry, retention, and accessibility. RMS is designed to provide comprehensive information regarding an individual, company, station, shift, and department training status. All RMS are designed to query records and generate a variety of user-defined reports.

Each of the participating fire departments unilaterally selected RMS for their departments, resulting in a diversity of products. Although departments attempt to make good use of their systems' capabilities, no agency takes full advantage of RMS capabilities. *NFPA 1401*, *Recommended Practice for Fire Service Training Reports and Records*, provides standards for record keeping systems. *NFPA 1401* presents a systematic approach to providing essential information for managing the training function of the fire service organization. It includes the types of records, reports, and forms that can service as basic information tools for effective training administration. It also provides recommended practices related to computerization of records and reports and the legal aspects of record keeping.

Discussion

An assortment of factors, including a lack of support, the time to become proficient with the software, and software limitations, frustrate and prevent users from fully using RMS. The use of a standard RMS throughout the region would rectify the ineffectiveness that presently exists.

With a regional RMS, one administrative staff person would work collectively with all users to instruct, maintain, and troubleshoot the system. The ability to use the system to its maximum potential and to retain and generate meaningful reports is improved. An environment is created for system users to share knowledge, experience, and assist one another in problem resolution.

Vacations, overtime work, rotating shift schedules, and normal absenteeism make training schedules very difficult to manage. The ability to cooperatively track and assess training information would foster the development of a unified training manual and an annual training plan. Future enterprises may benefit from a single RMS, including recruit training, career development, in-service, officer, and specialized training programs. An RMS for training will aid department/division heads in budget planning, training delivery, and with resource and risk management.

Guidance

- Establish a work group including at least one training representative from each department.
  - Identify system requirements and needs of involved departments.
  - Evaluate the RMS currently used by each department, including justification for their use.
  - Evaluate other available RMS systems.
  - Select an RMS that most adequately satisfies mutual requirements, needs, and budget.
- Each department should share in the cost of an individual to administer and manage the training RMS, including:
  - Training RMS management.
  - Oversight of hardware and software installation.
  - Providing for the initial and on-going RMS training for end users.
- Determine server requirements for training RMS.
- Use existing or establish an Intranet or Internet network.
- Provide for RMS maintenance and troubleshooting services.
- Acquire technical assistance for RMS programming.
- Provide for a periodic appraisal of the RMS.

Fiscal Considerations

- A reduction in duplicated effort (reduces soft costs) in acquiring, learning, and maintaining, individual systems.
- Economies of scale in the collective purchase, use, and maintenance of a single RMS.
- Cost to purchase, administer, maintain, or modify existing network.
- Personnel costs associated with RMS committee, training, and implementation.

G – Develop and Adopt Common Training Standards

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Training

Affected Stakeholders

- All Agencies

Objective

- Adopt uniform training guidelines.
- Adopt uniform certification standards.

Summary

Training standards provide the benchmark for training. They define and specify the quantity and quality of training for achieving levels of competency and certification. Certain standards are mandated by governing or regulating agencies such as OSHA (Occupational Safety and Health Administration). Others are considered industry standards developed by organizations like the National Fire Protection Association (NFPA). Occasionally, locally developed standards are adopted to address circumstances unique to that area. Private vendor standards and certifications are often applicable to specialized training. Training records should consist of:

- Daily training records
- Company training records
- Individual training records
- An inventory of equipment assigned to the training department
- A complete reference library

Discussion

By collectively adopting a set of training standards (IFSTA, for example), all participating departments are foundationally prepared to move forward with an RMS. The adoption of standards would provide uniformity throughout the training delivery system and would improve inter-agency compatibility. It would further simplify development of a regional training manual,

annual training plan, and data entry and retrieval of computerized training records. Adoption will provide for uniformly trained and certified responders and will assure increased emergency scene compatibility, efficiency, effectiveness, personnel confidence, and safety.

Guidance

- Establish a work group including at least one training representative from each participating department.
  - Identify mandated training standards affecting all departments.
  - Assess all other standards currently used by the fire departments, including rationale for their use.
  - Consider any unique local issues.
  - Develop a process for the adoption of regional training standards.
  - Adopt training standards to which all county departments will adhere.
  - Provide for continuous review and updating of training standards.
- Educate personnel on the purpose and application of the standards.
- Provide for continual use of training standards throughout the training delivery system.
- Maintain standards in a readily available format.
- Provide for frequent evaluation and updating of training standards.
- Address and resolve personnel certification issues (address through reciprocity) created by new standards and certifications.

Fiscal Considerations

- A reduction in duplicated staff effort (reduces soft costs) and training staff to develop similar but separate programs based on the same or differing standards.
- A potential for reduced specialized training costs through a larger pool of personnel.
- Responders trained to the same standard provide a more cohesive workforce, increasing efficiencies.

H – Create a Regional Training Manual

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Training

Affected Stakeholders

- All Agencies

Objective

- Provide consistent, standardized training procedures.

Summary

Fire department instructors use manuals based on national, state, and local standards as a resource to develop lesson plans for classroom and field training. Training sessions provide students with the knowledge, skills, and abilities to perform in emergency and non-emergency situations. The departments participating in this study should cooperatively develop a training manual for adoption by all agencies.

Discussion

Until now, each participating fire department unilaterally selected training materials from a variety of options. Not surprisingly, training and performance varied across the region. The creation and use of a standard training manual will provide for more consistent training, better on-scene coordination, and improved firefighter safety.

As the firefighters of each agency are trained in the same procedures, each can respond to an emergency with the confidence that all responders are prepared to work effectively as a team. This will improve the willingness of firefighters from different departments to work together as a coordinated emergency workforce. Standardized training procedures improve on-scene safety, efficiency, and effectiveness.

Care should be exercised to prevent the development process from taking too long. To expedite progress, we recommend adopting material from existing model training manuals, hose evolutions, and standard operating guidelines. A resource for obtaining material can be

found through the WFCA (Western Fire Chiefs Association), Ohio State Fire Marshal, and the National Fire Academy.[89]

Model fire department training material is readily available through non-profit organizations and private companies. Sources for commercially available training material include the Fire Department Training Network (FDTN), Thomson DelMar, and Oklahoma State University. The International Fire Service Training Association (IFSTA, through Oklahoma State University) and Fire Protection Publications (FPP) have been longstanding producers of training manuals, course curricula, and audiovisual aids for fire departments.

- NFPA recommended practices and standards can also assist with the development of the training manual. Relevant standards include:
- *NFPA 1401, Recommended Practice for Fire Service Training Reports and Records*
- *NFPA 1403, Standard on Live Fire Training Evolutions*
- *NFPA 1404, Standard for Fire Service Respiratory Protection Training*
- *NFPA 1410, Standard on Training for Initial Emergency Scene Operations*
- *NFPA 1451, Standard for a Fire Service Vehicle Operations Training Program*

The need for training of personnel with specialized duties should be included in the regional training manual.

Guidance

- Establish and maintain a user group that meets regularly.
  - Include at least one training representative from each department.
- Develop and adopt a single training manual.
- Place the training manual in electronic format for easier updating and to allow access by firefighters.
- Provide for coordinated training of all agencies.
- Provide for regularly scheduled multi-agency drills.
- Provide for a regular evaluation and review of the training manual for applicability to pertinent laws, industry standards, and regional standard operating guidelines.

89 Western Fire Chiefs Association, National Fire Service Library, www.wfca.com, Department of Homeland Security, Federal Emergency Management Agency, U.S. Fire Administration, National Fire Academy, Training and Education.

- Seek out existing procedures for use in development of the regional training manual.

Fiscal Considerations

- The elimination of duplicated staff effort (reduces soft costs) in the selection, development, and updating of separate training manuals.

- Instructional time is likely impacted during multi-agency training sessions by reducing or eliminating the time devoted to adaptive or remedial training.

- An emergency workforce trained under a cooperative system is more efficient and effective in reducing property damage and loss during emergency incidents.

- A workforce trained to operate under universal standards will experience fewer emergency scene injuries.

I – Implement and Cooperatively Use a Video Conferencing System

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Training

Affected Stakeholders

- All Agencies

Objectives

- Provide standardized, consistent, and high-quality classroom training.
- Reduce training staff hours required for curriculum development and delivery.
- Increase in-service time of emergency response apparatus.

Summary

The ability to connect all fire stations in the Westshore region with interactive video conferencing would allow for a more efficient delivery of didactic training. This type of system is designed to increase training delivery efficiency and shared training capabilities. North Ridgeville already enjoys this type of training delivery and the system could feasibly be expanded to all other regional departments. This system could potentially be used to supplant or deliver training by the participating departments.

Discussion

The Ohio Department of Public Safety is responsible for firefighter training and certification and is also responsible for the certified firefighter training centers.

Following certification, a large degree of continuing education, training, and skill development is conducted at the local level. The training of new employees, continuing education, and the specialized training within each of the participating fire departments varies considerably; yet, all of the agencies share the same or similar training needs. All must provide for training on:

- Infectious diseases
- Blood and airborne pathogens
- SCBA (self-contained breathing apparatus) and respiratory protection

- ICS (incident command system)
- Hazardous materials
- CPR (cardio-pulmonary resuscitation)
- Safety
- Confined space
- Wildland refresher training
- Harassment

Evaluations of individual fire department training programs noted that the delivery, quality, and level to which required training is satisfied vary widely. Factors that influence this include:

- Available training staff.
- Staff time is often divided between job functions, balancing training versus non-training priorities.
- Level of interest and commitment of individual trainers.
- Access to and availability of training facilities and equipment.
- Ability of on-duty personnel to attend training sessions.
- Availability of replacement crews for personnel attending training.
- Interruptions for emergency responses.

The opportunity exists for the study fire departments to address many of these issues by the implementation and cooperative use of a video conferencing system. Cooperative use of the system will likely:

- Increase compliance with annual training and competency requirements.
- Improve efficiencies at emergency scenes for individual departments and during multi-agency operations.
- Increase training staff productivity through a reduction in curriculum development and delivery time.

Guidance

- Establish and maintain a user group with one representative from each department.
    - Schedule regular training meetings.

  - Identify common and individual department training needs.
  - Identify and solve mutual training delivery problems.
  - Adopt common training standards.
  - Coordinate the development, distribution, and delivery of training by assigning common training needs.
  - Ensure delivery of mandatory didactic training using the video conferencing system.
  - Provide for periodic review and evaluation of delivered training for compliance with standards.
  - Provide for periodic quality assurance review of delivered training.
- Develop a formula where each department shares cost associated with operation of the video conferencing system.
  - Management of the video conferencing system.
  - Completion of installation and operability of video conferencing system.
  - Delivery of initial and recurring training to end users.
  - Providing maintenance and troubleshooting services.
  - Providing system programming services (scheduling, production, editing, and library maintenance).

Fiscal Considerations

- The reduction of duplicated staff effort (reduced soft costs) in the development and delivery of training programs.
- A reduction in material costs associated with duplicated training resources for training delivery.
- A reduction in apparatus fuel costs associated with a reduced travel for training. (This may be off-set by travel to attend manipulative training at training facilities.
- Hiring of personnel or costs for services to operate and maintain the video conferencing system.

J – Develop an Annual Regional Training Plan

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Training

Affected Stakeholders

- All Agencies

Objectives

- Provide standardized and consistent training.
- Provide a well-trained emergency workforce.
- Provide long-term vision and direction for training delivery.

Summary

The 2007 version of *NFPA 1500* states, "The fire department shall provide training and education for all department members commensurate with the duties and functions that they are expected to perform."[90]

A formalized training plan provides the guidance for meeting training requirements. The plan and subsequent training is used to ensure that firefighters are competent, certified, and possess the ability to safely deal with emergencies. Training priorities are established by evaluating responder competencies to training mandates, requirements, desired training, and with the emergency services being delivered. Contemporary training delivery often revolves around performance or outcome-based training.

An annual training plan should reflect priorities by identifying the training that will occur. Training topics, general subject matter, required resources, responsible party, tentative schedule, and instructors are all covered in the plan. Rationale for why certain topics were chosen (or not chosen) is also included in the plan.

[90] National Fire Protection Association, *Standard 1500 Standard for Fire Department Occupational Safety and Health Programs*, Training and Education, 2007 Edition.

Discussion

Planning is essential to a successful training division, functioning much like the rudder of a ship. To efficiently plan the direction of a training program, complex factors must be considered, including: training mandates, department type, personnel career development, unanticipated need, priorities, and finite training time. Successfully charting a course through such issues can be a daunting and overwhelming task for the lone training officer.

Currently, each study fire department individually deals with the same or similar fire training responsibilities and issues; inefficiencies exist as a result. A single regional training plan is an opportunity to combine intellectual resources to exploit the strengths and assets of each department for mutual benefit.

> *Efficient training systems are those that identify what they do well and take advantage of the opportunities provided by other systems to supplement their efforts. Inefficient systems are those that try to be all things to all people, and in doing so, squander resources.*[91]

Determining the level of training that will be supported is crucial. Develop the annual training plan accordingly and deliver the training that directly supports those levels. For example, training could be directed at supporting certifications of Firefighter I, Fire Officer I, and Apparatus and Pump Operator. A pool of instructors who are experts in that subject can be developed from those with the interest, qualifications, and expertise.

Developing and carrying through with a well-conceived and coordinated training plan can improve on-scene safety, efficiency, and effectiveness of personnel. With personnel from all agencies trained from the same plan, an emergency incident may be attacked with an expectation as to the level of training and skill set of the responders. The training plan will also assist in the planning and tracking of employee development and certifications.

Guidance

- Provide a coordinated training plan, including:
  - All regional agencies.
  - Conduct didactic sessions via the video conferencing system.
  - Plan regular use of training facilities by all departments.
  - Schedule regular single agency manipulative single and multi-company drills.

[91] Department of Homeland Security, FEMA, U.S. Fire Administration, *The Future of Fire Service Training and Education Professional Status*: *Part Two – Training and Education*, page 1.

  - Schedule regular multi-agency, multi-company manipulative drills.

- Establish and maintain a training committee that meets regularly. Include at least one training representative from each department:
  - Develop an annual training plan.
  - Publish, distribute, and implement the plan.
  - Provide an orientation for personnel of each department regarding the plan's purpose and contents.
  - Publish monthly training schedules based on the plan.
- Place the annual plan and monthly schedules in electronic format for distribution and ease of updating.
- Provide for periodic reviews and adjustments to the plan.
- Direct all curricula towards risk management.
- Include all hazards in the training plan rather than solely fire-related incidents. The fire service's response and mitigation missions have expanded greatly over the years and now include all disasters, natural and manmade.

Fiscal Considerations

- An elimination or reduction in duplicated staff effort (reduced soft costs) in the creation and updating of multiple training plans.
- Instructional time is increased during multi-agency training sessions with personnel trained to selected certification levels.
- A reduction in costs through coordination of shared training resources and equipment.

K – Consolidate Training into a Regional Training Division

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Training

Affected Stakeholders

- All Agencies

Objectives

- Eliminate duplicated efforts in training in the Westshore region fire department emergency responders.
- Create a single Westshore training division.

Summary

Responsibility for fire department training programs is either designated to one person or a group of people. Two classic forms of providing training are: 1) a training division with assigned personnel, or 2) a company officer who is assigned training responsibilities in combination with regular duties.

Multiple assignments also tend to underscore the difficulty faced by many officers in trying to balance staff responsibilities. One such company officer wears three hats: he has daily duties as a company officer, he is assigned as the department's training officer, and he also serves as the chairman of the safety committee.

With the creation of a single regional training division, ESCI believes that the FTEs used to perform collateral duties will be positively affected. As specialists, it will take fewer individuals to conduct training than are currently required by the fire departments individually. Historically, individual training programs have been managed and operated quite independent of one another.

Discussion

To varying degrees, all study fire department training programs display strengths and weaknesses. The weaknesses largely are a result of two basic problems influencing all training

officers — multiple responsibilities and a lack of time to "do it all" appear to create a workload which at times seems overwhelming.

Skills and recertification training for emergency medical technicians appears to receive adequate consideration. Mandatory, special operations, and specialized rescue training is conducted to some level by each department. The focus of other effort by most training programs centers on EMS and periodic training of basic firefighter skills.

Within individual departments, training is frequently assigned to personnel with knowledge, skill set, and expertise in the subject area. Course content, quality, and to what level scheduled classes are delivered are predicated on several factors; generally dependent on the commitment and interest of the person delivering training, department priorities, and chief officer support.

Given the resources and expertise within the region, there exists an opportunity to eliminate duplicated efforts of individual departments through consolidation of the training into a single training division. The training division's mission would be to coordinate the administration, management, and delivery of a regional training program. The division, established by combining existing fiscal, material, and personnel resources, would be more efficient. Focused attention on the training requirements by training division members will produce a more efficient training delivery system throughout the region.

Multiple methods of creating a cost sharing for operation of a regional Training Division exist. They include: 1) cost sharing based on the total training division budget divided equally by the number of operational FTEs, 2) a base fee per FTE plus a rate based on contact hours, 3) a fee per operational FTE based on rank and certification level, and 4) offer classes as required for specialized training by each fire department on a cost-recovery basis. Solicit individuals from outside agencies to fill unused capacity based on cost plus.

Guidance

- Of all of the recommended opportunities, this one will need almost universal participation by the regional fire departments to be successful. If one or more agencies elect not to participate, the geographical and logistical complexities multiply exponentially.
- Establish a single regional training division.
  - Provide for the administration of training delivery services.

  - Provide opportunities with regular meetings for stakeholder agency representatives to coordinate training activities.
  - Provide for adequate training facilities and office space for training staff.
- Provide for a single training staff, with an administrator (division head) at the chief level.
  - Chief training officer should report to one supervisor.
  - Chief training officer should have overall training program administration, supervision, and management responsibilities.
- Adequate personnel to administer and provide training for:
  - Recurrence training for Firefighter I and II, and Fire Officers.
  - Officer level training and career development.
  - Apparatus operator/engineer skills and engineer development.
  - Administration and coordination of the emergency medical services training and recertification program.
  - An RMS (records management system) for tracking individual, company, and department training.
  - Adequate clerical support staff.

Fiscal Considerations

- Increased efficiencies by eliminating duplicated administrative staff of existing individual department training programs.
- Potential for increased instructional capacity through pooled instructors.
- Cost to develop and or modify existing training facilities.
- Cost of purchasing any additional training aids.
- Personnel costs to staff the training division.
- Maintenance and capital replacement costs.

L – Develop a Regional Fire and EMS Training Facility

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Training

Affected Stakeholders

- All agencies

Objective

- Provide training facilities readily available to all Westshore fire departments.
- To develop and maintain the knowledge and skills of regional emergency services personnel.

Summary

Classroom instruction is an essential component of preparing emergency responders with knowledge and skills. A training facility or drill ground is a second indispensable element. Training facilities provide the controlled and safe environment used to simulate emergencies to develop and test the skill sets of emergency workers. Training involves both individual and group manipulative skills development in the operation of firefighting equipment, and fire apparatus.

NFPA 1402: Guide to Building Fire Service Training Centers, is a standard that addresses the design and construction of facilities for fire training.[92] The document covers the features that should be considered when planning a fire training facility. ESCI finds that absent the availability of suitable training facilities, some fire departments may forego essential training.

Discussion

Proficient emergency responders have confidence in their own abilities in handling the emergencies they encounter. Best practices suggest that emergency workers have regular access to training grounds for repetitive drills and to develop new skills. Training is identified as

[92] National Fire Protection Association, *Standard 1402 Guide to Building Fire Service Training Centers*, 2002 Edition.

a vital part of a fire department's safety and accident prevention program. An effective and continuous training program results in safer, more efficient, and effective emergency operations.

It is financially unworkable to expect that every Westshore fire department will build and maintain an independent training facility. Constructing a regional training facility to comply with industry standards concerning classrooms, practice grounds, training tower, live-fire building, and training props *is* fiscally prudent. In addition, the on-going cost of operating and maintaining a training facility further advances the case for joint ownership.

A basic fire training ground constructed in 2009 by a fire agency is shown in the following figure.

Figure 180: Sample Training Grounds

With in-kind donations and grant funding, the fire department was able to construct the basic buildings with very little local tax dollars.

Critical Issues

- Determine the required number and location of regional training facilities. Any property that is a potential site for a training center should have an environment assessment performed.
- Conduct a needs assessment before design and construction of a training center.
- Consider community and environmental impact of training grounds and training props when determining locations. Pay particular attention to access and egress routes.
- Select an architect, engineer, and vendor familiar with fire department training centers for oversight of the project. A number of companies have extensive knowledge and

expertise in developing complete fire training facilities. Manufacturers of fire training facilities also offer lease packages for financing.

Guidance

- Establish a user group that meets regularly to include at least one training representative from each participating fire department.
- Develop a minimum of one training facility proximate in a location easily accessible by all participating departments.
- Assure easy/safe access and egress routes.
- If possible, select a site easily served by existing utilities, including electric, water, gas, and sewer.
- Provide a borderless plan for maintaining adequate emergency response coverage for crews attending training.
- Provide for regular scheduled use of the facilities.
- Secure adequate support for facility and grounds maintenance, and improvements.
- Provide adequate training resources and equipment beyond those carried by on-duty apparatus.
- Live fire training is a crucial element when developing plans for fire training facilities.
- In addition to a gas-fired live training prop, ESCI recommends the purchase of a flashover training prop be given strong consideration.
- Establish policies and procedures for safe and effective use of the facilities.
- Consider jointly insuring against accident and liability.

Fiscal Considerations

- Visit fire regional training centers for ideas for the regional facilities.
- Anticipate an increase in fuel consumption and vehicle maintenance caused by travel to and from the training facilities. Any increase would likely be offset by a comparative reduction in travel after the completion of the video conferencing system.
- The cost of new construction of facilities.
- The shared costs for the use, support, and maintenance of facilities.

M – Develop Uniform Fees for Service

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Administration

Affected Stakeholders

- All Agencies

Objective

- Provide participating fire departments with a uniform schedule of fees for service.

Summary

Each Westshore fire department charges at least one or more fees for a variety of services. Fees for service include ambulance transport, standby charges, fire safety inspections, enforcement of the building code, and for out-of-city responses. Several departments also charge fees for non-routine services to recover costs due to extraordinary or unusual events. Examples include response to and standby for hazardous materials incidents and recurring false automatic alarms.

The departments differ on which services are or are not billed, and the agencies differ on the rates charged. If the Westshore fire departments follow a policy of greater interagency cooperation, some of those partnership initiatives will necessitate that the departments also align fee schedules.

Discussion

The cities and fire departments of the Westshore region have adopted service fee schedules that are applied to various functions and services of the departments. Types of service provided and the rates set for providing services is inconsistent. Presently, the cities' and departments' fee schedules are prepared, administered, billed, and collected independently.

Fees for service include ALS/BLS ambulance transport, fire safety inspections, enforcement of the building code, and contracts for service. The departments may also charge fees for non-routine services to recover costs due to extraordinary or unusual events. Examples include

response to and standby for hazardous materials incidents and recurring false automatic alarms. Below is a description of representative fee types:

- Stand-by Charges – A fee charged for cost necessitated by a one-time or on-going need for general public safety. For example, a fire department may charge a stand-by fee to post an ambulance at a local sports event.

- User Fee – A fee based on actual cost incurred for any service performed by a fire department where these costs require a recall of fire personnel above normal staffing.

- Charge for Service to Non-Tax Supporting Institutions – A fee for the total cost incurred by a fire department for service provided to any non-tax supporting institution.

- Ambulance Transport Fee – A fee for emergency ambulance transport, usually based on level of service (ALS or BLS) and supplies, services, and mileage.

- Plan Check Fee – A fee charged to review plans for multiple dwellings, commercial, manufacturing, or public assembly units. The fee can be based on a percentage of the total estimated construction cost per structure. This fee off-sets expenses incurred by a fire department during the planning phase of any development or construction.

- Fire Cause Determination Fee – A fee that recovers the fire department's cost of providing service resulting from a violation of the Fire Code.

- Permit Fee – A charge for a fire department permit for special or short-term events.

Other fees for service include agreements where one emergency service provider either wholly or partially supplies services to another. This can be done under a contract for service or an interlocal agreement.

A second example is operating an ambulance transport system on a fee-for-service basis. A benefit of charging ambulance transportation fees is that it augments department revenues. This allows a department to provide additional staffing for both the ambulance and the more traditional department services than would otherwise be available.

Currently the seven fire departments use two different companies to conduct billing services. Interestingly, the percentage charged for billing varies from 6 to 8 percent. If the fire departments were able to consolidate billing services and negotiate a single rate at 6 percent or lower, they would be able to retain a significantly greater portion of the revenue.

There are good reasons for developing uniform fees for services; foremost of which is the reduced time, effort, and cost of developing independent fee schedules. Beyond duplicated

effort and expense, however, a consistent fee schedule across the region creates a more coherent public service image to the business and taxpaying communities.

Critical Issues

- Fire agency partners should design a standardized procedure for billing. For example, the process may establish a collection policy for non-payment, billing cycle, recordkeeping, billing service allowance, and oversight rules for the program.

- The agencies should constantly review fees for service for improvements and to capture potential sources of new revenue that may become available.

Guidance

- Evaluate the existing fee for service schedules. If possible, use one as the basis for developing uniform fees for service.

- Determine that all potential sources of revenue are included in the fees for service schedule. While all departments are now providing the service, this will allow another fire department to provide the service and collection services if applicable.

- Format the fees for service schedule for adoption by each organization.

- Investigate using a single source for billing for services. This is a service that may be provided by one of the existing departments with the expertise and internal capacity. If no suitable department is available, develop an RFP.

- It is common to charge a fee for fire inspections. The Benicia (California) Fire Department also uses inspection fees, but with a positive reinforcement twist. Benicia charges $35 per company inspection. However, if the inspected property is found to be in compliance or complies with fire department instructions before a follow-up visit, the fee is waived. If the occupancy fails to comply, the fee is applied for each fire department visit (usually $105 for three inspections).

Fiscal Considerations

- No significant financial considerations.

N – Purchase Uniform Emergency Apparatus

Level of Cooperation

- Functional

Timeline for Completion

- Long Term

Section

- Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Create a single set of emergency apparatus specifications.
- Provide single-source uniform emergency apparatus for all Westshore fire agencies.

Summary

The study fire departments use and maintain a variety of emergency apparatus types. Among the common types of apparatus, (such as pumpers) each department uses equipment of different makes, models, and configurations. A standard specification and procurement process for each apparatus type would result in lower cost, faster production, and training efficiencies.

Procurement of uniform fire apparatus can translate into lower purchase prices; reduction in parts warehousing; and less money, time, and effort spent training drivers and maintenance personnel. Other benefits include greater interoperability, a potential for reducing driver training, and greater confidence and skill level among operators.

Discussion

The apparatus fleet of the study departments is diverse. Fire apparatus are categorized by function, including pumpers, aerial devices, water tenders, rescue units, and medic units. While there is an identifiable need for vehicles from each category in more than one configuration, acquiring and maintaining standard apparatus creates desirable efficiencies. Dissimilar apparatus tends to increase purchase cost, requires additional initial and recurrent training, and results in the need to warehouse a larger parts supply.

The cash price of a pumper frequently exceeds $500,000; the cost of an aerial unit may easily exceed twice that amount. The reasons for such prices are due to the specialized nature of fire

apparatus. However, customization, add-ons, and options tend to make each fire apparatus a "one of a kind" vehicle. The costs to equip, maintain, repair, train operators and mechanics, and to warehouse parts only adds to the overall expenditure.

Fire apparatus useful service life varies generally depending on the rate of use, the environment, operating conditions, and the frequency and level of preventive maintenance. A fire pumper with average to heavy use can reasonably be expected to have a 10 to 15-year service life. With light to very light use, service life can reach 20 years; very heavy use may reduce service life to as few as ten years. Aerial devices are often operated less frequently and have a useful life of between 15 and 20 years.

Factors influencing fire apparatus service life include technology and economics. At a given time the cost to operate and maintain a fire apparatus passes the economics of rehabilitation, refurbishment, or replacement.

In the following figure (Figure 181) ESCI uses these three differences in example apparatus to illustrate how each may impact apparatus operational costs and efficiencies.

Figure 181: Impact from Apparatus Differences

Jacob's and Engine Exhaust Brake	Roll Up and Conventional Compartment Doors	Different Manufacturers
Method of operation	Initial cost difference	Method of operation
Training of operators and maintenance personnel	Different storage layout for equipment	Training of operators and maintenance personnel
Recurring training	Parts for maintenance and repair	Recurring training
Parts for maintenance and repair		Parts for maintenance and repair

A trend is developing within the fire apparatus manufacturing industry. Several manufacturers now offer a line of stock fire apparatus built on custom chassis in addition to a more traditional line of fully custom units. The cost savings of purchasing a stock unit is often 20 percent or more when compared to a custom unit.

Safety should always be the main consideration when purchasing and operating emergency fire apparatus. When developing emergency fire apparatus specifications and operational procedures, NFPA and other industry standards should be used. Additional guidance on fire

apparatus safety devices, response, and training can be found in the *Emergency Vehicle Safety Initiative*.[93]

Guidance

- Assemble data on current department apparatus, including: age, mileage, operating hours, maintenance costs, cumulative down time, and annual test results. Use the information to create an apparatus replacement schedule.
- Determine the replacement interval and projected life expectancy of each apparatus.
- Examine the merits of extending the useful service life of apparatus through rehabilitation and refurbishment.
- Consider the option of purchasing all categories of fire apparatus from a sole source.
- Develop an emergency apparatus prescribed load list for use by all agencies.
- Mark apparatus in a standard format with striping, decals, and department name following NFPA standards and recommendations from the *Emergency Vehicle Safety Initiative*.[94]
- Develop mobile apparatus repair and service response unit(s).
- Develop central facilities(s) for maintenance and repairs for all emergency apparatus.
- Create Standard Operating Guidelines for the operation, maintenance, and recordkeeping of apparatus. A resource for obtaining sample documents may be found at the National Fire Service Library website.
- Outfit reserve apparatus with the same complement of equipment as frontline units.

Fiscal Considerations

- Time and effort savings by preparing fewer bid specifications.
- The prospect for conducting fewer bid processes.
- Investigate the letting of apparatus bids for periods longer than one year.
- Cost savings in acquiring emergency fire apparatus.
- Consider the purchase of stock versus custom apparatus.
- Consider leasing versus outright purchase of emergency apparatus.

[93] Department of Homeland Security, FEMA, U.S. Fire Administration, Emergency Vehicle Safety Initiative.FA-272, August 2004, pages iii, iv.
[94] Western Fire Chiefs Association, National Fire Service Library, www.wfca.com.

O – Develop a Model Labor Agreement for all Regional Departments

Level of Cooperation

- Functional

Timeline for Completion

- Long Term

Section

- Administration

Affected Stakeholders

- All Agencies

Objective

- Demonstrate continued partnership between labor and management groups by providing a model regional labor agreement.
- Align the effective dates and provisions of labor agreements to smooth the unification process between participating agencies.
- Eliminate duplicated effort in developing labor agreements.

Summary

A labor agreement is a contract between the management representatives of a county, city or other political unit and the designated representatives of a labor group. The purpose of a labor agreement is to memorialize in written form the wages, hours, benefits, and terms and conditions of employment afforded to covered employees. Labor agreements (also referred to as contracts or Memorandum of Understandings [MOU] or Collective Bargaining Agreements [CBA]) also outline an orderly and equitable means of resolving any misunderstanding or conflict between the parties.

One way to move forward is to begin the process of aligning the labor agreements of each fire department during future collective bargaining processes.

Discussion

Labor agreements specify the wages, hours, benefits, and other terms and conditions of employment. The documents detail other items of importance to employees and management – matters that may prove difficult to modify without a high level of trust, cooperation, and harmony in the labor and management relationship. The significance of any article in an agreement should never be trivialized. What may seem insignificant to many may be the one item that is

essential to others and can disrupt advancement. To illustrate this point, the following example is offered regarding attitudes toward the use of tobacco.

What a group of people believes, values, and feels is not static but continually in flux. Like society, demographic shifts, changing roles in the workplace, and education levels alters perception. For instance, in the not so distant past, smoking was socially acceptable; now, in many situations it is not. Sample language from a labor agreement article concerning tobacco use reads as follows:[95]

> *"Current fire department uniformed personnel shall not use tobacco products inside the work-site, within or on fire department apparatus, or inside training facilities. All new fire department candidates shall be tobacco free upon appointment and throughout their length of service to the department."*

The contract language above was crafted to address a change of belief. While some would see this as a relatively simple issue, it may prove otherwise when applied across the wider spectrum of regional fire protection. It would be unfortunate for fire departments to be successful in many of the strategic partnerships only to be blocked by unilateral issues. Each contract article is important and was included for a reason; however, there are numerous instances in the fire department labor agreements where collaboration can aid in aligning the agreements.

The FLSA (Fair Labor Standards Act) provides a second example. By now, FLSA is a familiar component of labor agreements; however, the way that fire departments establish and administer the special rules for firefighters may be different. Public sector fire departments may establish special work cycles for sworn firefighters, which can increase the FLSA overtime beyond the normal 40-hour workweek. Firefighters covered by these special rules are entitled to FLSA overtime only for hours worked in excess of a threshold set by the Department of Labor. For example, in a 28-day cycle fire fighters are entitled to FLSA overtime only for the time actually worked over 212 hours during that 28-day period. On the other hand, a work cycle of 27 days entitles employees to overtime after 204 hours of work.

The FLSA regulations also permit employers to exclude up to eight hours of sleep time from work when shifts exceed 24 hours in length.[96] For FLSA purposes, hours worked means time when the employee is actually performing services for the employer. These are the only hours that must be included when determining if FLSA overtime is due. Thus, sleep time, "Kelly Day,"

[95] *Memorandum of Understanding*, the City of Carlsbad, and the Carlsbad Firefighters' Association, Inc., January 2002.
[96] The law requires that there be an agreement with the employees to exclude sleep time.

or other paid leave may not count as hours worked for FLSA purposes. Because of the potential overtime liability when FLSA work cycles are changed, these are important issues to have a clear understanding between all parties to an agreement.

It is important to first determine how changes to each article will affect individuals, organizations, and the mission of the fire departments. With seven fire departments, the number of potential labor agreement conflicts can be large, but the reward of resolving them could be equally large. Experience shows that success in aligning labor agreements between collaborating fire departments is the one partnering opportunity that can easily make or break future functional consolidation initiatives.

Critical Issues

- It is best to strategically involve as many people as practical without burdening the process.
- Determine one individual to be the spokesperson for matters related to partnering strategies.
- Open communication between stakeholders.
- Process in place to respond to rumors linked to discussions with labor negotiations. Joint release of information from management and labor is more effective.

Guidance

- Align policies, procedures, and operating guidelines prior to changes in labor agreements. This should include required and desired qualifications for job descriptions, titles, and ranks associated with each position.
- Determine how any changes to a contract would impact promotional opportunities including existing promotional lists.
- Determine the hiring and promotional date of employees. This basic information will be needed when establishing and merging various employee rosters.
- Align trade time and rules governing use of it.
- If the fire departments determine to enter into an interlocal agreement, a point of good faith negotiations could design a tiered scale over a period to reach parity in pay.
- The services of legal counsel and an accountant are advised.

Fiscal Considerations

- Determine existing liabilities for pensions, disability, compensation time, and accrued leaves before making changes to labor agreements. In addition, this exercise is

important before functionally consolidating operations involving the transfer of employees.

- Project future liabilities and fiscal impacts of changes to labor agreements.

P – Acquire AVL and MDC or MDT Capabilities

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Provide AVL (Automatic Vehicle Locator) information transmitted to dispatch for use during emergency and non-emergency incidents.
- Provide standardized MDC/MDT (Mobile Data Computer or Mobile Data Terminal) in emergency apparatus.

Summary

Automatic Vehicle Location (AVL) provides real-time location information for apparatus. An AVL system consists of a GPS receiver on the apparatus, a communications link between the unit and a dispatch center, and PC-based tracking software for dispatch. The communication system is usually based on a network similar to those used by cellular phone systems.

Mobile data terminals (MDT) permit communication between dispatchers and emergency response vehicles without reliance on voice radio. A digital display on the vehicular MDT shows short messages. Dedicated keys and a touch screen permit an officer to quickly issue commands and status reports. MDTs also function as the communication link between the AVL and CAD software.

Like MDTs, mobile data computers (MDC) permit instantaneous communication between dispatchers and fire apparatus without the need for voice radios. MDCs can also be used for messaging, electronic dispatching, and vehicle monitoring. The units are available with GPS capability. The major difference between an MDT and an MDC is that the latter includes all of the hardware and software abilities of a traditional laptop computer. MDTs, on the other hand, merely function as a link to a larger computer server usually located in the dispatch center.

Discussion

AVL – The Global Positioning System (GPS) provides the backbone for AVL. GPS is funded by and controlled by the U.S. Department of Defense (DOD). While there are many thousands of civil users of GPS worldwide, the system was designed for and is operated by the U.S. military. GPS provides specially coded satellite signals that can be processed in a GPS receiver, enabling the receiving unit to compute position, velocity, and time. Four GPS satellite signals are used to compute positions in three dimensions and the time offset in the receiver clock.[97]

GPS provides the location of a vehicle with accuracies of about 25 to 30 feet. A geographic location is logged into the vehicle's GPS unit and transmitted along with the unit identification to dispatch. Information displayed may include time, unit speed, and heading. The frequency of updating vehicle information can be set for any variable of seconds or minutes.

If cellular coverage is inadequate, an alternative satellite communications network may be available for certain areas. The communication satellite receives location information from the AVL's satellite transmitter and forwards it to the dispatch center. The dispatch software shows vehicle locations in relation to streets and intersections. Most AVL systems have a feature for two-way mobile messaging that allows e-mail messaging to and from the apparatus over a wireless internet link. Additional options and features that can be added to AVL include:

- Display vehicle position, speed, heading
- Display dispatch addresses and routing suggestions
- Provide visible and audible alerts to crews
- Replay vehicle activity with user defined date and time
- Create unit reports
- Display vehicle status

Benefits of AVL include:

- Display precise location and status of emergency apparatus
- Enhances the ability of commanders to control emergency resources
- Increases apparatus operator safety

[97] Peter H. Dana, *The Geographer's Craft Project*, Department of Geography, The University of Colorado at Boulder.

- Ability to locate and dispatch the nearest emergency response unit
- Reduces response times
- Uses current investment in GIS data
- Increase in number of units dispatchers can manage appropriately
- Tracking report documentation

MDC/MDT – Mobile data computers and mobile data terminals are computerized devices used to communicate between emergency vehicles and dispatch. MDTs feature a screen on which to view information and a keyboard or keypad for entering information; the terminal may be connected to various peripheral devices. With MDC/MDTs, fire and EMS agencies are more likely to work with up-to-date information. The devices are used during emergency response to locate addresses, anticipate what will be encountered on-scene, receive updated call information, for record keeping, and to gather data used to show trends and patterns.[98]

Prior to electronic media, most information was gathered by officers in the field and was subsequently transmitted to others verbally or via hand written notes and reports. Raw statistical information was usually stored as written documents, a form not well suited to analysis. Now, of course, the computer has taken over most data collection, transmission, dissemination, compilation, and storage.

One school of thought is that MDTs are better suited for fire and EMS service, yet many fire administrators argue that MDCs are superior. A summary of some of the perceived attributes of each is listed in the Figure 182.

Figure 182: Comparison of Features – MDT vs. MDC

MDT	MDC
Longer life expectancy	Shorter life expectancy and need for frequent repairs
Brighter screen	Units not bright enough
Less likely to be stolen	May be stolen
No mobility	May be used out of vehicle as a laptop
Durable	Less durable
Difficult to upgrade	Easily upgradeable
Lower initial cost	High initial cost
Detachable keyboard	Non-detachable keyboard

[98] Public Safety Mobile Data Systems, www.911dispatch.com/information/mobiledata.html, October 2004.

Critical Issues

- Using a cost-benefit analysis to determine which systems (AVL, MDT, and/or MDC) are financially viable for use by the fire departments. A cost-benefit analysis can be used to estimate the total capital investment represented by the purchase of the equipment, and then establishing if the expenditure is justified by the gains in dispatch, response, and incident command.
    - Include in the analysis the cost to train emergency communications and fire department personnel.

Guidance

- Strongly consider the incorporation of AVL technology into a MDC/MDT system versus a standalone AVL.
- In a white paper report published in June 2005, the author lists five reasons mobile technology projects fail.[99] They are:
    - The complexity of the mobile deployment is underestimated.
    - Solutions are built upon flawed assumptions.
    - Business (operations, dispatch) and IT priorities are misaligned.
    - Hardware-dependent approaches are doomed to failure.
    - Losing sight of the end result during deployment of mobile solutions.
- Anticipate the useful life expectancy of the system and consider leasing or funding replacement.
- Determine time savings for automatic data entry versus manual.
- Security and access issues should be addressed prior to system design.
- Are adequate radio frequencies/channels available for MDT/MDC.
- Determine interoperability prior to system purchase.
- Exercise caution in the selection process for equipment size and the ability to mount hardware in vehicles. Concern for safety of personnel.
- Involve staff, operations, dispatch, and other key individuals in system design and development.
- Develop operational policy.

[99] *The Top 5 Reasons Why Mobile Projects Fail – And What You Can Do About It*, June 2005, Addesso Systems.

Fiscal Considerations

The costs to install a stand-alone AVL system are dependent on its level of sophistication and the included components. A system can range from those with fairly basic features to very comprehensive systems. Be mindful that there are significant costs for the dispatch center equipment and software. While hardware costs for a very basic AVL system can begin as low as $350 per vehicle plus installation and software, total system cost per unit may realistically exceed $20,000. An option is to outsource the installation, integration, and maintenance of AVL and MDC/MDT systems.

- Procurement costs to install equipment and software both in fire apparatus and at the dispatch center.
- Labor cost to maintain vehicular and dispatch AVL, MDC/MDT equipment, the time required to train workers on the new systems, and for any additional IT staff.
- Cost of system is highly variable dependent on selection of AVL and/or MDC/MDT, or a combined system.

Q – Develop Uniform Pre-Incident Plans

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Provide a system of shared operational plans for use during emergencies and non-emergent incidents.

Summary

Pre-incident plans are an important part of the emergency response system to provide essential information on specific structures and processes. Through timely planning, strategy and tactics can be developed before an emergency occurs. Pre-incident planning involves evaluating protection systems, building construction, contents, and operating procedures that may impact emergency operations.

Pre-incident plans should be kept up to date. The plans should be used in company training, and should be distributed to all mutual/automatic aid partners. The standards set forth in *NFPA 1620*, *Standard for Pre-Incident Planning*, should be followed to guide in the development of a regional pre-incident planning system.

Discussion

A firefighter typically works in an alien environment of heat, darkness, confusion, and extreme danger. Often, a firefighter's first visit to a building is when he or she is summoned to an emergency at the facility; the very time that the internal environment of the structure may be at its worst. Contrary to Hollywood's portrayal of the inside of a building on fire, visibility is likely to be nearly zero due to smoke. A lack of familiarity with the layout of a structure can easily cause a firefighter to become disoriented and subsequently suffer injury.

It is important that firefighters and command staff have accurate information readily at hand to identify hazards, direct tactical operations, and understand the proper use of built-in fire resistive

features of some structures. This can be accomplished by touring structures, developing pre-incident plans, and conducting tactical exercises — either on-site or tabletop.

An ideal pre-incident planning system uses standard forms and protocols. Data is collected in a consistent format. Information is presented in a manner that permits commanders and emergency workers to retrieve it quickly and easily. All require the use of consistent methods for collection, verification, storage, presentation, and update of emergency plans.

The most successful programs use pre-incident planning software to assemble the data, create plan documents and "quick data" forms, and store the information for easy retrieval. Above all, no program is successful without thorough incorporation of the pre-incident plans in frequent classroom and on-site training exercises.

The evaluation phase of this process identified that completion of pre-incident plans should be given high priority. Pre-incident planning is limited to only a number of target hazards within individual response areas. Process and plan consistency is essentially non-existent. The plans that are completed are not typically distributed to mutual aid departments.

Operational, management, and IS/IT staff should assist in making software and formatting decisions. Goals for the identification and development of target hazard pre-incident plans should be established. The uniform pre-incident planning program should be reviewed at least annually to assure the accomplishment of goals, the improvement of the program, and the appropriate entry of new target hazards. Properties that should have pre-incident plans include those having:

- A potential for large occupant load
- Occupants that are incapable of self-rescue
- Structure size larger than 12,000 feet
- Facilities that process or store hazardous materials and/or equipment
- Buildings with built-in fire protection systems
- Wildland hazards

Pre-incident plans should be a quick and easy reference tool for company officers and command staff. The plans should be formatted for easy adaptation to electronic media. At a minimum, a pre-incident plan should include information on but not be limited to:

- Building construction type
- Occupant load
- Fire protection systems
- Water supply
- Exposure hazards
- Firefighter hazards
- Utility location and shutoffs
- Emergency contact information

Completely revised and upgraded from a recommended practice to a standard, the 2010 edition of *NFPA 1620: Standard for Pre-Incident Planning* provides criteria for developing pre-incident plans for use by personnel responding to emergencies. Pre-planning is a key component of first responder effectiveness, and *NFPA 1620* spells out the process and provides excellent information on the development and use of pre-incident plans and should be used as a reference. *NFPA 1620* addresses the protection, construction, and operational features of specific occupancies to develop pre-incident plans. The 2010 edition also contains pre-incident planning case histories and information addressing special or unique characteristics of specific occupancy classifications, as well as sample forms for pre-incident planning.

Personnel should receive regular familiarization training using the completed pre-incident plans. The plans must be made available on all emergency apparatus, regardless of jurisdiction. Routine use of pre-incident plans by all responders will assure that the plans are correctly used at major emergencies.

Guidance

- Inventory current pre-incident plan hardware, software, format, and level of development of each fire department.
- Evaluate commonality between current systems of pre-incident planning.
- Consider the establishment of a steering committee to develop building criteria and data for inclusion in pre-incident plans.
- Develop a timeline for the implementation, completion, and review of pre-incident plans.

Fiscal Considerations

The cost to each fire department for developing uniform pre-incident plans will be predicated on:

- Current hardware and software assets
- Cost to upgrade or purchase hardware and software
- Number of facilities/buildings with existing pre-incident plans versus those to develop
- The pace of new development requiring pre-incident plans
- Personnel costs to gather and assemble plans
- Personnel soft costs of on-duty staff assigned pre-incident planning tasks
- Unquantifiable potential for prevention of injury or death to emergency responders and the public

The cost of diagramming software programs designed specifically for drawing pre-fire plans starts around $400. More advance versions with 3-D capability increases the initial software cost to $700. Versions that integrate with a pocket PC would add an additional $300. This and other diagramming software programs are made to be added onto existing fire prevention/inspection programs.

R – Provide for Joint Staffing of Fire Stations and Apparatus

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Emergency Operations

Affected Stakeholders

- All Agencies

Objectives

- Provide for distribution of facilities and deployment of personnel consistent with a regional standard of cover.
- Provide consistent fire and emergency services within areas efficiently before, during, and after development.

Summary

Practicality and external influences seldom allow fire station placement to match perfectly with a fire department's deployment strategy. Reasons include the availability of property, land use laws, roadway infrastructure, construction cost, traffic patterns, geography, and projected station workload. Given that the area protected by a fire department may change through annexation, merger, and contracted protection (interlocal agreement), a perfect fire station location today may be a poor location in the future. Because of these and other factors, it is virtually impossible to place fire stations in an ideal location and not overlap the response areas of other fire stations or departments. Jointly staffed stations and/or response units create more alternatives for fire departments studying the deployment of emergency resources.

Fire departments often know how many firefighters are needed for the best possible protection; however, departments are infrequently able to afford to staff at such levels. Sharing personnel from different agencies can help to bring staffing levels closer to the optimum.

If the Westshore fire departments create a single training division, some provision is needed to offer response area coverage while other emergency units travel to a training center. Jointly staffing a PAU (Peak Activity Unit) with multi-agency personnel could protect vacant response areas during those times. Jointly staffing fire apparatus can also be a very practical option for

providing resources from a fire station located in an area able to serve more than one jurisdiction. Last, cooperatively providing specialty apparatus used for infrequent (but often high-risk) emergencies is an effective means to distribute the cost of such apparatus over a wider financing base.

Discussion

The NFPA recently published an updated state-by-state study of the needs of the U.S. fire service. The Ohio version of the January 2007 report *Ohio: Four Year Later – A Second Needs Assessment of the Fire Service* states that while statistics specific to Ohio have not been developed:

> *Based on these observations and calculations, the national report concluded that, in every population interval roughly two-thirds to three-fourths of fire departments nationally have too few fire stations to provide the indicated coverage. Specifically, if 1.5 miles is used for communities of 10,000 or more and 2.5 miles is used for smaller communities, with optimal location used for both, then the national study found that 65-76% of departments have too few stations, except for communities of 500,000 to 999,999 population, where the percentage was 82%.*

The study fire departments now rely on each other for resources during routine and non-routine emergencies. Without question, if facilities are distributed and personnel deployed regardless of jurisdictional boundaries (and consistent with a regional standard of cover) the likelihood of those resources being located where needed most increases. The crucial question is how to pay for shared resources in a manner that assures equity for all taxpayers.

The funding of jointly staffed fire stations and apparatus should be based on local law, authority, and policy. There are many examples of innovative cooperative agreements between jurisdictions that maximize the value of emergency resources. For instance, the cities of Portland and Gresham, Oregon, jointly staff a fire station that is located to respond efficiently to emergencies in both cities. For the first five months of each year, a three-person ALS fire company is housed and supported in the station by the city of Gresham. During the remaining seven months of the year, a Portland Fire and Rescue four-person ALS engine responds from the station. As change occurs in the protected area, the two cities can easily adjust liability by altering the time each operates the fire station. The agreement assures timely and effective emergency response while a financial balance is maintained that benefits the taxpayers of both cities.

Examples of methods used to jointly staff fire stations and apparatus include:

- Combined personnel from different fire departments staff a fire station.
  - One fire department supplies a firefighter for each shift and another fire department contributes an apparatus operator/engineer and an officer. The workforce is made up each day of personnel from both fire departments.
- Personnel from different fire departments staff a fire station on a set schedule.
  - One fire department staffs the fire station on two of three shifts. The other department staffs the fire station on the third shift.
- Fire departments apportion responsibility for staffing and support of a fire station for a given number of months.
  - One fire department staffs and supports the fire station for a given number of months each year. During the remaining months, the other fire department provides staff and support.
- Two fire departments jointly staff a fire station with personnel from both fire departments, and operate more than one piece of emergency apparatus.
  - One fire department staffs a fire engine and the other department staffs a medic unit in the same fire station.
- One fire department staffs a fire station but extends first alarm response from that station to another jurisdiction. The second fire department compensates the first based on an agreed cost/benefit formula.
- Two fire departments exchange in-kind first alarm response.
  - One fire department provides first alarm response into another fire department's area in exchange for like service from that agency.

Guidance

- Training issues
  - The personnel used for joint staffing of fire stations and apparatus should be trained to provide a service level (including EMS) equal to or greater than that of the cooperating fire departments.
  - While it is preferable to use a single dispatch center when joint staffing, it is not considered essential to the success of the partnership.
- Deployment considerations
  - Deployment standards for the partnering agencies should be developed and adopted.
  - The fire departments should execute deployment plans between the agencies prior to entering joint staffing agreements.
  - Several of the joint staffing examples involve personnel from different fire departments staffing fire stations and apparatus together. Developing a single labor agreement will help to alleviate real or perceived issues of equity between personnel.

  - Provide a regional IC (Incident Command) for supervision of emergency operations and for oversight of on-duty personnel during routine operations.

- Financial considerations
  - Marginal costs of deploying personnel in joint staffing ventures will be determined based on the agency, and on personnel costs.
  - Startup costs may include additional training as well as the supplies and equipment needed to support the stations and fire response units. A portion of the cost for additional training and equipment could be immaterial, if as part of the cooperative initiatives the fire departments also adopt deployment standards, a single dispatch service, training standards, and a joint purchasing program.

Fiscal Considerations

- Joint staffing of fire stations and apparatus is foreseen only as an interim step towards a unified regional fire department.
- Joint staffing provides fire departments with a way to meet deployment standards when:
  - It is not economically feasible for a fire department to staff a fire station or fire apparatus independently.
  - Fire departments have common borders and underserved territories.
- Joint staffing provides the political entities with an emergency service exit strategy where future annexation may remove or transfer territorial responsibility.

S – Provide Regional Incident Command and Operations Supervision

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Provide for IC (Incident Command) supervision of emergency operations.
- Provide for supervision of on-duty personnel during routine operations.

Summary

A dedicated Officer in Charge (OIC) routinely has authority and responsibility for all aspects of day-to-day operations and personnel management of each of the study fire departments. OICs assume command of emergency incidents and may also be assigned for the management of various fire department programs.

Discussion

OICs typically provide administrative oversight, supervision, and leadership to the operations personnel of the fire department. The work of the OIC is performed under the direction of the fire chief, assistant fire chief, or division chief; but considerable latitude is usually granted to OICs to initiate action and exercise independent judgment. OICs assigned to shift work are usually responsible for management of emergencies, personnel, fire stations, apparatus, equipment, training functions, and related activities. Other programs commonly administered by OICs include oversight of training, fire prevention, or administrative divisions.

Most fire departments maintain a span of control of five or six fire stations per OIC. Occasionally, OICs may oversee as many as eight fire stations. The total number of units, personnel, and emergency responses usually determines the reasonableness of the span of control. As the number of fire stations, units, and personnel under the OIC's supervision increases, their ability to conduct activities outside of incident command usually reduces, which may negatively impact response times to emergencies. A point is reached where proper deputy

chief supervision cannot be accomplished with large spans of control. In that case, some tasks will be overlooked or work will not be completed.

An OIC usually responds as incident commander to emergencies requiring multiple fire department units, hazardous materials incidents, or emergencies involving special circumstances. The incident commander is responsible for all aspects of the response including the development of incident objectives and management of all incident operations. The three command-level positions directly under supervision of the incident commander are the safety officer, information officer, and liaison officer.

The role of the safety officer is to develop and recommend actions to assure the health and safety of emergency workers. The role of the information officer is to develop and release incident information to the media, incident personnel, and appropriate agencies and organizations. The role of the liaison officer is to serve as the point of contact for coordinating activities between the various agencies and groups that may be involved in an incident.

The general staff under the incident commander includes operations, planning, logistics, and finance. These responsibilities (as with those of the command staff) remain with the incident commander until such time that they may be assigned to another qualified individual.

Benchmarks

Assembling an effective response force on the scene of an emergency incident in a timely manner will often lead to a successful outcome. To assemble enough personnel to complete the tasks of extinguishing a moderate-risk structural fire may require 15 fire suppression personnel. One of those tasks is command. An OIC in the command role is the officer assigned to remain outside of the structure to coordinate the attack, evaluate results and redirect the attack, arrange for more resources, and monitor conditions that might jeopardize crew safety.

In lieu of complete unification between all study fire departments, an agreement to share incident command staff across the region could result in efficiencies not possible individually.

Guidance

- Use standards of coverage and deployment documents to determine an appropriate level and number of incident commanders for the region.

- Create a formula for allocating the cost of a regional incident command program. Examples of factors for costing include; population, incidents, valuation, and coverage desired.

- Develop a job description for the position of OIC that includes duties and responsibilities.

Fiscal Considerations

- No significant financial considerations.

T – Purchase and Implement an Electronic Staffing Program

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Administration and Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Provide a uniform electronic system that combines telephone callback, personnel scheduling, and includes payroll and administrative features.

Summary

The fire departments in the Westshore region contact personnel for regular staffing and initiating callbacks in a variety of ways. The task of notification and filling vacancies has traditionally been done via telephone, with someone having to make personal contact to fill each opening. Many departments across the country have purchased software programs for handling this function.

A key feature of these systems is that through the use of a touch-tone phone or computer, employees can access the system using a secure ID and password. Supervisors have the advantage of an automated system for personnel management.

Discussion

In 1998, the Long Beach (California) Fire Department made the decision to purchase an electronic staffing program with automated telephone callback system that combines scheduling at the fire station level, payroll, and administrative functions.[100] Evidence of the benefits described by Long Beach and other fire departments provide testimony to the rapid recovery of the initial cost of acquiring this type of software. Some of those benefits of a staffing program include:

- Automatically identify and contact replacement personnel.
- Notify personnel of an emergency recall.

[100] JEMS, Innovation in Action, Workforce Wonder, December 1999, Vol.24, No.12.

- Automatically notify personnel of training, meetings, or organizational events.
- An accurate system for compiling and tracking a daily roster.
- Ensure equality in overtime distribution following labor rules and FLSA guidelines.
- Eliminate dependency on a single person(s) for staffing.
- Individual is personally responsible for own calendar.
- Automatically populate data fields in other RMS programs.

Selecting a single electronic staffing program is one aspect in efficient coordination of the staffing resources of the Westshore region. The scheduling of training, personnel notification, unit staffing, and administrative assignments, along with the development of many other initiatives in this report, will benefit from the use of one electronic staffing program.

One staffing software program was designed to be accessible with or without a computer network, and will accept requests and make contact with staff members by telephone.[101] The program is capable of placing outbound phone calls or delivering messages by pager, fax, or e-mail. The software can make multiple phone calls simultaneously and is considered a solution for emergency and other staffing recalls.

Guidance

- Involve human resources personnel, payroll, training, and labor in the development of specifications and the purchase of an electronic staffing program.
- Train key personnel in the use and maintenance of the software program.
- Network with other fire departments that have been successful in deploying an electronic staffing program.
- Create a staffing policy to accommodate management, labor, and legal requirements.
- Provide personnel with initial instruction and on-going support.
- Make available pocket size how-to-use cards for personnel.
- Work to implement the entire staffing program at the same time. Experience has shown that fire departments implementing the system all at once realize the full potential of the system more quickly and experience fewer administrative problems overall.

[101] TeleStaff, PDSI, (Principal Decision Systems International).

- Explore options for integrating the electronic staffing program with other software programs, including fire and EMS RMS, payroll, electronic logbook, and CAD.

Fiscal Considerations

- The cost of the system depends on the type of hardware requirements and software purchased.
- Annual maintenance agreement cost.
- Personnel costs for deployment of software and training.
- Reduction in management time spent on staffing.
- Potential savings in overtime costs from staffing errors.
- Accurate payroll records.

U – Develop Standard Operating Guidelines

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Provide guidelines for operation during emergencies, emergent and non-emergent incidents.

Summary

Standard operating guidelines are used at the operations level of the fire department. They are analogous to a playbook, providing direction yet allowing for individualized company officer adjustments to situations. Currently each fire agency in this study is responsible for developing a unique set of standard operating guidelines for their organization.

Discussion

Standard operating guidelines will improve on-scene safety, efficiency, and effectiveness of personnel. With personnel from all agencies trained in using the same procedures, they can approach an incident with an understanding that everyone will proceed in a similar fashion. This will greatly reduce or eliminate the confusion that can lead to delays in the delivery of service.

Guidance

- Keep the guidelines in electronic format for ease of updating.
- Give initial and recurring education to personnel in their use.
- Provide for continual use of the standard operating guidelines during routine incidents and at each training session.
- Provide for a periodic appraisal of the guidelines to maintain currency with changes in tactics, strategy, and equipment.
- Consciously keep guidelines non-specific to allow for adaptation to particular incidents by the supervisor.

Fiscal Considerations

- The elimination of duplicated staff effort in the creation and updating of standard operating guidelines will reduce soft costs.
- Instructional time optimized during multi-agency training sessions by excluding time devoted to adapting to differing procedures.

V – Shared Specialty Teams

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Provide specialty teams in the Westshore region by allocating and distributing resources to achieve minimum cost and maximum operational benefit.

Summary

Specialty teams are group(s) made up of individuals having areas of expertise in roles outside the level of training considered as normal for fire suppression personnel. Public expectation has increasingly focused on fire departments as the logical source to staff, equip, train, certify, and maintain specialty teams. A specialty team may concentrate on one or more disciplines. Examples of specialty teams include:

- Hazardous materials
- Technical rescue
- Confined space/trench rescue
- Swift water rescue
- Dive team
- ICS overhead
- Rehabilitation
- Heavy rescue
- Ladder company[102]
- Honor guard

[102] The deployment of ladder companies is considered an essential component of a suppression response; in this instance we consider the sharing of this resource to be a fiscally prudent use of resources.

- Chaplaincy

A determination as to the type, level, and number of specialty teams should be based on a strategic plan for the entire region.

Discussion

The ability of every fire department to be fully equipped for every conceivable incident, with all personnel trained and certified to the highest level is impractical; but the reality is that any fire department will occasionally encounter unique incidents that require specialized equipment and personnel. Specialty teams based only in one fire department commonly respond to fewer requests for service, which results in greater cost per incident.

While the cost effectiveness of shared specialty teams is important, keeping skill and interest levels of personnel high is essential. Personnel who train less and who use skills infrequently are arguably at greater risk when working under dangerous conditions. Shared specialty teams are more effectively able to maintain high skill, knowledge, and ability because such teams typically train and respond to emergencies more frequently.

For example, one concept already in practice regionally is hazardous material incident response. Under a shared specialty team strategy a decision could be made to train and certify all firefighting personnel to hazardous materials awareness and operations level and to subsequently contract for technician level services from a shared source. Similarly, a decision could be made to provide aerial apparatus through a regional partnership.

Guidance

- Determine the need for specialized teams for the entire area.
- Establish a single set of standard operating guidelines. It is very important that all departments operate by the same procedures when using shared resources.

Fiscal Considerations

- The elimination of duplicated effort in equipping, training, and staffing may reduce overall program costs.

W – Develop Mutual Training Strategies

Level of Cooperation

- Functional

Timeline for Completion

- Short to Mid Term

Section

- Training

Affected Stakeholders

- All Agencies

Objective

- Provide purpose and direction for training program management and delivery.
- Combine strengths and resources to:
  - Overcome current training obstacles and deficiencies.
  - Provide a comprehensive and regionally integrated training structure.
  - Develop a mutually beneficial training program.
  - Train and certify a cadre of knowledgeable and skilled emergency responders.

Summary

Agreements between public agencies to functionally consolidate certain programs are becoming increasingly common. Such cooperative initiatives are a means to mutually increase efficiency through reduction or elimination of duplication; something not usually achievable by a single entity. We believe that a mutual training strategy among the Westshore fire departments will accomplish that.

Discussion

Certain individuals are assigned responsibility (through job description or by special assignment) for development and delivery of their department's training program. Each Westshore fire department's training program is carried out, in large part, independently, with varying levels of program development, content, and quality. All persons responsible for firefighter training appear to work towards providing comprehensive programs; but not surprisingly, success is inconsistent. All Westshore fire departments experience similar limitations that restrict outcomes.

The geographical proximity of Westshore departments to one another, the resources, and the available expertise provide an opportunity for training collaboration. Sharing such resources is considered a fiscally responsible way to fully reach the full potential of all Westshore training programs. Development of a strategic plan for Westshore firefighter training is a crucial first step.

A strategic plan for training evaluates current training levels and determines future training goals and objectives. The process includes identifying the existing type and level of emergency services, followed by an audit of the certification and skills of emergency workers. Strategies are created to develop curriculum, obtain resources, and produce a training schedule. Each Westshore department adopts the training standards and certification levels for the job classifications supported by the agency. A mutual strategic plan for training provides consistency to the program for all Westshore fire departments. All emergency responders are subsequently trained to the certification levels established by the plan and all emergency workers posses the specified skills.

As part of the Westshore training strategy, a system of competency-based training and skills evaluation is recommended for all suppression and EMS personnel. Competency-based training helps to establish the achievement and retention of skills for specific jobs. The term "skill" is defined in Merriam-Webster as "A learned power of doing something competently**:** and a developed aptitude or ability." We recommend that mutual training strategies include the semi-annual evaluation of individual and company proficiency. Results of the evaluations may then be used to adjust the Westshore training strategy over the long term.

Critical Issues

- The variations between current programs used by the Westshore fire departments may initially require personnel to receive additional training.
- Continued involvement by those active in advancing the Westshore training manual, should be involved with development of mutual training strategies.
- Westshore fire departments should produce a statement attesting to their commitment of developing mutual training strategies.

Guidance

- Establish a work group to evaluate and develop common training strategies:
  - Identify goals and establish objectives.
  - Set benchmarks.

- Evaluate the following training sections found in "Partnering Strategies:"
    - Video conferencing
    - Annual training plan
    - Westshore training manual
    - Training facilities
    - Centralized training
    - Training standards
    - Record keeping
- Provide for flexibility and openness to apply existing strategies in new and different ways and for new strategies.
- Provide for a periodic appraisal of strategy use, relevancy, effectiveness, and compatibility with current need.
- Keep strategies in electronic format for ease of updating.

Fiscal Considerations

- No significant financial considerations.

X – Complete Development and Adoption of a Single Fire Code

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- Fire Prevention

Affected Stakeholders

- All Agencies (including planning departments)

Objective

- Provide for a Uniform Fire Code with a single set of local amendments.
- Provide local amendments to apply for new construction, remodels, and tenant improvements in the Westshore region.

Summary

The authorities comprising the Westshore have adopted a version of the fire code; with only a few exceptions, each has added local amendments to address issues considered unique to the jurisdiction. Several have imposed more stringent fire sprinkler requirements. Developing a single Westshore fire code would benefit the fire departments, developers, and the citizens of the region. One such benefit includes a decrease in the cumulative cost of individually developing local amendments to the fire code.

Discussion

One extreme illustration of how a fire code can seriously influence fire loss occurred during the Oakland Hills (California) fire of 1991. Water supply was a major difficulty during most of the incident. Part of the problem is related to the fact that many of the responding emergency units were unable to connect to Oakland fire hydrants. When California adopted a standard 2½-inch threaded connection for all hydrants, the cities of Oakland and San Francisco opted for three-inch connections while keeping a supply of adapters on hand for mutual aid units.

Minimum requirements for water supply, roadway widths, and access for fire apparatus have been adopted in most of the Westshore jurisdictions. What should be of concern is when an area not having minimum requirements is to be annexed or further developed. A new

development area can be required to meet current codes; but in most cases, these regulations cannot be enforced retroactively for existing structures.

The fire code includes provisions for appealing decisions. Appeals boards are formed to hear and decide appeals of orders, decisions, or determinations made by a code official about the application and interpretation of the fire code. The creation of an appeals board under a Westshore fire code would eliminate the need for multiple boards.

Westshore fire departments should continually promote fire resistive construction, built-in early warning, and fire suppression systems. During new construction, remodeling, and modifications of existing structures, builders are required to meet fire and life safety codes. The fire code used during initial construction determines the fire protection that will be in place for years and often decades. If only for this one reason, it is incumbent on the departments to adopt and apply a single up-to-date fire code across the Westshore region.

Critical Issues

- A select committee of elected officials, fire prevention staff, building officials, builders, and fire administrators can work together to design local amendments.

Guidance

- Some agreements related to current local amendments could be affected by changes or the adoption of new amendments.
- Agencies must work closely with all building officials in the adoption of local amendments.
- Develop a model citation program for local adoption as part of the local amendments.

Fiscal Considerations

- Marginal costs of creating a single fire code should compare favorably against the reduced level of effort required individually by the agencies.

Y – Provide for Westshore EMS Supervision

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- EMS

Affected Stakeholders

- All Agencies

Objective

- Provide a single point for recertification of all Westshore EMS personnel.

Summary

The EMS system of Westshore consists of a number of fire first response agencies, all providing similar first response services. Each agency requires EMS training and EMS certification for its personnel. Generally, the EMS training is based on the certification requirements established by the state. Each of the agencies has a system to oversee the performance of personnel and each provides a certain level of effort to manage personnel in the EMS system. Currently, EMS management and training capacity is fragmented because each agency oversees only that agency. The ability to manage the system using a joint management structure for EMS will reduce that fragmentation and at the same time ensure a single method of overseeing and managing the personnel in the EMS system.

Discussion

Creating one Westshore EMS training and management oversight process allows the fire service to maximize the supervisory capability of local fire service agencies. A single EMS management and training structure promotes enhanced coordination of resources and expanded abilities to standardize quality and levels of care. Agencies presently without adequate structure for managing emergency medical service can benefit from oversight that is supported by all of the agencies.

Yet, a single EMS management structure is not without challenges. Some agency personnel will have multiple reporting structures. Using an EMS management structure in addition to a standard fire agency structure could create confusion for field personnel. Further, the structure

of a multi-agency EMS system will create oversight issues for the management team. The agency managers will have to agree on such issues as personnel issues, cost distribution, roles and responsibilities, and how the EMS infrastructure will be managed.

Critical Issues

- Training issues
  - The personnel used to provide ALS management must be cross-trained to understand the management structures and oversight capabilities of each of the host agencies.
  - Each agency will have to coordinate to ensure that appropriate training is provided to EMS personnel.
  - The agencies in the system must have a method to ensure that the EMS management structure will be used appropriately by the oversight agency during EMS events.
- Roles and responsibilities
  - Fire agency partners should clearly define the roles and responsibilities of the EMS structure in the system.
  - The roles and responsibilities should be clearly communicated to personnel.
  - Fire agencies should have integrated electronic reporting mechanisms for patient care reports.
  - Quality assurance methods should be structured to ensure an integrated method of overseeing quality assurance can be accomplished.
- Financial and fiscal considerations
  - Personnel needed for oversight of the system should have the appropriate rank to manage the system.
  - An integrated patient care reporting structure should be in place. Electronic reporting hardware and software should be integrated. Purchasing an electronic system may be needed.
  - Marginal costs of deploying additional EMS personnel will be determined based on the agency and on personnel costs.

Guidance

- Develop a system-wide, cross functional committee to explore an EMS oversight process.
- Establish standards for EMS system quality assurance and reporting.
- Establish standards and methods for overseeing the day-to-day operations of the EMS system.
- Align agencies to provide EMS oversight.

- Ensure agency support for standardized EMS services. The agency support will be based on the roles and responsibilities established by the cross functional team.
- The agencies must determine whether they should provide support 24 hours per day or 40 hours per week.

Fiscal Considerations

- Financial support will be necessary to provide 24-hour coverage and a different level of support will be required for 40-hour EMS oversight.
- The agencies must determine whether and what type of hardware and software will be needed for patient records.

Z – Provide System-Wide Guidelines for Fire Response

Level of Cooperation

- Functional

Timeline for Completion

- Short to Mid Term

Section

- EMS and Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Define response times including maximum response times and response time definitions so that adequate system planning can take place. Establish parameters for maximum response times on a per-call basis. Develop a system-wide reporting structure to standardize the collection and reporting of response times.

Summary

Response times are one of the most frequently used methods of measuring system performance. Fire agencies and policymakers require a gauge by which to measure the effectiveness of the system and a method by which to make decisions. Because the economic cost of fire protection is highly sensitive to response times, a small change in response time requirements may cause a significant change in cost. Policymakers must therefore carefully consider the balance between the economic cost, fire risk, and the highest savings of life and property at the least cost.

Discussion

In conducting research for the Commission on Fire Accreditation International, Inc. (CFAI), members of the initial task force spent considerable effort toward examining the factors that make up the time required to be notified of and respond to a fire emergency. A thorough understanding of the relationship of time and the progression of an emergency was fundamental to defining optimum service levels. In the process of this work, the task force noted that many

fire departments are collecting data on emergency response but are not necessarily using that data to measure performance.[103]

Commonly, a problem occurs when fire departments use different timeframes in collecting and reporting response time statistics. For example, if a department does not include alarm processing or turnout time in its definition of response, the department's response statistics may be unfairly weighted because only travel time to the emergency is measured and reported. On the other hand, a department that does include alarm time and processing time in its collection of data may be compared unfavorably to a department that does not.

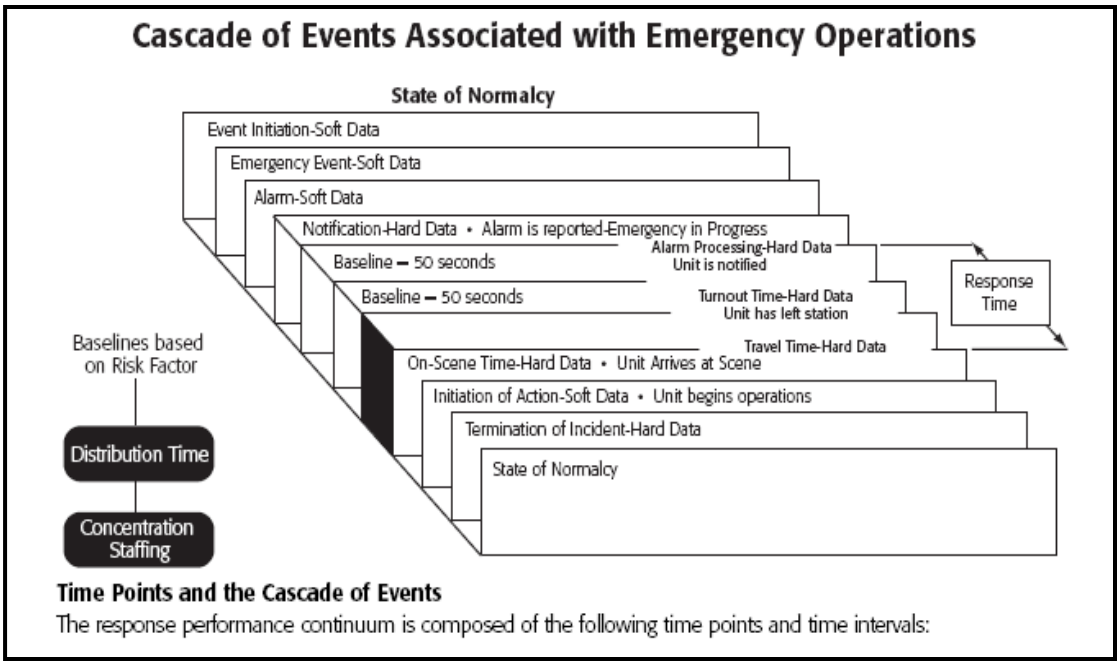
Fire emergency response times are not well defined in the Westshore study area. Consequently, it is unclear which standards the agencies use to determine if response requirements are met. We recommend that appropriate Westshore fire response intervals be defined and adopted. Definitions should include the time to be measured, including at least the following:

- **Total response time** — the time required for response, measured as the time between when the emergency responder is notified of an incident by the dispatch agency and when the responder's vehicle comes to a complete stop at the scene (or staging area).
- **Turnout time** — the time measured between when the emergency responder is first notified of an incident by the dispatch agency and when the responder's vehicle begins moving toward the incident.
- **Travel time** — the time measured between when the emergency responder's vehicle begins moving toward the incident and when that the vehicle comes to a complete stop at the scene (or staging area).

The International Association of Fire Chiefs (IAFC) makes recommendations for response times and has established a "Cascade of Events" to assist responders in understanding response intervals for emergency operations. Irrespective of the standard used, system regulators establish an appropriate response time reporting method for their local communities. While the IAFC method includes dispatch-processing time as a component of response time, we elect not to use that method because responders rarely have control over the dispatch center to the extent that they can influence those times. Regardless, the dispatch processing times should also be monitored by the system and standards for dispatch should be established.

[103] *Creating & Evaluating Standards of Response Cover for Fire Departments*, Fourth edition, Chapter 2, page 1, Commission on Fire Accreditation International, Inc, 2003, Chantilly, VA.

Figure 183: Emergency Operations – Cascade of Events



Response intervals for emergency services are not standardized for different demographic regions in the Westshore. The agencies should therefore, have a universal method to both capture and report on response times.

Critical Issues

- Data issues
  - An integrated, inclusive emergency operations and/or EMS advisory committee may define data points that will be used in the system to capture and report on response performance.
  - The fire departments should collaborate with the dispatch agencies to ensure that the data points can be captured by the center.
  - The dispatch agencies should develop methods to report on the response performance using industry standard fractal reporting methods.
- Performance considerations
  - Fire agency partners should design standard guidelines for response performance. For example, response zones for urban, suburban, and rural deployment areas may be defined to reflect performance variances based on the population density of the communities being served.
  - The agencies should determine valid and reliable performance reporting methods for response performance.

  - The agencies should constantly make improvements to response methods to maximize performance given the available resources in the communities.

- Financial and fiscal considerations
  - Marginal costs of providing committee work.
  - Reporting will require additional resources from the fire agencies and from dispatch.
  - Only limited out-of-pocket costs will be required, possibly for software and training.

Guidance

- Establish a technical advisory committee to provide design and development of appropriate data points and reporting methods.
- Create response standards.
- Create standards for reporting for the system.
- Implement data capture and reporting on a system-wide basis.

Fiscal Considerations

- No significant financial considerations.

AA – Implement the Use of Peak Activity Units (PAUs)

Level of Cooperation

- Functional

Timeline for Completion

- Mid Term

Section

- EMS, Emergency Operations, and Training

Affected Stakeholders

- All Agencies

Objective

- Provide special response units in areas of high incident activity and for replacement of units attending training sessions or called to cover special events.

Summary

As part of collaborative efforts, Westshore fire departments may enter into agreements such as training, dispatching, occupational medicine, public education, and standards of response for deploying resources. Maintaining adequate emergency capability during these and other activities may require the use of non-traditional staffing strategies.

One such method is to staff additional emergency response units as needed. These units are sometimes referred to as Peak Activity Units (PAUs). A PAU (i.e., pumper, medic, ambulance, squad, or aerial device) can be staffed for a scheduled event, for periods of peak demand, or to cover a response zone while other fire personnel attend training. Adding PAUs as an adjunct to current staffing patterns adds flexibility to fire department emergency operations.

Discussion

A traditional fire company is staffed by three or four personnel and is continuously available 24-hours per day to respond to emergencies. Move-ups (the repositioning of a fire company to cover understaffed response zones due to emergencies or training) has been a long-standing practice of many fire departments. Only recently as a result of more powerful analytical tools have some fire departments become more aggressive with move-ups, spawning such terms as “dynamic redeployment,” “system status management,” and PAUs.

For the purpose of this discussion, we assume that a PAU would be operated by three personnel and would be made available for response 12 hours per day, six days per week. A

PAU can be activated for a scheduled event, for periods of peak demand, or to cover a response zone while other fire personnel attend training. Adding PAUs as an adjunct to staffing patterns adds flexibility to fire department emergency operations.

It should be noted that a PAU would have staff assigned that may work a different schedule than the hours worked by typical firefighters. An example of this type of staffing schedule is shown in the figure below. A total of six suppression personnel, two officers, two engineers, and two firefighters work a 48-hour workweek. Each person is assigned two 12-hour shifts and one 24-hour shift. Under this arrangement when working a 24-hour shift, it is possible that a person could be assigned to fill a vacancy of another company during the second 12 hours.

> *Note: Any discussion of alternative working schedules is only hypothetical and is used here as a way of illustrating this partnering strategy. Any and all proposed changes to work schedules and working conditions must be conducted through a collective bargaining process with representatives of the respective firefighter associations.*

Figure 184: Sample Schedule for Staffing a PAU Engine

Sample Schedule for Staffing a PAU Engine						
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
Officer – 24 hours	Officer – 12 hours	Officer – 12 hours	Off	Off	Off	Off
Engineer – 12 hours	Engineer – 24 hours	Engineer – 12 hours	Off	Off	Off	Off
Firefighter – 12 hours	Firefighter – 12 hours	Firefighter – 24 hours	Off	Off	Off	Off
Off	Off	Off	Officer – 24 hours	Officer – 12 hours	Officer – 12 hours	Off
Off	Off	Off	Engineer – 12 hours	Engineer – 24 hours	Engineer – 12 hours	Off
Off	Off	Off	Firefighter – 12 hours	Firefighter – 12 hours	Firefighter – 24 hours	Off

Other possible configurations for staffing PAUs include but are not limited to:

- Staff a PAU with overtime/callback personnel to meet individual situations. A PAU may be deployed for training sessions, fire prevention activities, special community events, and anticipated peak activity periods.
- Staff an engine with three personnel available 12 hours per day, seven days each week. The staffed hours would be adapted to cover the time when the greatest number of calls for service typically occurs.
- Staff a medic or ambulance with two personnel available 12 hours per day, seven days each week. The staffed hours would be adapted to cover the time when the greatest number of calls for service typically occurs.
- Staff a PAU with personnel eight hours per day, five days each week.

- Staff a PAU 24 hours per day, seven days each week and make it available to post in areas experiencing high call volume.

Critical Issues

- Discussions involving any changes to work schedules and or working conditions must be conducted with representatives of the respective firefighter associations.
- Training issues
  - The personnel used to provide PAUs will need to be included in on-going training activities.
  - The personnel on PAUs must be cross-trained to understand the management structures and oversight capabilities of each host agency.
- Roles and responsibilities
  - Westshore agency partners should clearly define roles and responsibilities of the personnel on PAUs. The roles and responsibilities should be clearly communicated to all personnel and not limited to those assigned to a PAU.
  - Fire agencies should have integrated electronic reporting mechanisms for incident reports. Personnel that staff PAUs should not have to learn multiple reporting methods based on where they happen to be temporarily assigned.
  - Lines of supervision for PAUs must be clearly defined.
- Financial and fiscal considerations
  - Agencies will need to determine how the cost of PAUs will be allocated if personnel staffing PAUs are shared.
  - If a PAU has EMS responsibilities, it may be necessary for some agencies to purchase integrated patient care reporting systems so that personnel can provide patient care reports irrespective of where they are assigned.

Guidance

- Do not limit potential options for non-traditional staffing.
- Develop guidelines for uniform incident reporting guidelines.
- Establish standards for fire and EMS electronic reporting and integrate those standards across the system.
- Establish standards for deploying personnel between agencies.
- Align agencies to provide appropriate oversight irrespective of where the personnel are assigned.
- Ensure agency support for standardized personnel services.

Fiscal Considerations

- Financial support will be necessary and a process for allocating costs between agencies will be required.

- The agencies must determine whether and what type of hardware and software will be needed for incident reports.

AB – Provide Joint EMS Supply Purchasing and Logistics Services

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- EMS

Affected Stakeholders

- All Agencies

Objective

- Standardize supply purchases through group purchasing and standardize supply distribution.

Summary

Collaborating for supply and logistics in an EMS system allows agencies to achieve "right-column" pricing on EMS supplies and equipment, to reduce average transaction costs, and to gain the benefits of standardizing equipment. The agencies can work together to create a joint purchasing and logistics program. The purchasing program can create joint bids for supplies and equipment and can achieve additional benefits such as integrated inventory of supplies that can accommodate lag times in deliveries from manufacturers and suppliers.

Discussion

A multi-agency purchasing program could improve the management of the agencies' supply chains. In theory, the agencies would collectively create or contract for a logistics center to manage the purchasing process. The logistics center would work with each of the agencies to standardize supplies and equipment. It would follow state and organizational purchasing guidelines to conduct bids for products and then make those products available to all of the agencies.

Distribution can be managed internally or through agreements with suppliers to gain the advantages of collective purchasing and supply: 1) a larger, collective bid process for supplies can achieve lower prices and attract additional competitors; 2) the logistics center can negotiate terms of the conditions of the sale that might not be available to smaller purchasing centers; and 3) it can conduct collective bidding processes that are applicable to all of the agencies.

Coordination of activities is critical to the success of a joint purchasing program. Each of the agencies currently conducts purchasing of EMS supplies and equipment independently. As such, any joint efforts will reduce the level of effort required by each agency to provide joint purchasing services.

Critical Issues

- Coordination issues
  - A cross-functional committee of system purchasing agents and system participants can work together to design purchasing rules for each agency.
  - The committee can provide a standardized equipment list for agencies.
  - The agencies can share bidding processes, so that the bidding procedure used by the purchasing agent can be used by all agencies.
  - Agencies must work closely with the cross-functional committee to ensure that the goods are received and distributed to the appropriate location.
  - Agencies should have agreements in place to specify inventory and purchasing plans.
- Receiving and distribution considerations
  - Agencies should design distribution plans to deliver goods directly to the appropriate location. Using a joint purchasing system, the agencies will no longer have to receive goods at the agency; instead, they can receive goods at the appropriate fire station or ambulance location.
  - The agencies can jointly determine the proper level of inventory to maintain within the system. The use of system-wide inventory planning ensures that the most cost-effective inventory management can be established for the system participants.
- Financial and fiscal considerations
  - Marginal costs of creating system-wide purchasing infrastructure should be compared against the reduced level of effort of individual agencies.
  - Cost saving can be achieved through reducing inventory carrying costs, reducing transaction costs, and achieving economies of scale through larger volume purchasing.
  - The participating agencies should agree on contributions to account for more difficult to discern costs such as freight charges and unit costs for warehousing space.

Guidance

- Develop a system-wide, cross functional committee to explore a joint purchasing process.
- Work with elected officials to adopt purchasing requirements that help the agencies meet purchasing goals and guidelines.

- Establish standards for EMS system equipment and supplies.
- Establish inventory standards and methods for distributing equipment and supplies.
- Contract for or align agencies to provide logistics and supply services.

Fiscal Considerations

- Financial support will be necessary, as agencies will be required to meet the costs of creating or modifying existing logistics systems.

AC – Develop Deployment Standards

Level of Cooperation

- Functional

Timeline for Completion

- Short Term

Section

- EMS and Emergency Operations

Affected Stakeholders

- All Agencies

Objective

- Develop deployment standards that establish the distribution and concentration of emergency resources, both fixed and mobile.

Summary

All agencies have policies for deploying resources, albeit at times informal and undocumented. Developing standards for response and coverage will formally define the distribution and concentration of the fixed and mobile assets of an emergency organization. The process of standards development includes reviewing community expectations, setting response goals, and establishing a system of measuring performance. The resulting plan includes all aspects of the community and organization that are required to create response standards and to determine the ideal use of resources.

Discussion

The information contained in this partnership opportunity is extracted from *Creating & Evaluating Standards of Response Cover for Fire Departments*.[104] This excerpt is from the Introduction and Chapter 1:

> *The material was originally designed as an assignment to the accreditation task force of the International Association of Fire Chiefs (IAFC). When the task force was turned into a commission, the Commission on Fire Accreditation International, Inc. (CFAI) it was included in the accreditation manual Fire and Emergency Service Self-Assessment Manual.*
>
> *All agencies have an existing policy (for deploying resources), even if it is undocumented or adopted by the locally responsible elected officials. Originally,*

[104] *Creating & Evaluating Standards of Response Cover for Fire Departments*, Fourth edition, Introduction, Commission on Fire Accreditation International, Inc, 2003, Chantilly, VA.

stations and equipment were situated to achieve certain expectations. How and why they were sited needs to be historically understood, described, and contrasted to proposed changes.

This process uses a systems approach to deployment rather than a one-size-fits-all prescriptive formula. In a comprehensive approach, each agency should be able to match local need (risks and expectations) with the costs of various levels of service. In an informed public policy debate, each city council or governing board "purchases" the fire and EMS protection (insurance) the community needs and can afford.

There are usually three reasons to redo or challenge existing levels of service – expansion, contraction of service areas and change in risk expectations. Contraction is typically the result of a reduction in service area, a decline in risk or value, or a decline in available fire protection funding. Regardless of the reasons, elected officials should base changes in levels of service on empirical evidence and rational discussion leading to effective, informed policy choices. The purpose of the standards of response coverage process is to prepare fire service leaders to conduct just such an analysis and then lead an informed policy discussion.

The Standards of Cover systems approach consists of the following eight components:

- Existing deployment
- Risk identification
- Risk expectations
- Service level objectives
- Distribution
- Concentration
- Performance and reliability
- Overall evaluation

Standards of response coverage are defined as those written procedures that determine the distribution and concentration of fixed and mobile resources of an organization. The process includes reviewing community expectations, setting response goals and establishing a system of measuring performance. This plan encompasses everything an agency should understand to prepare and determine resource deployment.

If resources arrive too late or are under staffed, the emergency will continue to escalate drawing more of the agency's resources into a losing battle. What fire companies must do, if they are to save lives and limit property damage, is arrive within a short period of time with adequate resources to do the job. To control a

fire before it has reached its maximum intensity requires geographic dispersion (distribution) of technical expertise and cost effective clustering (concentration) of apparatus for maximum effectiveness against the greatest number and types of risk. Matching arrival of resources with a specific point of fire growth or medical problem severity is one of the toughest challenges for chief fire officers today.

Some medical emergencies such as multiple car collisions or industrial accident rescues require speedy arrival of multiple crews to control the scene, perform rescue operations, and provide medical care. A high-risk area requires timely arrival of fire companies for several reasons. More resources are required to rescue people trapped in a high-risk building with a high occupancy load than in a low-risk building with a low occupancy load. More resources are required to control fires in large, heavily loaded structures than are needed for fires in small buildings with limited contents.

Most emergency medical incidents require the quick response of single fire crews to limit suffering and to rapidly intervene in life-threatening emergencies. Small, incipient fires need the prompt response of a local fire company to mitigate and terminate the emergency quickly without additional help. For these typical, daily situations, all areas of the city with similar hazards and risks should receive equal service. This is why distribution planning strives for equity and timely service objectives.

Therefore, creating a standards of response coverage plan consists of decisions made regarding distribution and concentration of field resources in relation to the potential demand placed on them by the type of risk and historical need in the community. Furthermore, if a standards of cover is to be meaningful to the community, the outcomes must demonstrate that lives are saved and property is protected.

To clearly define standards of response coverage, agencies should have a policy statement regarding how risks are categorized within the context of their own jurisdiction. Because of the wide range of complex issues for which individual agencies are held accountable, it is necessary that there is a method for identifying risks and expected outcomes. Based upon that risk assessment and anticipated workload, a standard of response coverage is developed for fire fighting and EMS functions. It is recognized within the fire service profession that this evaluation must take into account both the frequency and severity of the most common types of incidents.

Critical Issues

- Exercise caution when developing a standards of cover. Even minor changes when setting service level objectives can have broad impact.

Guidance

- When developing a standard of cover, reference *Creating & Evaluating Standards of Response Cover for Fire Departments*.

- Review existing Westshore standards of cover documents, deployment standards, and response time standards. Use the opportunity to learn from those who have already developed a standard of cover.

- Prior to developing or modifying standards of cover, elected officials, administration, and staff should be educated on and have a clear understanding of the process.

- Westshore fire departments should develop standards of cover collectively and have agreements in place to specify deployment plans.

- When evaluating capabilities and setting performance standards for a community, size and population density often place direct demand upon the department with respect to community expectations. Different expectations are often found in urban, suburban, rural, and frontier communities.

- Developing a standard of cover is a loop process. For example, if after establishing risk category expectations the resultant response plan is found to be too expensive, the facilitator of the process might re-challenge the community's elected leaders to lower service expectations, or to find additional funding.

Fiscal Considerations

- Change, however minor, in current service level goals may result in dramatic change to the deployment and distribution. A change in service level goals may require:
  - New facilities or modifications to existing ones
  - New apparatus
  - Additional personnel
- Marginal cost of staff time to develop a standard of cover.

Findings and Recommendations for Action

Findings

Based on all of the preceding work of project, and based on our experience with other projects of similar character and scope, we draw certain conclusions regarding the Westshore fire departments, the region, and the opportunities for collaboration. A summary of those findings follow.

Recommendations

It is common for those in the fire service to tout themselves, or their department in terms such as "a pride-driven organization that is at their best every day," and "the best by test," or more simply, "the best." The true mark of quality of the best fire departments however, is working continuously for measurable improvement in organizational performance. By undertaking this study of collaborative opportunities, the leadership of the Westshore COG have begun the task of organizational and system evaluation that is necessary to plan for and reach the goal of truly being the best.

> *Success is peace of mind, a direct result of self-satisfaction in knowing that you did your best to become the best that you are capable of becoming*
>
> — John Wooden

We intend no suggestion that the Westshore fire departments are not already operating at a high level. In fact, we are pleased to report all available evidence shows that the region's fire departments consistently provide excellent service to the citizens of the protected communities. However, in keeping with the notion of continuous improvement wherein an unending loop of performance, measurement, and evaluation leads to system enhancements that would otherwise be impossible, we offer recommendations to assist the Westshore fire departments to implement the collaborative strategies that will best benefit the public.

The success of adopting and implementing cooperative opportunities depends on many things. In our experience with dozens of functional, operational, and legal unifications, leadership is the single factor that most frequently determines success. Nearly always, a key staff, councilor, or board member champions the concept garnering the support of the various affected groups (political, labor, member, and community). In addition, good leadership fosters an organizational culture receptive to planning, calculated risk taking, and flexibility. The manner in which leaders promote a trusting relationship between all groups and aid two-way communication between them is essential. From these issues, research by Kohm, Piana, and

Gowdy identifies five factors that most often seem to contribute to the successful implementation of a partnership or consolidation.[105] The five factors are:

- A leadership that believes strongly in the partnership and demonstrates this belief, often by acting selflessly to maintain it.
- Multiple forms of communication to keep all persons (governing board, staff, members, and community) up to date about plans, problems, and benefits concerning the partnership.
- Face-to-face communications with partner organizations in the forms of meetings, training, and other forums to build trust and understanding among staff.
- Flexibility through an expectation that even in the best-planned partnership unforeseen issues will arise, mistakes will be made, and alternative paths will be identified.
- Early evidence of benefit to assure everyone that they are on the right track, such as better or less expensive employee benefits or improved facilities.

Kohm, Piana, and Gowdy term the establishment of an on-going relationship between two or more independent organizations as *strategic restructuring*. The relationship is generally created to increase the administrative efficiency and/or further the programmatic mission of one or more of the participating agencies through shared, transferred, or combined services, resources, or programs. Restructuring may be thought of as a continuum that ranges from jointly managed programs (such as mutual aid agreements) to complete organizational merger.

The Westshore fire departments should promptly and systematically implement as many of the feasible cooperative opportunities as is possible. It is important that the group exercise proper management of the process, but at the same time it is also important not to get bogged down by bureaucracy. Long-term success of many of the initiatives may depend on short-term evidence of improvement and benefit. Consequently, the establishment of a steering committee is recommended to assure that the process moves forward without delay.

> *Establish an Oversight Board to Plan and Manage the Implementation of Feasible Collaborative Opportunities* – We recommend that the Westshore fire departments empanel an oversight board comprised of agency representatives and other affected parties. The group should assume responsibility for prioritizing, and determining the sequential order for implementation of all feasible collaborative opportunities. The oversight board should have the authority and accountability to initiate all opportunities within established budgetary and governance limitations.

[105] Amelia Kohm, David La Piana, and Heather Gowdy, *Strategic Restructuring, Findings from a Study of Integrations and Alliances Among Nonprofit Social Service and Cultural Organizations in the United States,* Chapin Hall, June 2000.

The following recommendations are judged as being most likely to result in significant improvement to systems and/or programs. These initiatives should be acted on regardless of action on the remaining feasible opportunities.

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Appendix B: Summary Table of Kudos

Kudos 1: Fairview Park, Lakewood, North Olmsted, North Ridgeville, Rocky River, and Westlake were recipients of a Certificate of Excellence in Financial Reporting for their CAFRs presented by the GFOA for the year 2007. 39

Kudos 2: The obvious camaraderie and cooperation between police and fire administration and dispatch center personnel translates into low employee turnover and job satisfaction at the North Olmsted 9-1-1/Dispatch Center. 243

Kudos 3: Employee morale and a low turnover at the Lakewood Communications Center can be connected to the use of FTOs and established, well-documented SOPs. 251

Kudos 4: WestCom is providing EMD (emergency medical dispatch) instructions through the APCO program. 266

Kudos 5: WestCom is in the process of finalizing a new employee training program. Delivering instruction, education, and training to newly hired employees is considered an expedient use of time, funds, and effort. 266

Appendix C: Summary Table of Recommendations

Recommendation 1: Bay Village, Fairview Park, North Ridgeville, Rocky River, and Westlake should jointly complete a full revision of their policies and procedures. Routine (annual at a minimum) review and updates to policies should occur. 32

Recommendation 2: Given that Bay Village, Fairview Park, North Ridgeville, Rocky River, and Westlake Fire Departments protect similar risks, use similar resources, and have similar objectives, all five departments should consider the development of a regional set of Standard Operating Guidelines. Incorporate variations for local issues only where necessary to accommodate unique issues or equipment. 32

Recommendation 3: Bay Village, North Olmsted, and Westlake fire departments should review and revise job descriptions and classifications for accuracy and relevancy. 37

Recommendation 4: Each agency should review and update job classifications and descriptions. Job descriptions should accurately reflect typical responsibilities and activities of the position; include required and desired qualifications and physical requirements. 37

Recommendation 5: All seven fire departments should conduct strategic planning processes that include department and community stakeholders in the process of reviewing and revising mission statements, determining organizational vision, and the developing goals and objectives. 60

Recommendation 6: Rocky River FD should establish a schedule of regular staff/officers' meetings to review current issues, perform team problem-solving, and review progress on department goals and objectives. 71

Recommendation 7: North Olmsted and Rocky River FDs consider the use of an employee newsletter to improve both formal and informal communication and social interaction. 72

Recommendation 8: North Olmsted and North Ridgeville FDs should establish policies and procedures for maintaining bulletin board space to ensure important information is readily identifiable. 72

Recommendation 9: Fairview Park, Lakewood, North Olmsted, and Rocky River FDs should issue and use departmental e-mail for all staff. 72

Recommendation 10: Fairview Park and Westlake FDs should make voicemail services available to key officers. 72

Recommendation 11: The cities of Fairview Park, North Olmsted, and Rocky River should consider a regular community newsletter containing information authored by their respective city departments. 72

Recommendation 12: The cities of Fairview Park, North Ridgeville, and Rocky River should occasionally use customer survey instruments to collect input on concerns and priorities from citizens. Information can be used to direct fire department planning processes. 72

Recommendation 13: Bay Village, Fairview Park, North Olmsted, North Ridgeville, Rocky River, and Westlake FDs should establish a formal, written process for documenting and handling complaints from the public. 72

Recommendation 14: Fairview Park and North Ridgeville FDs should improve security of paper records, including the use of passage and container locks. 79

Recommendation 15: Fairview Park FDs should enforce policies and procedures of fire station security and improve consistency in the locking and securing buildings and the protection of assets. 79

Recommendation 16: Fairview Park, North Ridgeville, Rocky River and Westlake FDs should occasionally change lock keys and codes to prevent unauthorized access by orphan keys. 79

Recommendation 17: All seven fire departments should use security alarms on fire stations for periods when they are unoccupied: training, inspections, responses, and routine activities. 79

Recommendation 18: Fairview Park, North Ridgeville, and Westlake FDs should use monitored fire and smoke alarm systems in fire stations to improve safety. 79

Recommendation 19: Fairview Park FD should improve access security to computers and workstations. 79

Recommendation 20: The seven fire departments should standardize response protocols region-wide. . 94

Recommendation 21: Develop and fund a long-range facilities management plan for the seven fire departments in accordance with projected service demand. 119

Recommendation 22: Initiate corrections of deficiencies to existing facilities and continue planned remodeling projects. 119

Recommendation 23: Improvement in general housekeeping at each of the reviewed facilities. 120

Recommendation 24: Develop a regional, cooperative long-range facilities management plan to provide for future facilities in locations best suited to serve the entire region; regardless of jurisdiction. Create cooperative agreements to operate from shared facilities. 120

Recommendation 25: Develop a group purchasing program for capital and routine purchases and for services contracts (i.e. ladder testing, self-contained breathing apparatus, turnout gear, and hose). 132

Recommendation 26: Develop and fund a program for the replacement of small equipment for the seven departments. 132

Recommendation 27: Mount equipment in compartments. 132

Recommendation 28: Establish SCBA maintenance and cleaning programs. 132

Recommendation 29: Continue to annually test ground and aerial ladders in accordance with NFPA standards.' 132

Recommendation 30: Continue to annually test fire hose in accordance with NFPA standards. 132

Recommendation 31: Continue to annually test fire pumps in accordance with NFPA standards. 132

Recommendation 32: Develop and fund a replacement program for personal protective equipment (PPE) for the seven fire departments. 135

Recommendation 33: Establish an inspection and maintenance program for PPE. 135

Recommendation 34: The departments should establish a budget to support the on-going training of firefighters and officers. 209

Recommendation 35: Management and key personnel should attend a national seminar or conference every other year at a minimum (i.e., National Fire Academy, International Association of Fire Chiefs, Executive Fire Officer). 209

Recommendation 36: Establish a formalized training schedule forecasting at least six months in advance, develop lesson plans outlining the goals and objectives each training session, and assure the lesson plans are in line with policies and procedures. 209

Recommendation 37: Reinstate multi-company and multi-agency training to assure that responding fire departments are familiar with the capabilities and operating procedures of the consolidated department. 209

Recommendation 38: Adopt a company officer development program that offers consistent training to officer candidates. 209

Recommendation 39: Chief officers and chief officer candidates should be offered advanced training. . 209

Recommendation 40: Expand the interactive video training and conferencing initiated by North Ridgeville FD to include all seven fire departments. 209

Recommendation 41: Apply for state and federal grants for training, equipment, facilities, and personnel. 209

Recommendation 42: Maintain the “We Share” and “EMS Jane” continuing education programs. 209

Recommendation 43: Absent the creation of a regional fire prevention bureau, two captains should be appointed to oversee the areas of prevention/public education and investigations in each department. 219

Recommendation 44: Priority should be given to the development and adoption of a single Westshore Fire Code, with a local board of appeals and using municipal court for regular citations. 219

Recommendation 45: Develop a fee structure for plans review, inspections, and re-inspections. 219

Recommendation 46: Consider a 'Self-Inspection' program for mercantile or commercial occupancies on the years they will not receive an on-site inspection. 219

Recommendation 47: Disseminate information found during inspections to operations and company officers to update pre-plans. 219

Recommendation 48: Fund fire prevention bureaus to maintain certifications and offer training to personnel aspiring to serve in fire prevention. 219

Recommendation 49: Upgrade fire investigation equipment and outfit one or more vehicles with the supplies and equipment to handle fire cause determinations in accordance with *NFPA 921* standards. 219

Recommendation 50: Provide all officers and firefighters with additional training in fire investigation awareness (what to do and what not to do) and public education. 219

Recommendation 51: Evaluate best practices between the fire departments and coordinate and adopt through a cooperative effort. 219

Recommendation 52: Consult the guidelines of the Commission on Fire Service Accreditation International, Ohio State Fire Marshal's Office, and NFPA Standards and standardize fire prevention, public education, and investigations practices. 219

Recommendation 53: Apply for federal, state, and private grants to purchase specialized equipment for public education and fire investigative purposes. 219

Recommendation 54: Consider bringing all dispatch duties into the regional center, particularly those related to medical incidents. 226

Recommendation 55: Ensure compliance with HIPAA rules and regulations. 227

Recommendation 56: Implement and adopt a uniform method of data collection and reporting. 228

Recommendation 57: Implement a single computerized Patient Care Reporting (PCR) system. 228

Recommendation 58: North Olmsted 9-1-1/Dispatch Center - Review position description for Radio Dispatcher and update. 235

Recommendation 59: North Olmsted 9-1-1/Dispatch Center - Establish a minimum goal of 24 hours annual continuing education training per communications employee. 236

Recommendation 60: North Olmsted 9-1-1/Dispatch Center - As upgrades occur in center technologies, initiate performance standards for baseline benchmarking. Adopt performance standards in a Standard Operating Policy/Procedure. 239

Recommendation 61: North Olmsted 9-1-1/Dispatch Center - Bundle the CAD and RMS modules with equipment for application under a fire grant, or a capital outlay/planning program for upgrade of the 9-1-1 telephone controller and addition of the CAD fire module with integrated RMS based on priority of need. 242

Recommendation 62: Lakewood Communications Center - Consider adding the following requirements to either the position description or the requirements listed by the City for required or desired qualifications: 246

Recommendation 63: Lakewood Communications Center - Establish a realistic continuing education annual training goal affording more training hours per employee than currently provided. 247

Recommendation 64: Lakewood Communications Center - As upgrades occur in center technologies, adopt performance standards for call answer to dispatch notification to measure against data collected on software programs. Adopt performance standards in a Standard Operating Policy/Procedure. 248

Recommendation 65: Lakewood Communications Center - Budget documentation for the dispatch division indicates plans are in the beginning stages for capital improvements to the dispatch center and CAD system. Realizing public entity financial constraints, the following replacement/upgrade of equipment requires prioritization: 250

Recommendation 66: WestCom - Develop an organizational chart accurately reflecting the governing structure and lines of authority. 253

Recommendation 67: WestCom - Determine if a description of service levels provided to the contracting agencies is necessary. This includes a method of formalizing service levels provided through an MOU or modification of creating ordinance. A partial listing of examples of service levels includes: 257

Recommendation 68: WestCom - Develop an informational handout utilizing the charge-out explanation in this document or a similar one developed in-house. 257

Recommendation 69: WestCom - Initiate a skills testing program during the hiring process that measures/quantifies processes required for a dispatcher in a multi-agency environment. An example is the CritiCall® testing program software. 259

Recommendation 70: WestCom - Adopt the annual training requirement in written format as a Standard Operating Policy. 260

Recommendation 71: WestCom - Detail performance standards and medical dispatch processes required by the APCO program. Formalize this in an Emergency Medical Dispatch SOP, identifying the name of the program used, and an outline of the quality assurance program with performance and processes. . 261

Recommendation 72: WestCom - Determine whether policy statements are beneficial to the administration and operating requirements of the center. 262

Recommendation 73: WestCom - Develop a performance standard meeting NFPA 1221 standards including call answer time, call set-up to initial dispatch notification. Formalize in a SOP format. 263

Recommendation 74: WestCom - Investigate the addition of a broadband line for all internet applications and connections within the center. 265

Recommendation 75: WestCom should consider adding an IT person to provide maintenance and development for infrastructure technologies. 267

Recommendation 76: A portion of the monies realized as cost avoidance should be applied to a reserve fund for capital purchases: facilities, apparatus, equipment, and maintenance. 332

Appendix D: Frequency Assignment by Dispatch Center

North Olmsted Dispatch Center					
	TX	**RX**	**PL**	**Description**	**Comments**
North Olmsted Fire Department	154.250			Main Dispatch	Same primary dispatch channel as WestCom
	153.830		110.9	Fireground	
	155.610			North Olmsted Police	
Lakewood Dispatch Center					
	TX	**RX**	**PL**	**Description**	**Comments**
Lakewood Fire Department	453.337			Fireground	Lakewood Public Safety is UHF frequencies with VHF programmed for mutual aid and some city services
	460.600			Dispatch	
	465.600			Fireground/TAC	
	154.250			WestCom Primary Dispatch	
	153.830			Westshore Fireground	
WestCom Central Dispatch					
	TX	**RX**	**PL**	**Description**	**Comments**
Bay Village Fire Department	154.250	151.475		WestCom Primary Dispatch	
	153.830			Fireground	
	154.280			County/State Fire	
	TX	**RX**	**PL**	**Description**	**Comments**
Fairview Park Fire Department	154.250	151.475		WestCom Main Dispatch	
	154.280			County/State Fire	
	153.830			Fire ground	
	TX	**RX**	**PL**	**Description**	**Comments**
North Ridgeville Fire Department	428.400	423.400		Main Dispatch Frequency	WestCom dispatches North Ridgeville FD on their UHF frequency North Ridgeville primary PSAP is Lorain County 9-1-1
	423.400			FD Talkaround	
	154.280			County/State Fire	
	154.370			Lorain County Fire	
	154.400			Fireground/Haz Mat 2	
	153.830			Fireground	
	154.250			WestCom Main Dispatch	
	TX	**RX**	**PL**	**Description**	**Comments**
Rocky River Fire Department	154.250	151.475		WestCom Primary Dispatch	
	153.830			Fireground	
	TX	**RX**	**PL**	**Description**	**Comments**
Westlake Fire Department	154.250	151.475		WestCom Primary Dispatch	
	153.830			Fireground	
	155.805			Disaster Channel	
	154.280			City/State Fire	

The above frequency assignment table is not all-inclusive. Many of the agencies hold licenses and agreements for their city public services and with neighboring public safety agencies. Several agencies still carry licenses for HEAR frequencies, although reportedly, HEAR is no longer utilized in operations.

Appendix E: Communications Best Practices

Core Area: Organizational

1. Sub-Component: Organizational Agreements

Best Practice:

Written agreements governing public safety communications services provided by the agency include:

- Statement of services to be provided
- identification of geographic boundaries
- Financial agreements (financial support) between the parties
- Organizational structure, levels of cooperation, and scope of authority
- Stipulation that the communications agency maintains control over its personnel
- Process for defining policy development, operational standards, decision-making process, command protocols, and service priorities
- Records to be maintained concerning the performance of services by the communications agency, including audit and review process
- Arrangements for the use of equipment and facilities
- Process for review and revision of the agreement including dispute resolution if needed.[106]

Comment: Not applicable to Lakewood or North Olmsted Dispatch Centers.

2. Sub-Component: Organizational Chart

Best Practice:

The agency's organizational structure is depicted graphically on an organizational chart. The illustration coincides with a written description describing formal lines of authority and communication. The structure of each organizational component is under the direct command of one supervisor.[107]

3. Sub-Component: Mission Statement

Best Practice:

The mission statement evolves from its legal authority and core values. The written mission statement defines major services and prominently posted.[108]

4. Sub-Component: Center Standards

Best Practice:

The agency provides a performance measurement program (performance standards) identifying key personnel responsible for overseeing processes of performance measurement, data collection and processing, data cleaning, and reporting.[109]

The agency distributes performance results to user agencies on a time specification for of distribution. [110]

[106] CALEA Communication Assessment Criteria.
[107] Ibid.
[108] Ibid.
[109] Ibid.
[110] Ibid.

Compliance with NFPA 1221, 7.4.2: Alarm processing time standards shall be evaluated monthly using data from the previous month.[111]

Comments: Both the Lakewood and WestCom Dispatch Centers have informal performance standards. Lakewood has some standards within their dispatch manual, although not identified as standards. WestCom has some informal standards in memo format.

Performance standard examples:

- *95 percent of alarms received on emergency lines shall be answered within 15 seconds and 99 percent of alarms shall be answered within 40 seconds.* [112]
- *Ninety-five percent of emergency call processing and dispatching shall be completed within 60 seconds, and 99 percent of call processing and dispatching shall be completed within 90 seconds.*[113]
- *Minimum staffing levels requirement by shift or hour.*
- *Minimum requirement annual on-going education hours.*
- *All agency service inquiries (issues/complaints), whether from a citizen or fire/police agency, are investigated and results provided within a time certain. Annual tracking and reporting of all service inquiries with outcomes is maintained.*

Core Area: Operational Practices

1. Sub-Component: Hiring

Best Practice:

Testing instruments reflect the job classification, position description, contemporary public safety communications practices and skills, and identify the ability of an applicant to satisfactorily perform position functions.[114]

A background investigation of each candidate is conducted prior to appointment to probationary status. The background includes verification of qualifying credentials; a review of any criminal record; and verification of at least three personal references.[115]

Comments: Only North Olmsted requires skills testing during the employment process. All of the dispatch centers conduct background checks.

2. Sub-Component: Staffing/Turnover

Best Practice:

The center predicts vacancies and assures authorized positions are filled through the management of turnover, i.e. proactive hiring processes. [116]

Centers experiencing predictable turnover need to take a proactive approach, assuring applicants are in the pipeline rather than waiting for resignations before initiating the process for hiring replacements.[117]

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[111] *NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications,*Systems, 2007 Edition, Chapter 7, Operating Procedures. 7.4.2.1.

[112] *NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*,2007 Edition, Chapter 7 , Operating Procedures,

[113] *NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, 2007 Edition, Chapter 7, Operating Procedures, 7.4.1.

[114] CALEA Communication Assessment Criteria.

[115] Ibid.

[116] APCO Project RETAINS, Staffing and Retention in Public Safety, Staffing Workbook, p. 27.

Comments: In the 2005 Report, APCO Project RETAINS, average turnover rate nationwide is 17 percent. [118] *Both Lakewood and North Olmsted are exceptional in their ability to retain employees.*

3. Sub-Component: Position Descriptions

Best Practice:

The agency maintains current job descriptions covering all employees. A job description for each job within the agency is available to all personnel and based on a detailed audit of all current skills, abilities, responsibilities, authority, training, and certifications required for the position. [119]

Comments: Agencies with position descriptions indicating 'Needs Improvement' require updating to meet standards and requirements found in today's emergency communications center environment.

4. Sub-Component: Training New Hire and On-going Continuing Education

Best Practice:

The agency adopts a formal mechanism to establish training requirements to meet minimum training standards that is competency based and identifies basic skills, knowledge, and attitudes required to successfully serve in the critical role of a public safety telecommunicator.[120]

An agency provides a written plan regarding Coach (CTO) selection process, training, supervision of trainers, reporting responsibility and liaison with theory classroom training.[121]

A comprehensive Training Program utilizing certified CTO's (Communications Training Officers) provides training necessary to foster levels of consistency for training officers providing on the job training, as well as to promote the leadership role of the CTO in a public safety communications center.[122]

The Agency shall require and ensure no less than twenty-four hours of continuing education or recurrent training for each telecommunicator annually. [123]

Comments: All dispatch centers reviewed require recognition for developing training programs with documentation (Daily Observation Reports), course outlines, and material. A 'Needs Improvement' rating in this area refers to APCO Best Practice requiring a formal selection process for trainers, and certification of those trainers through a recognized train-the-trainer program.

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[117] APCO Project RETAINS, Research Report, August 2005, p. 23.
[118] Ibid., p. viii.
[119] CALEA Communication Assessment Criteria.
[120] APCO Project 33 Revised 2006, Training Program Certification, pp. 1-2.
[121] APCO Project 33 Training Standards, New Language Draft, October 2009.
[122] Ibid.
[123] APCO Minimum Training Standards for Public Safety Communications Officer (CTO) APCO ANS 3.101-1-2007.

A 'Needs Improvement' under On-going Training refers to APCO Best Practice of 24 hours annually of on-going or continuing education. The hourly requirement can be a center goal that eventually becomes a standard.

5. Sub-Component: Quality Assurance

Best Practice:

Any Quality Assurance program requires adoption of specific policies and procedures in place to ensure adherence to program guidelines and procedures. [124]

Comments: *Whether for police/fire/or medical dispatch, a Quality Assurance Program of any kind requires standards measurement, review criteria, and process for report distribution documented in a policy/procedure. A beginning Quality Assurance Program does not require complicated standards and processes. A QA program can start out as a review of all working structure fires or eludes/pursuits to ascertain compliance to dispatch protocols.*

6. Sub-Component: Dispatch Protocols SOPs/SOGs

Best Practice:

Well-designed standard operating procedures clarify job requirements and expectations in a format readily applied on the job. They explain what the department wants them to do in the situations they are most likely to encounter. Departments cannot effectively operate without a comprehensive set of SOPs and required processes to develop and maintain them.[125]

Comments: Well written dispatch SOPs/SOGs are a critical core component for an emergency dispatch center. In a multi-agency environment such as WestCom, standardized procedures reduce errors and provide greater efficiencies and effectiveness in emergency service delivery.

Core Area: Facilities and Technologies

1. Sub-Component: Building/Facilities

Best Practice:

Separate non-critical functions from the emergency communications center by a two-hour fire barrier.[126]

Provide layered security from the front lobby to staff in the most secure areas such as communications dispatch and equipment rooms.[127]

The dispatch center requires two sources of power and independent heating, ventilating and air conditioning system from the rest of the building.

Communications equipment and the dispatch floor are the most secure and 'wrapped' within secondary areas of a building.[128]

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[124] APCO International, Public Safety Communications Magazine, Continuing Dispatch Education #20091, Stop Problems Before They Happen, November 2008, p. 49.

[125] Developing Effective Standard Operating Procedures for Fire and EMS Departments. Federal Emergency Management Agency, December 1999. p. 4.

[126] Emergency Number Professional Magazine, June-July 2008. Planning Best Practices. Steven Loomis, AIA, Nathan McClure ENP. Pp. 53-55.

[127] Emergency Number Professional Magazine, Loomis and McClure, pp. 53-55.

Comments: There are hundreds of specifications for an Essential Services/emergency communications facility. The Best Practices listed are primary/critical requirements for this type of facility.

2. Sub-Component: Consoles/Workstations

Best Practice:

> Workstation configuration should be "universal" providing flexibility in operations, allowing use for multiple dispatch disciplines, particularly in situations involving significant events.[129] The workstation must be functional, flexible, and adjustable to meet standards from the 5th percentile seated female to the 95th percentile standing male.[130] Good design that follows recommended ergonomic standards improves performance, minimizes injuries, and reduces turnover.

Comments: All three centers have universal workstations, in that they are redundant for call taking and dispatching duties. Ergonomic and adjustable workstations are no longer 'nice to have' equipment. They are standard best practice for emergency communications centers.

3. Sub-Component*:* Telephone Equipment/E9-1-1 Display/Interface to CAD

Best Practice:

> Telephone Systems must provide flexibility, excellent metrics, and ability to manage call flow on a daily basis from a variety of sources; i.e., TTY, cellular, Voice over Internet Protocol, wire line, and transferred telephone calls. These systems must integrate with management reporting tools to improve scheduling efficiencies, track call times, and call loading. [131]

Comments: The existing telephonic equipment at Lakewood, North Olmsted, and WestCom cannot be upgraded to handle NG 9-1-1 (Voice over Internet Protocol) calls or receive text messages. All will need eventual replacement. That being said, Murray Withrow, Director of CECOMS, indicates the State of Ohio will provide a contract price for the new systems. This pricing has yet to occur. According to Mr. Withrow, a rule of thumb is $250,000 per position, including back-end equipment. This is an informational item only at this time, as Ohio has yet to initiate standards for data transfer and routing for VoIP.

There are no reporting packages interfacing telephone and CAD allowing the tracking of call loading, call taking, and dispatch times for Lakewood or North Olmsted Dispatch Centers. This also means any time standard set by a communications center is not verifiable, nor actual response times captured for fire departments to meet NFPA 1710 standards (call receipt to dispatch).

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[128] Emergency Number Professional Magazine, June-July 2007. State of the Art Facilities, Loomis and McClure, pp 38-40.

[129] San Francisco Department of Emergency Management FY 2009-2010 Efficient Plan, February 2009, Vicki Hennessy, Executive Director, p 12.

[130] Emergency Number Professional Magazine, Ergonomics, - It's All About You, Volume 24, Number 6, August 2006, pp 20-24.

[131] NENA (National Emergency Number Association) NG9-1-1 Project, LEITSC (Law Enforcement Technology Standards), and C. Simpson, Director Denver Colorado Regional Center.

WestCom requires the reconfiguring of the MIS package on the Positron 9-1-1 system indicating better measurements of ring and talk time for purposes of meeting performance standards. This is a software re-configure and does not require expenditures. For any center, tracking of these times on an hourly/daily basis is important as it also affects staffing requirements. As performance levels (times) start slipping, this may be an indication additional staffing is required to meet call taking and dispatch performance standards.

4. Sub-Component: Recording/Logging Equipment

Best Practice:

The communications agency maintains a voice logging system for the continuous recording of radio transmissions and emergency/non-emergency telephone conversations within the communications center.

Comments: All dispatch centers maintain Tier 1 voice and radio logging recorders.

5. Sub-Component: CAD (Computer Aided Dispatch)

Best Practice:

The CAD system shall have the capability to allow alarm data exchange between the CAD system and other CAD systems.[132] Software that is a part of the CAD system shall provide data entry; provide resource recommendations, notification, and tracking; store records relating to all alarms and all other calls for service and status changes; and track those resources before, during, and after alarms/ incidents, preserving records of those alarms/incidents and status changes for later analysis.[133]

Comments: There is no interoperability (sharing of incident information) between any of the CAD systems utilized by the dispatch centers. Currently, there is a strong emphasis and recommendation by the Department of Homeland Security and the National Fire Protection Agency for CAD interoperability. CAD replacement and interoperability between adjoining jurisdictions has potential grant application.

The ability to obtain accurate, detailed reports required of a fire department is very problematic for Lakewood and North Olmsted.

There is a multitude of reports available from the WestCom CAD system. The reports provide fire department response, call type, and times by hour of day and shift among others. WestCom contracting agencies may want to designate the type of reports required from CAD by either monthly or quarterly reporting by WestCom.

6. Sub-Component: Radio System

Best Practice:

The public safety community requires interoperable communications, which is the ability to communicate and share information as authorized when it is needed, where it is needed, and in a mode or form that allows the practitioners to effectively use it.[134]

Comments: A level of Interoperability is available through the MARCS radio system and by adding other agencies frequencies to mobiles.

[132] NFPA 1221, 2007 Edition, Chapter 10, Computer Aided Dispatch, 10.4.1.
[133] NFPA 1221, 2007 Edition, Chapter 10. 10.5.6.
[134] Public Safety Statement of Requirements for Communication and Interoperability, Department of Homeland Security. October 2006, p. 1.

Other- Not Related to Best Practices/Standards

Technology Interfaces and Data Transfers

Interfaces and data transfers are standard, critical functions of a CAD system. In today's emergency communications environment, a center or first responder cannot meet the growing demands and standards placed upon them without appropriate interfaces and data transfers providing information and analysis to do the job correctly and efficiently.

Station Alerting Interface to CAD:

A Best Practice is not available for this interface. In ESCI's opinion, this is an essential interface for a dispatch center. A station alerting interface to CAD reduces steps in the dispatch process and reduces error rate. Once a dispatcher initiates a dispatch of a fire or medical alarm, instead of manually 'alerting a station', the CAD interface automatically selects and sends the correct alert tone.

Expansion Capability

The Lakewood Dispatch Center has room for a potential third position. The North Olmsted Dispatch Center does not. The larger computer display screens utilized by today's consoles places a demand center 'real estate' thereby increasing demands for center sizing.

Appendix F: WestCom Staffing Analysis

The staffing analysis is problematic when accurate statistical information is not available. ESCI did not have adequate telephone workload data from Avon Lake, Lakewood, or North Olmsted dispatch centers for the analysis. WestCom did provide accurate data. Therefore, ESCI utilized the WestCom ratio of dispatched calls to incoming 9-1-1 and 7-digit call volumes to calculate telephone traffic loading on the consoles for Avon Lake, Lakewood, and North Olmsted.

A total of the calculated incoming telephone calls and actual total response calls for the fire departments provide workload activities for calculating console staffing requirements for regionalization.

ESCI then applies the Erlang queuing theory to obtain the staffing analysis. The Erlang C distribution offers the probability of all servers (call takers/dispatchers) being busy and subsequently calculates average hour staffing requirements based on position activity.

It is important to consider the inherent peaks and valleys of staffing for all hours. Theoretically, an early morning shift requires less staffing than the average hour due to low demand during that time. Conversely, staffing during days and afternoon rush hour traffic is usually higher than average hour due to an increased demand during that active time.

Finally, ESCI compares the data and findings with the guidelines developed in the APCO Project.[135] Project Retains offers staffing guidelines and practices to reduce employee turnover and increase employee satisfaction.

Staffing levels may calculate to 3.4, 2.7, or 1.7 positions. The number is always rounded. A staffing requirement of 2.7 equals 3.0 full time positions. A staffing amount of 2.1 positions rounds to the lowest factor, or 2.0.

WestCom dispatchers provide other duties while on the console. On a working fire, WestCom places a dedicated dispatcher solely on the alarm. They provide medical dispatch instructions, GIS mapping updates, firefighter OT recall, training manual development and updates, and fire prevention site call-ins. As the staffing calculations provide telephone and alarm dispatching workloads only, they do not consider the additional duties and responsibilities of WestCom dispatchers. ESCI strongly recommends, when staffing indicates 3.4 positions, particularly

[135] APCO Project RETAINS, Responsive Efforts to Assure Integral Needs in Staffing, Staffing and Retention in Public.
Safety Communication Centers, Effective Practices Guide, Staffing Workbook, August 2005.

during day and evening shifts (0700 to 2300 hours) the staffing requirement rounds to 4.0 full time positions.

The actual hours of staffing a console is left to Management. There will be days of lower traffic when 4.0 consoles is not required (Sundays), or hours of the shift when a call taking console needs to come on shift early (0600) as the telephone call loading jumps significantly from 0500 hours to 0600 hours. On the flip side, as alarms decrease towards the end of evening shift, the center may staff down to only 3.0 consoles. Maintaining statistics and knowing the traffic loading by hour allows better utilization of personnel throughout a 24-hour period. This keeps a center from understaffing or overstaffing.

Based on APCO Project Retains, the following table provides average Net Available Work Hours (NAWH) per WestCom employee on an annual basis. The NAWH adjusts employee available time by subtracting average vacation, training, sick leave, etc., from total annual work hours (2080 hours). This allows a center to calculate staffing of console positions, which require 8,760 employee hours for one position, 365 days of the year.

Figure 185: APCO, Net Available Work Hours (NAWH) Per Employee

WestCom FTE Equivalency Factor	
Maximum Number of Hours Available per Person	**2080**
Average Amount of Hours Personnel are Not Available on an Annual Basis	
Annual Leave Time is Calculated on Accrued Time, Not Actual Time Off	
Vacation/Holiday	96.0
Sick Leave	56.0
Personal Leave	36.0
Training	24.0
Military, FMLA, etc.	10.0
Average Amount of Hours Personnel are Not Available on an Annual Basis	**222.0**
Sub-Total Number of Hours Available per Person	**1,858.0**
Meal Hours (8-hr shift)	
Break Periods (8-hr shift)	
Average Amount of Hours Personnel are Available for Position Staffing	**1,858.0**
Total Number of Hours/Staffing a Position	8,760.0
Number of WestCom FTE Required to Staff One Position (24 X 7)	**4.7**

The following table provides actual staffing calculations for Option 1: All Agencies Combined for Regionalization. Highlighted in orange, is percentage of channel utilization should all alarms be dispatched <u>and</u> tracked on the same radio channel.

Figure 186: Staffing Allocation FTEs, All Agencies

Option 1 – Combined All Agencies				
Combined Alarms: 23,127 – Combined Telephone Calls: 84,833				
Dispatch Positions Workload Analysis – Average Hour	**Average**	**Nights**	**Days**	**Evening**
Average Hour Incident Activity (Combined)	**2.6**	**2.2**	**3.6**	**3.4**
Estimated number of radio transactions per incident	*10.0*	*10.0*	*10.0*	*10.0*
Average Hour Transmissions/Fire Channels	*26.40*	*22.00*	*36.00*	*34.00*
Nt: number of transmissions per second	*0.007*	*0.006*	*0.010*	*0.009*
Tsd: Avg. time to process transmission	*90.00*	*90.00*	*90.00*	*90.00*
Channel Utilization: U = Nt x Tsd	*0.66*	*0.55*	*0.90*	*0.85*
Average Wait Time/Seconds	*174.72*	*110.00*	*810.00*	*510.00*
% of Channel Capacity Utilized	*165%*	*138%*	*225%*	*213%*
Actual Position Staffing Requirement	**1.7**	1.4	2.3	2.1
Call Taker Estimated Incoming Call Processing (Combined)				
Average hour/calls per hour	**9.3**	**2.6**	**15.0**	**10.3**
Twc: Average wait time in seconds	*6.0*	*6.0*	*6.0*	*6.0*
Nc: (Calls per second)	*0.0026*	*0.0007*	*0.0042*	*0.0029*
Tsc: (Seconds to process call)	*90.0*	*90.0*	*90.0*	*90.0*
Units of Workload (Nc x Tsc)	*0.2*	*0.07*	*0.4*	*0.3*
Units of Delay (Twc/Tsc)	*0.1*	*0.1*	*0.1*	*0.1*
Actual Position Staffing Requirement	**1.1**	0.6	1.4	1.3
Call Answering/Dispatch Position Staffing Requirements (Combined)	**2.8 (3.0)**	**2.0**	**3.7 (4.0)**	**3.4 (4.0)**
FTE Requirements (Combined)				**15.7 (16.0)**

The following tables contain the full work-up on staffing levels for call taking and dispatching by shifts required for each option.

Figure 187: Option 1 – WestCom Staffing Requirements All Agencies

Total Alarms = 23,127 Total Telephone Calls = 84,833			
Avon Lake	North Ridgeville		
Bay Village	North Olmsted		
Fairview Park	Rocky River		
Lakewood	Westlake		
Console Staffing	**Days**	**Evenings**	**Nights**
Dispatch Console Staffing	2.3	2.1	1.4
Call Taking Console Staffing	1.4	1.3	0.6
Combined Staffing	3.7	3.4	2.0
Recommend Total Staffed			
Consoles	4.0	4.0	2.0
Total FTE Requirements = 16.0 (15.7) (Dispatchers)			

Figure 188: Option 2 – WestCom Staffing Requirements Including Avon Lake

Total Alarms = 13,966 Total Telephone Calls = 49,251			
Avon Lake	North Ridgeville		
Bay Village	Rocky River		
Fairview Park	Westlake		
Console Staffing	**Days**	**Evenings**	**Nights**
Dispatch Console Staffing	1.3	1.3	0.5
Call Taking Console Staffing	1.1	1.1	0.5
Combined Staffing	2.4	2.4	1.0
Recommend Total Staffed			
Consoles	3.0	3.0	2.0
Total FTE Requirements = 13.0 (12.5) Dispatchers)			

Figure 189: Option 3 – WestCom Staffing Requirements Including Lakewood

Total Alarms = 18,733 Total Telephone Calls = 66,126			
Bay Village	North Ridgeville		
Fairview Park	Rocky River		
Lakewood	Westlake		
Console Staffing	**Days**	**Evenings**	**Nights**
Dispatch Console Staffing	1.4	1.6	0.6
Call Taking Console Staffing	1.3	1.1	0.5
Combined Staffing	2.7	2.7	1.1
Recommend Total Staffed			
Consoles	3.0	3.0	2.0
Total FTE Requirements = 13.0 (12.5) (Dispatchers)			

Figure 190: Option 4 – WestCom Staffing Requirements Including North Olmsted

Total alarms = 15,642 Total Telephone Calls = 55,184			
Bay Village	North Ridgeville		
Fairview Park	Rocky River		
North Olmsted	Westlake		
Console Staffing	**Days**	**Evenings**	**Nights**
Dispatch Consoles	1.4	1.4	0.6
Call Taking Consoles	1.3	1.1	0.5
Combined Staffing	2.7	2.5	1.1
Recommend Total Staffed			
Consoles	3.0	3.0	2.0
Total FTE Requirements = 13.0 (12.5) (Dispatchers)			

Appendix G: WestCom Complete Charge-Out per Budget Requirements

The following tables provide the Options with the complete charge-out method utilized by the Westshore COG Agreement.

Figure 191: Option 1 – WestCom Charge-Out All Agencies

Option 1: Central Dispatch Cost Allocation – Budget: $1,212,282				
16.0 FTE Dispatcher Requirements				
City Fire Department	10% Base Shared Equally ($121,232)	90% Population Allocation ($1,091,050)	Projected Costs Base + Population.	Percent of Population
Avon Lake	$15,154	$117,299	$132,453	10.751
Bay Village	15,154	78,632	93,786	7.207
Fairview Park	15,154	85,898	101,052	7.873
Lakewood	15,154	276,887	292,041	25.378
North Olmsted	15,154	166,745	181,899	15.283
North Ridgeville	15,154	109,192	124,346	10.008
Rocky River	15,154	101,359	116,513	9.290
Westlake	15,154	155,038	170,192	14.210
Totals	**$121,232**	**$1,091,050**	**$1,212,282**	**100%**

Options 2, 3, and 4 require the same number of FTE dispatchers (13.0); based on workload requirements and additional duties. Therefore, budgetary amounts are the same including the 10 percent base charge to all fire departments. The population percentages however, are dissimilar, providing a different allocation for the balance of the budget based on 90 percent of the population.

Figure 192: Option 2 – Central Dispatch Cost Allocation, Avon Lake Fire Department

Option 2: Central Dispatch Cost Allocation – Budget: $1,060,998				
13.0 FTE Dispatcher Requirements				
City Fire Department	10% Base Shared Equally ($106,100)	90% Population Allocation ($954,900)	Projected Costs Base + Population Fee Total	Percent of Population
Avon Lake	$17,683	172,999	$190,682	18.117
Bay Village	17,683	115,982	133,665	12.146
Fairview Park	17,683	126,687	144,370	13.267
No Ridgeville	17,683	161,053	178,736	16.866
Rocky River	17,683	149,490	167,173	15.655
Westlake	17,683	228,689	246,372	23.949
Totals	**$106,098**	**954,900**	**$1,060,998**	**100%**

Figure 193: Option 3 – Central Dispatch Cost Allocation, Lakewood Fire Department

Option 3: Central Dispatch Cost Allocation – Budget: $1,060,998				
13.0 FTE Dispatcher Requirements				
City Fire Department	10% Base Shared Equally ($106,100)	90% Population Allocation ($954,900)	Projected Costs Base + Population Fee Total	Percent of Population
Lakewood	$17,683	327,636	345,319	34.311
Bay Village	17,683	93,046	110,729	9.744
Fairview Park	17,683	101,630	119,313	10.643
North Ridgeville	17,683	129,198	146,881	13.530
Rocky River	17,683	119,935	137,618	12.560
Westlake	17,683	183,455	201,138	19.212
Totals	**$106,098**	**954,900**	**$1,060,998**	**100%**

Figure 194: Option 4 – Central Dispatch Cost Allocation, North Olmsted Fire Department

Option 4: Central Dispatch Cost Allocation – Budget: $1,060,998				
13.0 FTE Dispatcher Requirements				
City Fire Department	10% Base Shared Equally ($106,100)	90% Population Allocation ($954,900)	Projected Costs Base + Population Fee Total	Percent of Population
North Olmsted	$17,683	228,488	246,171	23.928
Bay Village	17,683	107,751	125,434	11.284
Fairview Park	17,683	117,701	135,384	12.326
North Ridgeville	17,683	149,623	167,306	15.669
Rocky River	17,683	138,881	156,564	14.544
Westlake	17,683	212,456	230,139	22.249
Totals	**$106,098**	**954,900**	**$1,060,998**	**100%**

Appendix H: Ohio Revised Code 505.71 Joint ambulance district

The boards of township trustees of one or more townships and the legislative authorities of any one or more municipal corporations within or adjoining those townships, or the boards of township trustees of two or more townships, or the legislative authorities of two or more municipal corporations, may, by adoption of a joint resolution by a majority of the members of each board of township trustees and by a majority of the members of the legislative authority of each municipal corporation, create a joint ambulance district comprising the municipal corporations and all or any portions of the townships as are mutually agreed upon, except that no portion of a township or municipal corporation being served by a joint emergency medical services district shall be part of a joint ambulance district. A district so created shall be given a name different from the name of any participating township or municipal corporation.

The governing body of a district shall be a board of trustees, which shall include one representative appointed by each board of township trustees and one representative appointed by the legislative authority of each municipal corporation in the district. Members of the board of trustees may be compensated at a rate not to exceed seventy-five dollars per meeting, not to exceed fifteen meetings per year, and may be reimbursed for all necessary expenses incurred. The board shall employ a clerk. Before entering upon official duties, the clerk shall execute a bond, in the amount and with surety to be approved by the board, payable to the state, and conditioned for the faithful performance of all official duties required of the clerk. The bond shall be deposited with the presiding officer of the board, and copies of it, certified by the presiding officer, shall be filed with the county auditor of each county with a subdivision included in the district.

To provide the services and equipment it considers necessary for the district, the board may levy taxes, subject to Chapter 5705. of the Revised Code, and issue bonds and other evidences of indebtedness, subject to Chapter 133. of the Revised Code, after submitting the question of that issuance to the electors of the district in the manner provided by Chapter 133. of the Revised Code. The district may purchase, lease, maintain, and use all materials, equipment, vehicles, buildings, and land necessary to perform its duties.

Any municipal corporation or township may join an existing district by the adoption of a resolution requesting membership and upon approval of the board of the district. Any municipal corporation or township may withdraw from a district by the adoption of a resolution ordering withdrawal. On or after the first day of January of the year following the adoption of the resolution of withdrawal, the municipal corporation or township withdrawing ceases to be a part of the district and the power of the district to levy a tax upon taxable property in the withdrawing township or municipal corporation terminates, except that the district shall continue to levy and collect taxes for the payment of indebtedness within the territory of the district as it was comprised at the time the indebtedness was incurred.

Upon the withdrawal of any township or municipal corporation from a district, the county auditor shall ascertain, apportion, and order a division of the funds on hand, moneys and taxes in the process of collection, except for taxes levied for the payment of indebtedness, credits, and real and personal property, either in money or in kind, on the basis of the valuation of the respective tax duplicates of the withdrawing municipal corporation or township and the remaining territory of the district.

When the number of townships and municipal corporations constituting a district is reduced to one, the district ceases to exist by operation of law, and the funds, credits, and property remaining after apportionments to withdrawing municipal corporations or townships, shall be assumed by the one remaining township or municipal corporation. When a district ceases to exist and an indebtedness remains unpaid, the board of county commissioners shall continue to levy

and collect taxes for the payment of that indebtedness within the territory of the district as it was comprised at the time the indebtedness was incurred.

Effective Date: 09-20-2002

Appendix I: Ohio Revised Code 505.371 Joint fire district creation

(A) The boards of township trustees of one or more townships and the legislative authorities of one or more municipal corporations, or the legislative authorities of two or more municipal corporations, or the boards of township trustees of two or more townships, may, by adoption of a joint resolution by a majority of the members of each board of township trustees and by a majority of the members of the legislative authority of each municipal corporation, create a joint fire district comprising the municipal corporations and all or any portions of the townships as are mutually agreed upon. A joint fire district so created shall be given a name different from the name of any participating township or municipal corporation.

(B) The governing body of the joint fire district shall be a board of fire district trustees, which shall include one representative from each board of township trustees and one representative from the legislative authority of each municipal corporation in the district. The board of fire district trustees may exercise the same powers as are granted to a board of township trustees in sections 505.37 to 505.45 of the Revised Code, including, but not limited to, the power to levy a tax upon all taxable property in the fire district as provided in section 505.39 of the Revised Code. The board of fire district trustees may be compensated at a rate not to exceed thirty dollars per meeting, not to exceed fifteen meetings per year, and may be reimbursed for all necessary expenses incurred. The board shall employ a clerk of the board of fire district trustees.

(C)(1) The board of fire district trustees may establish reasonable charges for the use of ambulance or emergency medical services. The board may establish different charges for residents and nonresidents of the district, and may waive, at its discretion, all or part of the charge for any resident of the district. The charge for nonresidents shall be an amount not less than the authorized medicare reimbursement rate, except that if, prior to February 4, 1998, the board had different charges for residents and nonresidents and the charge for nonresidents was less than the authorized medicare reimbursement rate, the board may charge nonresidents less than the authorized medicare reimbursement rate.

(2) In the resolution creating the joint fire district, the political subdivisions that create the district may provide that any of those political subdivisions may agree to pay any charges for the use of ambulance or emergency medical services that the board of fire district trustees establishes under division (C)(1) of this section and that are incurred by the residents of the particular political subdivision. Unless the board elects pursuant to that division to waive all or part of the charges for the use of ambulance or emergency medical services that any resident of the district incurs, the residents of a particular political subdivision that has not so agreed to pay the charges for the use of ambulance or emergency medical services incurred by its residents shall pay those charges.

(3) Charges collected under division (C) of this section shall be kept in a separate fund designated as the ambulance and emergency medical services fund and shall be appropriated and administered by the board. The fund shall be used for the payment of the costs of the management, maintenance, and operation of ambulance and emergency medical services in the district.

(4) As used in division (C) of this section, "authorized medicare reimbursement rate" has the same meaning as in section 505.84 of the Revised Code.

(D) Any municipal corporation or township, or parts of them, may join an existing joint fire district by the adoption of a resolution requesting such membership and upon approval of the board of fire district trustees. Any municipal corporation or township may withdraw from a joint fire district created under this section, by the adoption of a resolution ordering withdrawal. On or

after the first day of January of the year following the adoption of the resolution of withdrawal, the municipal corporation or township withdrawing ceases to be a part of such district, and the power of the district to levy a tax upon taxable property in the withdrawing township or municipal corporation terminates, except that the district shall continue to levy and collect taxes for the payment of indebtedness within the territory of the district as it was comprised at the time the indebtedness was incurred.

Upon the withdrawal of any township or municipal corporation from a joint fire district created under this section, the county auditor shall ascertain, apportion, and order a division of the funds on hand, including funds in the ambulance and emergency medical services fund, moneys and taxes in the process of collection, except for taxes levied for the payment of indebtedness, credits, and real and personal property, either in money or in kind, on the basis of the valuation of the respective tax duplicates of the withdrawing municipal corporation or township and the remaining territory of the joint fire district.

When the number of townships and municipal corporations comprising a joint fire district is reduced to one, the joint fire district ceases to exist by operation of law, and the funds, credits, and property remaining after apportionments to withdrawing municipal corporations or townships shall be assumed by the one remaining township or municipal corporation. When a joint fire district ceases to exist and an indebtedness remains unpaid, the board of county commissioners shall continue to levy and collect taxes for the payment of that indebtedness within the territory of the joint fire district as it was comprised at the time the indebtedness was incurred.

(E) Neither this section nor any other section of the Revised Code requires, or shall be construed to require, that the fire chief of a joint fire district be a resident of the fire district.

Effective Date: 01-25-2002

Appendix J: Ohio Revised Code 505.375 Fire and ambulance district creation

(A) (1)(a) The boards of township trustees of one or more townships and the legislative authorities of one or more municipal corporations, or the legislative authorities of two or more municipal corporations, or the boards of township trustees of two or more townships, may negotiate an agreement to form a fire and ambulance district for the delivery of both fire and ambulance services. The agreement shall be ratified by the adoption of a joint resolution by a majority of the members of each board of township trustees involved and a majority of the members of the legislative authority of each municipal corporation involved. The joint resolution shall specify a date on which the fire and ambulance district shall come into being.

(b) If a joint fire district created under section 505.371 of the Revised Code or a joint ambulance district created under section 505.71 of the Revised Code is dissolved to facilitate the creation of a fire and ambulance district under division (A)(1)(a) of this section, the townships and municipal corporations forming the fire and ambulance district may transfer to the fire and ambulance district any of the funds on hand, moneys and taxes in the process of collection, credits, and real and personal property apportioned to them under division (D) of section 505.371 of the Revised Code or section 505.71 of the Revised Code, as applicable, for use by the fire and ambulance district in accordance with this section.

(2)(a) The board of trustees of a joint ambulance district created under section 505.71 of the Revised Code and the board of fire district trustees of a joint fire district created under section 505.371 of the Revised Code may negotiate to combine their two joint districts into a single fire and ambulance district for the delivery of both fire and ambulance services, if the geographic area covered by the combining joint districts is exactly the same. Both boards shall adopt a joint resolution ratifying the agreement and setting a date on which the fire and ambulance district shall come into being.

(b) On that date, the joint fire district and the joint ambulance district shall cease to exist, and the power of each to levy a tax upon taxable property shall terminate, except that any levy of a tax for the payment of indebtedness within the territory of the joint fire or joint ambulance district as it was composed at the time the indebtedness was incurred shall continue to be collected by the successor fire and ambulance district if the indebtedness remains unpaid. All funds and other property of the joint districts shall become the property of the fire and ambulance district, unless otherwise provided in the negotiated agreement. The agreement shall provide for the settlement of all debts and obligations of the joint districts.

(B)(1) The governing body of a fire and ambulance district created under division (A)(1) or (2) of this section shall be a board of trustees of at least three but no more than nine members, appointed as provided in the agreement creating the district. Members of the board may be compensated at a rate not to exceed thirty dollars per meeting for not more than fifteen meetings per year, and may be reimbursed for all necessary expenses incurred, as provided in the agreement creating the district.

(2) The board shall employ a clerk and other employees as it considers best, including a fire chief or fire prevention officers, and shall fix their compensation. Neither this section nor any other section of the Revised Code requires, or shall be construed to require, that the fire chief of a fire and ambulance district be a resident of the district.

Before entering upon the duties of office, the clerk shall execute a bond, in the amount and with surety to be approved by the board, payable to the state, conditioned for the faithful performance of all of the clerk's official duties. The clerk shall deposit the bond with the presiding

officer of the board, who shall file a copy of it, certified by the presiding officer, with the county auditor of the county containing the most territory in the district.

The board also shall provide for the appointment of a fiscal officer for the district and may enter into agreements with volunteer fire companies for the use and operation of fire-fighting equipment. Volunteer firefighters acting under such an agreement are subject to the requirements for volunteer firefighters set forth in division (A) of section 505.38 of the Revised Code.

(3) Employees of the district shall not be removed from office except as provided by sections 733.35 to 733.39 of the Revised Code, except that, to initiate removal proceedings, the board shall designate a private citizen or, if the employee is employed as a firefighter, the board may designate the fire chief, to investigate, conduct the proceedings, and prepare the necessary charges in conformity with those sections , and except that the board shall perform the functions and duties specified for the municipal legislative authority under those sections. The board may pay reasonable compensation to any private citizen hired for services rendered in the matter.

(4) No person shall be appointed as a permanent full-time paid member of the district whose duties include fire fighting, or be appointed as a volunteer firefighter, unless that person has received a certificate issued under former section 3303.07 or section 4765.55 of the Revised Code evidencing satisfactory completion of a firefighter training program. The board may send its officers and firefighters to schools of instruction designed to promote the efficiency of firefighters and, if authorized in advance, may pay their necessary expenses from the funds used for the maintenance and operation of the district.

The board may choose, by adoption of an appropriate resolution, to have the Ohio medical transportation board license any emergency medical service organization it operates. If the board adopts such a resolution, Chapter 4766. of the Revised Code, except for sections 4766.06 and 4766.99 of the Revised Code, applies to the organization. All rules adopted under the applicable sections of that chapter also apply to the organization. The board may remove, by resolution, its emergency medical service organization from the jurisdiction of the Ohio medical transportation board.

(C) The board of trustees of a fire and ambulance district created under division (A)(1) or (2) of this section may exercise the following powers:

(1) Purchase or otherwise provide any fire apparatus, mechanical resuscitators, or other fire or ambulance equipment, appliances, or materials; fire hydrants; and water supply for firefighting purposes that seems advisable to the board;

(2) Provide for the care and maintenance of equipment and, for that purpose, purchase, lease, lease with an option to purchase, or construct and maintain necessary buildings;

(3) Establish and maintain lines of fire-alarm communications within the limits of the district;

(4) Appropriate land for a fire station or medical emergency unit needed in order to respond in reasonable time to a fire or medical emergency, in accordance with Chapter 163. of the Revised Code;

(5) Purchase, appropriate, or accept a deed or gift of land to enlarge or improve a fire station or medical emergency unit;

(6) Purchase, lease, lease with an option to purchase, maintain, and use all materials, equipment, vehicles, buildings, and land necessary to perform its duties;

(7) Contract for a period not to exceed three years with one or more townships, municipal corporations, counties, joint fire districts, joint ambulance districts, governmental agencies, nonprofit corporations, or private ambulance owners located either within or outside the state, to furnish or receive ambulance services or emergency medical services within the several territories of the contracting parties, if the contract is first authorized by all boards of trustees and legislative authorities concerned;

(8) Establish reasonable charges for the use of ambulance or emergency medical services under the same conditions under which a board of fire district trustees may establish those charges under section 505.371 of the Revised Code;

(9) Establish all necessary rules to guard against the occurrence of fires and to protect property and lives against damage and accidents;

(10) Adopt a standard code pertaining to fire, fire hazards, and fire prevention prepared and promulgated by the state or by a public or private organization that publishes a model or standard code;

(11) Provide for charges for false alarms at commercial establishments in the same manner as joint fire districts are authorized to do under section 505.391 of the Revised Code;

(12) Issue bonds and other evidences of indebtedness, subject to Chapter 133. of the Revised Code, but only after approval by a vote of the electors of the district as provided by section 133.18 of the Revised Code;

(13) To provide the services and equipment it considers necessary, levy a sufficient tax, subject to Chapter 5705. of the Revised Code, on all the taxable property in the district.

(D) Any municipal corporation or township may join an existing fire and ambulance district, whether created under division (A)(1) or (2) of this section, by its legislative authority's adoption of a resolution requesting the membership and upon approval of the board of trustees of the district. Any municipal corporation or township may withdraw from a district, whether created under division (A)(1) or (2) of this section, by its legislative authority's adoption of a resolution ordering withdrawal. Upon its withdrawal, the municipal corporation or township ceases to be a part of the district, and the district's power to levy a tax on taxable property in the withdrawing township or municipal corporation terminates, except that the district shall continue to levy and collect taxes for the payment of indebtedness within the territory of the district as it was composed at the time the indebtedness was incurred.

Upon the withdrawal of any township or municipal corporation from a district, the county auditor of the county containing the most territory in the district shall ascertain, apportion, and order a division of the funds on hand, including funds in the ambulance and emergency medical services fund, moneys and taxes in the process of collection, except for taxes levied for the payment of indebtedness, credits, and real and personal property on the basis of the valuation of the respective tax duplicates of the withdrawing municipal corporation or township and the remaining territory of the district.

(E) As used in this section:

(1) "Governmental agency" includes all departments, boards, offices, commissions, agencies, colleges, universities, institutions, and other instrumentalities of this or another state.

(2) "Emergency medical service organization" has the same meaning as in section 4766.01 of the Revised Code.

Effective Date: 03-09-2004; 05-06-2005; 09-21-2006

Appendix K: Summary Table of Cooperative Effort Strategies

The following table is a summary of the functional cooperative effort strategies that are presented in more detail in the section titled Functional Cooperative Effort Strategies. Each strategy in the summary table is provided with:

- Partnering strategy concept
- Objective
- General timeline
- Fire department organizational section or division affected

Partnering Strategy	Objective(s)	Timeline Short, Mid, Long	Section
A – Develop a Joint Support and Logistics Services Division	• Develop a joint Support Services Division that promotes improved operational readiness and achieves procurement efficiencies by eliminating duplication in the acquisition and distribution of supplies. • Create a uniform set of standards for apparatus, small equipment, PPE (personal protective equipment), emergency supplies, and IS/IT services. • Develop a joint preventative maintenance and repair service program for physical assets, apparatus, small equipment, and IS/IT systems.	Long Term	Support Services
B – Develop a Regional Fire Safety Education Coalition	Provide for the cost effective, regional dissemination of public fire safety education.	Mid-term	Fire Prevention
C – Develop a Regional Juvenile Fire Setter Intervention Network	Provide an effective means for intervening in juvenile-set/caused fires.	Short Term	Fire Prevention
D – Create a Unified Occupational Medicine Program	Provide a fire-service related occupational and health program.	Mid-term	Administration
E – Create a Unified Wellness and Fitness Program	• Provide a wellness and fitness program that promotes the improved health and well-being of personnel in all divisions and at all ranks. • Increase fitness levels and decrease injuries. • Reduce frequency and number of sick/sick injury incidents. • Reduce the number of days used for sick/sick injury leave.	Mid-term	Administration

Partnering Strategy	Objective(s)	Timeline Short, Mid, Long	Section
F – Adopt and Implement a Computerized Training Records Management System	Provide a fully integrated comprehensive training records management system (RMS).	Mid-term	Training
G – Develop and Adopt Common Training Standards	• Adopt uniform training guidelines. • Adopt uniform certification standards.	Short Term	Training
H – Create a Regional Training Manual	• Provide consistent, standardized training procedures.	Short Term	Training
I – Implement and Cooperatively Use a Video Conferencing System	• Provide standardized, consistent, and high-quality classroom training. • Reduce training staff hours required for curriculum development and delivery. • Increase in-service time of emergency response apparatus.	Short Term	Training
J – Develop an Annual Regional Training Plan	• Provide standardized and consistent training. • Provide a well-trained emergency workforce. • Provide long-term vision and direction for training delivery.	Short Term	Training
K – Consolidate Training into a Regional Training Division	• Eliminate duplicated efforts in training in the Westshore region fire department emergency responders. • Create a single Westshore training division.	Mid-term	Training
L – Develop a Regional Fire and EMS Training Facility	• Provide training facilities readily available to all Westshore fire departments. • To develop and maintain the knowledge and skills of regional emergency services personnel.	Mid-term	Training
M – Develop Uniform Fees for Service	Provide participating fire departments with a uniform schedule of fees for service.	Mid-term	Administration
N – Purchase Uniform Emergency Apparatus	• Create a single set of emergency apparatus specifications. • Provide single-source uniform emergency apparatus for all Westshore fire agencies.	Long Term	Emergency Operations

Partnering Strategy	Objective(s)	Timeline Short, Mid, Long	Section
O – Develop a Model Labor Agreement for all Regional Departments	• Demonstrate continued partnership between labor and management groups by providing a model regional labor agreement. • Align the effective dates and provisions of labor agreements to smooth the unification process between participating agencies. • Eliminate duplicated effort in developing labor agreements.	Long Term	Administration
P – Acquire AVL and MDC or MDT Capabilities	• Provide AVL (Automatic Vehicle Locator) information transmitted to dispatch for use during emergency and non-emergency incidents. • Provide standardized MDC/MDT (Mobile Data Computer or Mobile Data Terminal) in emergency apparatus.	Mid-term	Emergency Operations
Q – Develop Uniform Pre-Incident Plans	Provide a system of shared operational plans for use during emergencies and non-emergent incidents.	Short Term	Emergency Operations
R – Provide for Joint Staffing of Fire Stations and Apparatus	• Provide for distribution of facilities and deployment of personnel consistent with a regional standard of cover. • Provide consistent fire and emergency services within areas efficiently before, during, and after development.	Short Term	Emergency Operations
S – Provide Regional Incident Command and Operations Supervision	• Provide for IC (Incident Command) supervision of emergency operations. • Provide for supervision of on-duty personnel during routine operations.	Short Term	Emergency Operations
T – Purchase and Implement an Electronic Staffing Program	Provide a uniform electronic system that combines telephone callback, personnel scheduling, and includes payroll and administrative features.	Short Term	Administration and Emergency Operations
U – Develop Standard Operating Guidelines	Provide guidelines for operation during emergencies, emergent and non-emergent incidents.	Short-term	Emergency Operations
V – Shared Specialty Teams	Provide specialty teams in the Westshore region by allocating and distributing resources to achieve minimum cost and maximum operational benefit.	Mid-term	Emergency Operations

Partnering Strategy	Objective(s)	Timeline Short, Mid, Long	Section
W – Develop Mutual Training Strategies	• Provide purpose and direction for training program management and delivery. • Combine strengths and resources to: ○ Overcome current training obstacles and deficiencies. ○ Provide a comprehensive, and regionally integrated training structure. ○ Develop a mutually beneficial training program. ○ Train and certify a cadre of knowledgeable and skilled emergency responders.	Short to mid-term	Training
X – Complete Development and Adoption of a Single Fire Code	• Provide for a Uniform Fire Code with a single set of local amendments. • Provide local amendments to apply for new construction, remodels, and tenant improvements in the Westshore region.	Mid-term	Fire Prevention
Y – Provide for Westshore EMS Supervision	Provide a single point for recertification of all Westshore EMS personnel.	Short-term	EMS
Z – Provide System-Wide Guidelines for Fire Response	Define response times including maximum response times and response time definitions so that adequate system planning can take place. Establish parameters for maximum response times on a per-call basis. Develop a system-wide reporting structure to standardize the collection and reporting of response times.	Short to mid term	EMS and Emergency Operations
AA – Implement the Use of Peak Activity Units (PAUs)	Provide special response units in areas of high incident activity and for replacement of units attending training sessions or called to cover special events.	Mid-term	EMS, Emergency Operations, and Training
AB – Provide Joint EMS Supply Purchasing and Logistics Services	Standardize supply purchases through group purchasing and standardize supply distribution.	Short-term	EMS
AC – Develop Deployment Standards	Develop deployment standards that establish the distribution and concentration of emergency resources, both fixed and mobile.	Short-term	EMS and Emergency Operations

Appendix L: Apparatus Replacement Cost Analysis

Vehicle No.	Purchase Date	Make	Type	Useful Life	Years Left as of 1/1/2010	Replacement Cost	Reserve Requirement @ 1/01/2010	Annual Reserve Requirement
Air Unit	1995	International lp4700	Air Unit	20	5	450,000	337,500	22,500
E-15	1996	LTI	Engine	15	1	575,000	536,667	38,333
E-14	1995	Sutphen	Engine	15	0	575,000	575,000	38,333
E-35	2008	KME/Predator Panther	Engine	15	13	575,000	76,667	38,333
E-34	1994	KME/Falcon	Engine	15	0	575,000	575,000	38,333
E-2	1995	Sutphen	Engine	15	0	575,000	575,000	38,333
E-3	2005	Sutphen	Engine	15	10	575,000	191,667	38,333
E-4	1983	Sutphen	Engine	15	0	575,000	575,000	38,333
E-2	2002	Pierce	Engine	15	7	575,000	306,667	38,333
E-3	1994	Not Determined	Engine	15	0	575,000	575,000	38,333
E-21	1993	E-One	Engine	15	0	575,000	575,000	38,333
E-64	2005	E-One	Engine	15	10	575,000	191,667	38,333
E-65	1997	E-One	Engine	15	2	575,000	498,333	38,333
E-71	2008	KME	Engine	15	13	575,000	76,667	38,333
E-72	2008	KME	Engine	15	13	575,000	76,667	38,333
HAZ-MAT	2007	Crimson	Haz Mat	15	12	825,000	165,000	55,000
M-12	2008	Chevrolet/Braun	Medic	7	5	235,000	67,143	33,571
M-11	1997	International/Horton	Medic	7	0	235,000	235,000	33,571
M-31	2004	International/MedTech	Medic	7	1	235,000	201,429	33,571
M-33	1999	Ford	Medic	7	0	235,000	235,000	33,571
S-5	1998	International 1p 4700	Medic	7	0	235,000	235,000	33,571
S-1	2007	International 623-1nt	Medic	7	4	235,000	100,714	33,571
S-2	2004	International IWT	Medic	7	1	235,000	201,429	33,571
S-4	1995	International IWT	Medic	7	0	235,000	235,000	33,571
S-3	2010	International IWT	Medic	7	7	235,000	0	33,571
M-51	2004	Not Determined	Medic	7	1	235,000	201,429	33,571
M-52	2004	Not Determined	Medic	7	7	235,000	201,429	33,571
M-53	2000	Not Determined	Medic	7	0	235,000	235,000	33,571
M-25	2009	Braun	Medic	7	6	235,000	33,571	33,571
M-26	2002	McCoy - Miller	Medic	7	0	235,000	235,000	33,571
M-28	2004	McCoy - Miller	Medic	7	1	235,000	201,429	33,571
M-27 Rescue	1997	MedTech	Medic	7	0	235,000	235,000	33,571

Vehicle No.	Purchase Date	Make	Type	Useful Life	Years Left as of 1/1/2010	Replacement Cost	Reserve Requirement @ 1/01/2010	Annual Reserve Requirement
M-63	2007	Ford/Braun	Medic	7	4	235,000	100,714	33,571
M-67	2005	Ford/Braun	Medic	7	2	235,000	167,857	33,571
M-68	2002	Ford/Braun	Medic	7	0	235,000	235,000	33,571
M-71	2004	International/Lifeline	Medic	7	1	235,000	201,429	33,571
M-73	2000	International/Lifeline	Medic	7	0	235,000	235,000	33,571
M-74	2008	International/Horton	Medic	7	5	235,000	67,143	33,571
M-72	2004	International/Lifeline	Medic	7	1	235,000	201,429	33,571
T-31	1995	KME/Aerial Cat	Platform	20	5	975,000	731,250	48,750
T-1	2008	Crimson	Quint	15	13	975,000	130,000	65,000
L-1	1995	Pierce	Quint	15	0	975,000	975,000	65,000
L-23	2006	E-One	Quint	15	11	975,000	260,000	65,000
T-66	1992	Pierce	Quint	15	0	975,000	975,000	65,000
R-57	1997	Not Determined	Rescue	15	2	235,000	203,667	15,667
T-16	1996	LTI	Truck	20	6	1,100,000	770,000	55,000
H&L 1 Rescue	2001	Ferrera	Truck	20		11	495,000	55,000
L-22	1998	E-One	Truck	20	8	1,100,000	660,000	55,000
T-71	2002	Sutphen	Truck	20	12	1,100,000	440,000	55,000
T-72	1991	Pierce	Truck	20	1	1,100,000	1,045,000	55,000
Total Annual Funding Requirement						**$25,340,000**	**16,654,564**	**1,985,726**

Appendix N: Summary of Changes Since Report Data Collection

The processes used by ESCI to develop this document including the collection of data and information from each of the participating municipalities. In order for that information to be relative to the project and useful in generating future deployment recommendations, a specific point in time was determined as the point of reference from which data was used. Since that point in time, some of the study agencies have undergone changes in personnel and staffing due to the economic conditions of each respective organization. The following is a compilation of changes noted by each municipality during the review of the final report.

Bay Village

BVFD has seen a decrease in total staffing from 28 to 27 individuals involved in delivery service to the city.

The number of firefighter/paramedic personnel has been reduced to 19 and the total of emergency response personnel has been reduced to 25.

A recently awarded SAFER grant will allow the department to increase the number of firefighters by four personnel.

Critical tasking levels for BVFD, as well as each other agency dispatched by Westcom Central Dispatch, where developed at the time Central Dispatch became operational. BVFD, NOFD, and WFD have all reduced staffing levels and meeting the critical tasking levels indicated may not be possible.

Fairview Park

No changes.

Lakewood

No changes.

North Olmsted

Minimum staffing has been reduced to seven and typical staffing is eight personnel.

NOFD plans to reduce the number of captains to two in early 2011 from the current number of three.

Based on recent staffing reductions, the primary NOFD engine is now staffed with three personnel while the second engine is cross-staffed. The primary ambulance is staffed with three personnel and the second ambulance is cross-staffed. One individual serves as the officer in charge under minimum conditions.

Minimum ambulance staffing is currently at two personnel.

Figure 38 – City of North Olmsted, number of firefighter/paramedics was 30.00 now is 29.00.

North Ridgeville

No changes.

Rocky River

RRFD current staffing provides two personnel on the ambulance and three personnel on the engine.

Figure 145 – RRFD, budget for 2010 is $3,429,687 and a population of 20,750 equals $165.29 per capita.

Westlake

There is currently no Fire Prevention Lieutenant or Fire Marshal, only one part-time inspector, and one secretary.

Fire Prevention Captain is now a Fire Prevention Lieutenant.

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Westshore Council of Governments
Regional Fire District
Cost Comparision

This analysis illustrates the cost savings potential based on an operational cost comparison of a consolidated fire district versus four, separate, unconsolidated fire departments. The anticipated 3-year savings in operations is $1,782,430. In addition, approximately $3.3 million in duplicative capital equipment costs, $12 million in fire station construction cost, and $1.7 million in new station eqiupment would be avoided for a total savings of $$18,782,429.

	EXPENSES WITHOUT CONSOLIDATION			**PROJECTED SAVINGS WITH CONSOLIDATION**		
	2013	2014	2015	2013	2014	2015
Salaries & Benefits	15,076,377	15,340,214	15,608,667	518,597	564,069	610,882
supplies	343,792	347,230	350,702	10,212	11,150	11,202
Capital Equipment		2,200,000	1,100,000		2,200,000	1,100,000
repair/mnt	600,934	606,943	613,012	16,364	16,943	23,012
3 New Fire Stations[1]			12,000,000			12,000,000
New Equipment [2]			1,700,000			1,700,000
Total	**16,021,103**	**18,494,387**	**31,372,381**	**545,172**	**2,792,161**	**15,445,096**
Revenues						
EMS Reimbursements	1,373,600	1,387,335	1,401,210			
Property Taxes	11,031,752	11,214,335	11,399,323	984,398	989,155	997,345
Income Taxes	3,824,420	3,887,716	3,951,849	449,444	453,006	457,752
Grants	30,000	30,000	30,000			
Transfer	700,000	725,000	750,000	50,000	100,000	150,000
Total	**16,959,772**	**17,244,386**	**17,532,382**	**1,483,842**	**1,542,161**	**1,605,097**

[1] Westshore Council of Governments Fire, EMS Consolidation Study, (Emergency Services Consulting International, 2010)International, October 2010, pp. 5-7.
[2] (Emergency Services Consulting International, 2010)p. 7

RESOLUTION NO. 12-01
INTRODUCED BY: MAYOR BOBST

A RESOLUTION
OF SUPPORT FOR THE APPLICATION TO THE STATE OF OHIO DEPARTMENT OF REDEVELOPMENT LOCAL GOVERNMENT INNOVATION FUND GRANT AND DECLARING AN EMERGENCY.

WHEREAS, The Cities of Westlake, Bay Village, Rocky River and Fairview Park are members of the Westshore Council of Governments since 1971; and

WHEREAS, for decades the Westshore Council of Governments has been considered a leader in regional collaboration and cooperation sharing services such as the Rocky River Waste Treatment Plant, Central Dispatch, Hazmat, Westshore Enforcement Bureau, SWAT, Bomb Squad, Specialty Rescue Teams,and others; and

WHEREAS, the difficulties in connection with funding for our public safety forces impact the Westshore Region as a whole; and

WHEREAS, the Mayors of Bay Village, Westlake, Rocky River, and Fairview Park recognize the importance of working together to continue providing the level of efficient safety service that protects our residents, businesses, and visitors and thereby investing in the future quality of our Region;

NOW THEREFORE, BE IT RESOLVED by the Westshore Council of Governments:

SECTION 1. That the Mayors of Bay Village, Westlake, Rocky River, and Fairview Park support the application to the State of Ohio Department of Redevelopment Local Government Innovation Fund Grant in the amount of $100,000 for the hiring of a Project Manager for the Phase Two Planning Study of the Westshore Regional Fire District.

SECTION 2. That this Council of Governments finds and determines that all formal actions of this Council concerning and relating to the passage of this resolution were taken in an open meeting of this Council Of Governments, and that all deliberations of this Council and of any committees that resulted in those formal actions were in meetings open to the public in compliance with law.

SECTION 3. That this resolution is hereby declared to be an emergency measure immediately necessary for the preservation of the public peace, health, safety and welfare, and for the further reasons stated in the preamble hereof, wherefore this resolution shall be in full force and take effect immediately upon its passage.

Deborah L Sutherland, Mayor
City of Bay Village

Dennis Clough, Mayor
City of Westlake

Pamela Bobst, Mayor
City of Rocky River

Eileen A. Patton, Mayor
City of Fairview Park